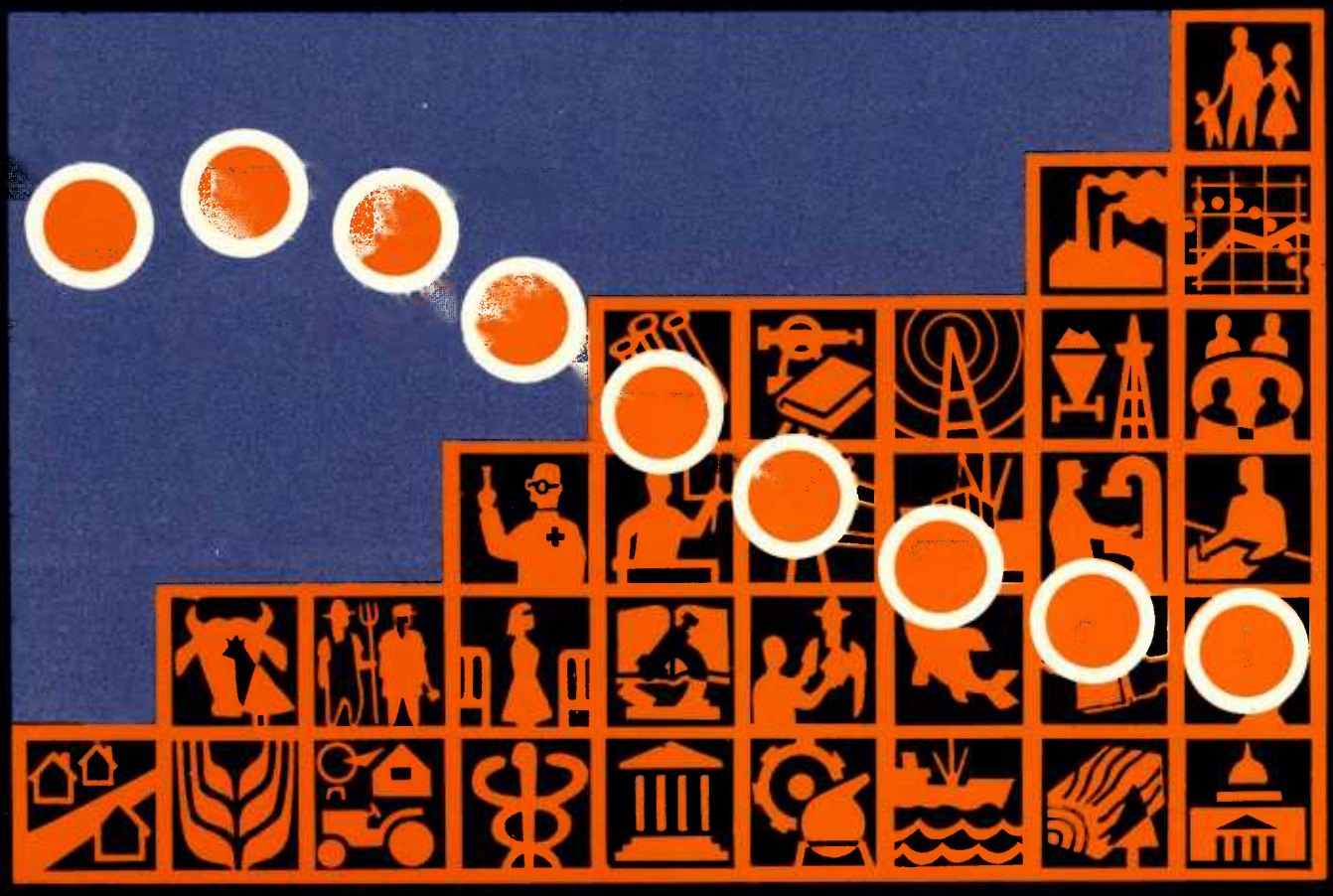
WORLD POPULATION TRENDS AND POLICIES

1977 Monitoring Report

VOLUME I

Population Trends



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(Continued on p. 3 of the cover)

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Department of Economic and Social Affairs

Population Studies, No. 62

WORLD POPULATION TRENDS AND POLICIES

1977 Monitoring Report

VOLUME I

Population Trends

UNITED NATIONS

New York, 1979

NOTE

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The term "country" as used in the text of this publication also refers, as appropriate, to territories or areas.

In some tables, the designations "developed" and "developing" economies are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process.

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

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PREFACE

This report was prepared in response to a recommendation in the World Population Plan of Action, adopted at Bucharest in 1974 by the United Nations World Population Conference, to the effect that the monitoring of population trends and policies "should be undertaken continuously as a specialized activity of the United Nations and reviewed biennially by the appropriate bodies of the United Nations system, beginning in 1977."[1]

The study is published in two volumes: volume I comprises an introductory overview of population trends and policies and a report on population trends, while volume II consists of a report on population policies. The report on population trends was prepared by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat on the basis of inputs by the Division itself, the International Labour Organisation, the Food and Agriculture Organization of the United Nations, the United Nations Educational, Scientific and Cultural Organization and the World Health Organization. The regional commissions also contributed helpful information. The report on population policies was prepared by the Division on the basis of information derived from the Third Inquiry among Governments on Population and Development, as well as from other official sources.

Since the 1977 round of monitoring was the first to be undertaken, it was felt that the scope of the monitoring of population trends should preferably be wide enough to cover the basic demographic variables, namely, population growth, mortality, fertility, migration, urbanization and the main structural aspects, including sex, age, labour force participation, dependency, and groups of special social and economic significance. Some of the more general and interdisciplinary aspects, namely, population and food and population and education, have also been included in recognition of their important interrelations with population.

Numerous assessments of population trends have been undertaken in the past by the Population Division. Mention should be made, for instance, of *The World Population Situation in 1970*,[2] *Population Bulletin of the United Nations, No. 1–1976, with Special Reference to Conditions and Trends of Fertility in the World*,[3] *Levels and Trends of Fertility in the World, 1950–1970*,[4] *The Situation and Recent Trends of Mortality in the World, a Factor Analysis of Sex-Age-Specific Death Rates*,[5] *Growth of the World's Urban and Rural Population, 1920–2000*,[6] and three consecutive reports on *World Population Prospects as Assessed in 1963*,[7] *World Population Prospects as Assessed in 1968*[8] and *World Population Prospects as Assessed in 1973*.[9] The specialized agencies and regional commissions have also published sectoral or regional assessments. This is the first time, however, that a report has been prepared covering such a wide range of simultaneous studies of world population trends and policies.

The Population Commission at its nineteenth session, held in January 1977, reviewed a draft of this report and concluded that the two parts "contain a wealth of information and analyses which should be made available to Governments, demographers and planners. The finalized versions of those two studies, together with their annexes, should be given wide circulation".[10]

Acknowledgement is due to the United Nations Fund for Population Activities whose grant made this publication possible.

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[1] *Report of the United Nations World Population Conference, 1974* (United Nations publication, Sales No. E.75.XIII.3), part one, chap. I, para. 107.

[2] United Nations publication, Sales No. E.71.XIII.4.

[3] United Nations publication, Sales No. E.64.XIII.2.

[4] United Nations publication, Sales No. E.77.XIII.2.

[5] United Nations publication, Sales No. E.62.XIII.2.

[6] United Nations publication, Sales No. E.69.XIII.3.

[7] United Nations publication, Sales No. E.66.XIII.2.

[8] United Nations publication, Sales No. E.72.XIII.4.

[9] United Nations publication, Sales No. E.76.XIII.4.

[10] See *Official Records of the Economic and Social Council, Sixty-second Session, Supplement No. 4* (E/5913), para. 64.

CONTENTS

Volume I

List of tables

Explanatory notes

The following symbols have been used in the tables throughout the report:

Three dots (...) indicate that data are not available or are not separately reported.

A dash (—) indicates that the amount is nil or negligible.

A blank in a table indicates that the item is not applicable.

A minus sign (-) indicates a deficit or decrease, except as indicated.

A full stop (.) is used to indicate decimals.

A slash (/) indicates a crop year or financial year, e.g., 1970/71.

Use of a hyphen (-) between dates representing years, e.g., 1971–1973, signifies the full period involved, including the beginning and end years.

Details and percentages in tables do not necessarily add to totals, because of rounding.

INTRODUCTION: AN OVERVIEW OF WORLD AND REGIONAL POPULATION TRENDS AND POLICIES, 1950-1975

World and regional population trends during the third quarter of the twentieth century remained closely linked with social and economic development. The specific nature and form of such linkages evolved greatly, yet their strategic importance continued to underline the need to consider population questions and development issues simultaneously.

From both the demographic and the development perspectives, the last 25 years have defined so enormous a watershed in demographic affairs that a return by most large regions of the world to even approximately their pre-1950 vital patterns would seem inconceivable. This will become apparent often in the pages that follow, as the descriptive details on trends and policies accumulate by subject-matter and regional areas.[1] Briefly put, population changes of the past several decades have been on scales or in directions without parallel in human history, whether one judges by the orders of magnitude involved, the extent of discontinuity with the past, socio-economic consequences, or any combination of some or all of these. The theme of dramatic change holds no less true with respect to the remarkable recent expansion of political responses to population trends in all parts of the world. The present chapter, which provides a summary of findings, will make frequent illustrative reference to both of these generalizations concerning trends and policies.

TRENDS

Global and broad regional patterns

The population of the world amounted to very nearly 4 billion as the third quarter of the twentieth century drew to a close. The 60 per cent increase that this represents over the 1950 size of 2.5 billion is equivalent to an average growth rate of nearly 2 per cent, or over double the rate for the first half of the twentieth century and from three to four times the rate prevailing in the nineteenth century.

The global increase is currently estimated to be not far below the same 2 per cent level. Although there have been some indications of late that smaller rates of growth may soon appear, as far as can be foreseen at present trends appear certain to remain substantially beyond anything experienced before 1950 in the way of a long-run global tendency. Probable, though much less certain, is the expectation that the world's population at the end of the century will be closer to 6 billion than to 5 billion; moreover, levels in excess of this range cannot be ruled out as being unreasonable. In terms of absolute amounts of growth, the current situation is such that 1 billion persons are added about every 15 years. Short though this period may seem today, it could shrink to a decade or so by the year 2000, barring drastic shifts in vital rates.

Because of major gaps in data, involving a possible 5–10 per cent margin of error in estimated population size, the growth characteristics of the less developed regions are better described by orders of magnitude than by precise statements of magnitudes. In broad terms, it appears that the 1950–1975 annual rates of increase in these regions have been substantially above 2 per cent, that their annual rise in absolute amounts approximates 65 to 70 million, and that their doubling time is about 30 years. Whether their aggregate growth rate has started to recede in recent years cannot be ascertained, owing to incomplete and often conflicting indications, but some deceleration seems more probable than does acceleration. The next decade or two should be crucial in resolving this question, which, in straight numerical terms, is perhaps the most central uncertainty of all as far as world population prospects are concerned.

The remaining, or "more developed", regions provide essentially correct and complete data on their main population facts. Hence it can be accurately reported that their aggregate population rose from very nearly 850,000,000 to 1,125,000,000 between 1950 and 1975, an increase of about one third. Average growth rates in these regions came to about 1.1 per cent annually for the entire period 1950–1975 and were falling during the second half of the period. As a result, their share of world population declined from above 34 per cent to below 30 per cent, a marked change of relative position for so short a span of time. As of 1975, their current annual growth rate was not much above one third the rate in the less developed regions.

It is a measure of the demographic times in which we live that an annual growth rate of 1 per cent, now relatively low by global and many regional standards, would match the rate prevailing in today's developed regions during the half century of their maximum ex-

[1] For convenience, the largest regional groupings used below for dealing with trends have been the usual ones of "less developed" and "more developed", as established by the Population Division of the United Nations Secretariat on the basis of demographic criteria. The former category includes all nations and other territories of Africa, Asia less Japan, Latin America less the temperate zone countries of Argentina, Chile and Uruguay, and Oceania less Australia and New Zealand. The latter category includes all of Europe, the Union of Soviet Socialist Republics, Northern America, and the nations or regions just cited as being outside the "less developed" classification. Within these two broadest groupings, 24 geographic subdivisions have been used at numerous points, as has an additional, intermediate set of eight regional-type aggregates of subdivisions known as "major areas".

pansion, the period from 1850 to 1900, and is well above any earlier half-century global rate on record.

The post-war acceleration of world population growth has been mainly the result of mortality declines. Between 1950 and 1970, the global expectation of life at birth rose from about midway between 40 and 50 years to midway between 50 and 60 years, an enormous rate of change never before even remotely approximated. Fertility, which estimates suggest may have declined by a limited margin, perhaps 10 per cent or less, has played a distinctly secondary role in affecting the change in global rates of growth.

If the facts were known, the over-all difference of more than 1.5 percentage points between present rates of growth in the less developed and more developed regions might well be found to exceed the largest disparities at any period in history among major regional groupings of populations. Some 80 per cent, or eight out of ten, of the additions to world population have been in the currently less developed regions during the past quarter of a century and this proportion will probably rise to about nine out of 10 additions in the next such period. As striking as the size of these differences has been the speed at which they have emerged.

Components of change

In both the more and the less developed areas, the 1950–1975 components of growth have exhibited remarkably novel directions of trend or orders of magnitude, or both. From a host of socio-economic behavioural and policy viewpoints, in particular changing patterns of life-style and effects on age composition, this fact has been as important as the absolute and relative amounts of growth as such, large as these have been.

Mortality in dozens of nations belonging to the less developed regions has often come down with unparalleled speed despite continuing economic backwardness, as downward trends that in earlier times and places required generations to achieve have been compressed into decades. As a result, the average death rate in these regions is estimated to have dropped between the early 1950s and early 1970s from nearly 25 per 1,000 to about 15 per 1,000, a 40 per cent decline, while life expectancy has climbed from perhaps 40 years to more than 50 years, an increase of over 25 per cent. Most populations of Latin America and Asia, along with a part of Africa, have suddenly moved well into the range of mortality experience found in the industrialized regions earlier in this century, sharply diminishing the lags of 100 years or lags that had been traditional before 1950.

Fertility in the less developed regions, by remaining high on average, has kept their over-all growth rate (as well as their rate of natural increase) at levels that are unique by historical standards, indeed higher by enormous margins than the maximum decadal or generational rates of increase encountered previously in any long-settled, developed region. There are, however, some significant indications of potential or prospective change, since fertility in a number of individual countries and regions has begun to decline by substantial amounts—indeed, on occasion, at precipitous rates. Such declines, if sustained, could signal the end of childbearing patterns that have endured for centuries or even millenia.

Estimates available for the less developed regions as a whole suggest that, in the quarter of a century just ended, their aggregate birth rate may only have declined from a range of 40–45 per 1,000 to 35–40 per 1,000, a shift of perhaps no more than 10–15 per cent. Should a major downsurge of fertility occur soon, and in increasingly numerous parts of these regions, the recent declines could prove more significant indicators for the future than the fact that the birth rate—and more refined fertility measures—for the less developed populations as a whole have been resistant to rapid change. It is well to recall in this regard that a list compiled in 1950 of nations showing a limited trend or no substantial change would have covered practically the full array of populations throughout Africa, Asia and Latin America.

Most of the main shifts in vital trends that have emerged in the less developed regions during recent decades are still at an early stage or of limited geographical scope. As a result, national and subregional differences in mortality and fertility within the less developed regions have shown a trend towards uniquely high levels by historical standards. Such differences are more likely to widen than to narrow for a number of decades, as some countries not long dislodged from age-old vital patterns become strongly launched along non-traditional paths of change, and other countries show little variation.

Since age composition is resistant to change from downward trends in mortality alone, even when these are of spectacular magnitudes, all or nearly all age groups in the higher-fertility, higher-mortality regions of the world have been accelerating at roughly the same rate. It follows that a host of socio-economic consequences—including the need for an expansion of educational resources for the young, annual rates at which young adults enter the labour force, growth of employment needs for persons in the middle years of employment and rising levels of support required for the aged—will all involve accommodations going far beyond previous orders of magnitude. With modifications in detail, but almost none in broad terms, the same conclusion would hold good whether the populations of the less developed nations were considered in continental terms, for subcontinental areas or for any long-settled individual country.

An important implication of the recent declines in fertility in a number of less developed countries has been the need to modify an important rule of thumb. For many years, extending well beyond 1950, a gross reproduction rate of about 2.0 provided a more consistent basis for separating more developed and less developed areas than did any other single development indicator, including *per capita* income. By 1975, however, the point of division had shifted to 1.5 and it has become increasingly doubtful whether earlier patterns

of pronounced consistency between fertility and socio-economic structure will continue to hold up in the decades immediately ahead.

In the more developed regions as well, the period 1950–1975 appears to have marked the end of an era in major respects. Here the possibility that looms largest is that secular dynamism could soon give way to stationariness. National rates of increase have often slowed to a point where near-equality of births and deaths could soon materialize on a region-wide basis if recent downward trends were to continue only a little longer. Negative rates of growth have already appeared in several countries or promise to do so very shortly. Such tendencies towards negative, zero or near-stagnation levels of natural increase have occurred despite the near-elimination of mortality as a factor affecting replacement. The dominant cause of low current growth potentials among nearly all industrialized populations has been their low fertility, which is characteristically close to or at the lowest levels ever reached in their history, except possibly in periods of acute depression or war.

Declines in mortality in the world's more developed regions have led to such low age-specific death rates over the young and middle-adult decades of life that further such declines—the main sources by far of earlier increases in expectation of life at birth—can no longer raise longevity by amounts comparable to those seen in earlier trends. Only revolutionary advances in the treatment of the diseases of old age, on a scale going far beyond anything known in the past, could alter the outlook. Simultaneously, the convergence of mortality at the younger ages has progressed so far throughout the more developed regions that male-female differences of life expectancy within nations have characteristically come to be far higher than the differences for either sex between nations.

In the early 1950s, expectation of life at birth in the more developed regions as a group was close to 65 years. In the mid 1960s it reached 70 years and since then it has been inching up very slowly. As a result, the percentage increase for 1950–1975 as a whole has been well under 10 per cent. The crude death rate declined by much the same limited margin during this period, from about 10 per 1,000 to somewhat over 9 per 1,000.

Meanwhile, and also apparently for the first time, crude death rates have become more subject to increases because of changing age composition than to decreases because of declines in mortality. It follows that prospective long-run changes in death rates appear more likely to rise than to fall among the world's low-mortality countries, thereby lowering growth rates.

As a result of extremely rapid downward trends in fertility nearly everywhere in the more developed regions during the past decade or two, rates of childbearing are close to replacement in most countries and have gone below replacement in many. Moreover, the sustained nature of the trends, along with the persistence of many of the main reasons for them, such as sharp increases in marital instability and rapidly rising costs of raising children, suggest a greater probability of further declines than of upward trends.

Over-all, birth rates in the more developed regions declined from approximately midway between 20 and 25 per 1,000 in the early 1950s to nearly midway between 15 and 20 per 1,000 in the early 1970s, a drop of 25 per cent in round terms. The decline during the first half of the period was steady despite disparate movements in different regions. Fully reported refined measures of fertility as of 1975 are not yet available, but the data at hand suggest that the all-region net reproduction rate was within 10 per cent of replacement for 1970–1975, on average, and falling.

What is almost certain is that current (1976) mortality and fertility are such that net reproduction is, at most, only percentage points above replacement for the combined low-fertility populations of the world. This would be quite consistent with the fact that the current rate of natural increase for such populations is well under 1 per cent.

Should the recent trends continue, a longer-run natural increase in large parts of the more developed regions could turn into a negative trend before the end of the century, a prospect for which there has been no precedent for several centuries at least. This could happen in some individual countries, regions or subregions even if the trends merely ceased and birth rates settled at a point not far below the one they have already reached.

"Medium variant" projections as assessed in 1973 by the Population Division of the United Nations Secretariat suggest an essentially downward movement of global and regional growth rates over the next 25 years. For the world as a whole and for its more developed and less developed regions, the projected annual rates are 1.5, 0.5 and 2.0 per cent in round terms, respectively, by the end of the century. "Low variant" projections would reduce the first and third of these rates, or those for the world and less developed regions, by about 20 per cent, while "high variant" measures would raise them by a like margin. For more developed regions, the corresponding modifications of the "medium" rate would amount to some 30–40 per cent. However, a number of recent changes in trends in some regions suggest that even these broad ranges of possibilities may require re-examination in the near future.

Two individual developments in the more developed regions during the post-war period merit special attention. One is the rise of fertility in many of these areas during the early part of the period. Such increases were often of a different order of magnitude than the upsurges found after the First World War, and constituted, in effect, the first instance in a century or more of a substantial reversal of long-run downward trends. A second development of special interest has been the rise of male adult-age mortality in a number of countries in some recent years. Although such increases have not as a rule been large, any upturn of more than a highly transitory nature would be novel when contrasted with the almost uniformly downward direction of peacetime mortality trends for both sexes at all ages since the nineteenth century. Since increases are still under way in a few countries, while apparently disappearing in others, their longer-run significance remains to be gauged.

A key parameter affecting prospective growth-rate

variations over space and time in the world's regions is that over-all fertility in the less developed areas is currently some 2.5 times higher than it is in the more developed countries. Almost surely, this is a historic peak, unmatched by what is known or even hypothesized concerning large regional masses of population in any earlier era.

A second key correlate of such variations is that the proportion of the world's population living in the less developed regions has been growing rapidly and is likely to do so in future. Compared with the two-thirds proportion estimated for 1950 and the 70 per cent level existing today, something like four fifths can be anticipated to be the proportion a quarter of a century from now.

Marked changes in the degree of mortality and fertility variations within regions have been a further outstanding aspect of the world's 1950–1975 demographic experience. In the more developed regions, mortality levels have converged massively, as national differentials in life expectancy fell by well over half between the early 1950s and 1970s or from a range of seven years around an average life-expectancy of 65 years to one of less than three years centred at about 72 years. Childbearing rates, though more diverse in these regions, have also moved strongly in the direction of greater homogeneity. Total fertility (or gross reproduction) rates in the early 1970s differed by only about 15 per cent between lowest and the highest regional measures—roughly from 2,100 to 2,500 per 1,000 women—in Northern America, Eastern Europe, Northern Europe, Southern Europe, Western Europe and the USSR. Only Australia plus New Zealand and Temperate South America, with a combined small percentage of the total population involved, have been characterized by atypical fertility levels, about 2,900 and 3,100 respectively, in recent years. Nationally, it is not only the differences that have been undergoing substantial change but also their comparative ranking from high to low.

In the less developed regions, increasing diversity, rather than convergence, has probably been the rule. Thus, some nations have achieved enormous gains in longevity and others apparently much less. It is not unreasonable to suppose that many nations in which expectation of life at birth is today beyond 60 years, as in much of Latin America, East Asia and Micronesia-Polynesia, are much further in mortality terms from the populations at the 40–45-year levels estimated for Eastern, Middle and Western Africa than was true a quarter of a century ago. The remaining less developed regions, or Northern and Southern Africa, Melanesia and Eastern, Middle and Western South Asia, are all estimated to be about midway between these extremes, with approximately 50–55 years as their measures.

Growth rates in the less developed areas might well diverge for a while, rather than begin to converge, if the death-rate differentials now holding true between some regions were to begin to show a downward trend. Crude death rates throughout Africa appear to be roughly between 15 and 25 per 1,000, while the rate for "Other East Asia" (defined as East Asia less China and Japan) is below 10 per 1,000. Since the growth rates in Africa are considerably higher, a more rapid decline of its death rate could add from one half to a full percentage point to its lead over East Asia in this respect.

There is also a good possibility that differences between high and low levels of fertility in the less developed regions will show an increase for a number of decades to come. The reason is that dramatically sharp downturns in some individual areas have been accompanied by unchanging or perhaps even rising levels in others. On one side of the mixed pattern is the fact that the declines that have occurred have often involved special geographic or cultural circumstances, in particular small or island populations, or have had to be estimated within uncomfortably large margins of error. It is also true that neither the level nor, even more, the trend of fertility can be reliably measured for a single one of the seven largest nations in the less developed regions, though these comprise fully two thirds of the total population of these regions and half of the world's total. Even so, the odds are no longer small that further fertility declines will take place in many of the low-income areas in which such declines have already begun, and that substantial declines will begin where such processes are still potential rather than realized. Nor can one exclude the possibility that future downward trends in today's high-fertility areas will often be more rapid than were the corresponding earlier downward trends in areas of low fertility, much as was the case for mortality. At the same time, it is probable or certain that national and regional fertility patterns in most less developed parts of the world continue to be close to their traditional elevated levels. In Africa especially, according to the highly uncertain estimates available to date, some national fertility rates may well have risen in recent years and some may continue to do so, while many may not fall, at least, for a long time to come. For the moment, therefore, rising variability among fertility levels in the less developed regions seems indicated, rather than diminishing average differences.

Specifically, a forecast in this direction is suggested by the juxtaposition of a seeming or at least so far undiscovered absence of large changes in Africa and major parts of South Asia, side by side with the apparently substantial declines taking place in practically all of East Asia, in parts of the Caribbean region and in several additional Latin American areas. On a rough order of magnitude, gross reproduction rates currently range from about 1.5 to 2.0 for East Asian populations, on the low side, up to approximately 3.0 in South Asia, Middle America, Melanesia, and all regions of Africa, on the high side. At intermediate levels are the Caribbean, Tropical South American and Micronesian-Polynesian populations.

As a consequence, differences between high and low levels in the growth rates of the less developed regions appear likely to remain resistant to decline in the foreseeable future. The highest rates encountered in these regions throughout the past quarter of a century have been those of Middle America and Tropical South America, while the pace of growth in Africa, which has been increasing since about 1950, is not likely to abate in the near future. The rates have been on the low side

in China throughout the post-war period, and in the region of Other East Asia following the very large but temporary perturbations experienced around the period of the Korean War.

The differences between the less developed and more developed regions and how such differences have changed are major themes that recur throughout the present publication.

The differences in mortality between the two types of region have decreased to a phenomenal extent in a large number of national and regional instances, while the gap has remained very wide in other individual cases and on average. For fertility, the average gap and most individual contrasts have widened, but not without a narrowing of differences in a limited, if increasing, number of individual cases.

New patterns of change have also been characteristic of international migration movements over the 1950–1975 period. Three in particular should be especially noted. One has been the changing direction of the main movements within Europe, away from their traditional east-to-west orientation and towards a south-to-north orientation. Another has been the sudden reversal of that continent's position as a net intercontinental sender to that of an apparent net receiver of migrants. The third involves the sharp recent acceleration in the numbers migrating from less developed to more developed regions. An emerging and related problem of some significance is that posed by the "brain drain" movements of professionals and relatively skilled workers from the former to the latter areas.

Infant, maternal and differential mortality

Not only is infant mortality a major indicator of environmental influences on death rates but its levels and trends have prime importance for fertility as well. Viewing infant mortality from the mortality and fertility standpoints simultaneously therefore gives added significance to the sharp international differences often found among or within nations and regions.

In the developing regions, levels of mortality among infants and young children are still very high in many, indeed most, individual countries. Available estimates suggest an upper-range interval of over 150–200 infant deaths per 1,000 live births in all parts of Africa, a lower range of about 70–100 in Latin America and East Asia, and an intermediate one of 100–150 in most other parts of Asia plus the larger high-mortality populations of Oceania. Unfortunately, few well measured national rates exist for any of these regions and these estimates alone can provide little or no basis for generalization. About all one can state with assurance for general comparative purposes is that almost all actual rates must be far higher than most of the published national rates for the more developed regions. Even in this regard, since better documented areas in the less developed parts of the world tend to have lower rates than do the undocumented ones, the explicit comparisons that can be made undoubtedly understate the real situation. Such comparisons are further biased by a tendency towards understatement in the more carefully estimated measure.

In the more developed regions, national rates of infant mortality nearly everywhere fell to less than half their initial levels between 1950 and 1975; not infrequently, the decline was as high as two thirds. Barring future upward fluctuations or reversals of trend, therefore, the amounts of decline over the past quarter of a century cannot be duplicated; this is true not only for the regions generally but also for single countries.

This is not to deny that substantial variations can be found within the low-mortality areas, since infant death rates among individual regions still range from 15 to 30 per 1,000. In particular, parts of Eastern and Southern Europe would have to experience further declines of about one half to two thirds to reach the average or lowest national levels now encountered in other more developed regions.

It seems probable from the sources available that the gap between infant mortality in many less developed areas and in the more developed regions as a whole has fallen greatly in recent decades. A number of apparently contrary instances, involving low percentage declines for some higher-mortality populations between 1950 and 1975, can be explained either by the fact that such declines followed extremely rapid downward trends shortly before 1950 or by demographically atypical circumstances. Moreover, absolute differences between infant rates in the less developed and more developed regions could well decline even with larger percentage declines in the latter areas. This arithmetical-type effect has become widespread since the war for low-mortality populations, for which even small absolute changes can imply large percentage shifts in relation to low initial or base-period values.

Only for the more developed regions do data on the timing and causes of infant mortality effectively exist in usable form. These data show especially large post-1950 decreases in post-neonatal (second through twelfth month) mortality rates and associated causes of death, and lesser declines in neonatal (under one month) mortality. As a result, with the exception of parts of Eastern and Southern Europe, first-month mortality currently accounts for well over half of all first-year deaths in the world's low-mortality areas. At the same time, considerable progress has recently been registered in reducing late foetal and early post-natal mortality, as evidenced by often pronounced declines in neonatal and perinatal (between seven months gestation and seven days after birth) rates. Although congenital malformations have tended to remain relatively resistant to change, substantial declines have been registered in deaths from other late pre-natal and early post-natal causes.

Many of the above international mortality patterns for the first year of life carry over to early childhood. In all regions mortality risks in the first half of the four-year interval from ages 1 to 5 are far higher than in the second half, with a high differential between the less and more developed regions with respect to deaths caused by infectious diseases; there is often a wide variation among subnational population groupings within countries.

During the post-war period maternal mortality has fallen rapidly in all parts of the more developed regions, as well as in the few higher-mortality areas for which published records exist. Something like a three-fourths reduction can be calculated from the data for either grouping of areas, though this may be a typical parameter for the first group only. Wherever measured, the declines in maternal deaths have been substantial in relation to numerous bases for comparison: numbers of births, numbers of women or adult-female deaths from all causes. At the same time, maternal mortality rates wherever measured continue to be a steeply rising function of age beyond 20, much as has been the case traditionally.

Mortality differentials by socio-economic groupings within countries tend to be available for analysis less often than fertility differentials. Few general conclusions can therefore be reached on this score, even within the more developed regions or the most well documented areas within those regions. One such conclusion, according to the informational base at hand, suggests a typically positive correlation between socio-economic status and survival changes (or, equivalently, an inverse relation between status and mortality). In particular, occupational and educational classifications of status suggest clear and even pronounced tendencies along these lines.

Another noteworthy source of differential mortality risks, according to the occasional documentation available, is marital status. In a number of countries, married persons of either sex of about 50 years of age show lower death rates than do their age peers who are single, widowed or divorced. In turn, among the latter three categories, the highest rates for females are most often found among single persons, while those for males are among the divorced. Rates for the widowed of either sex are generally intermediate.

Neither levels nor trends of mortality in the more developed regions have been uniformly higher or lower in urban compared with rural populations. The data available on this subject show differences that go either way, and indeed sometimes vary by sex within a country. The amount of the difference may also vary appreciably between countries. In less developed areas, for which statistical documentation is very sparse, available indications point strongly to lower mortality in urban areas. As with infant mortality, the contrast in this regard with historical experience during the nineteenth century is strongly suggestive of a changed mix of main causal factors. These would appear to involve the increased relative importance of applied disease-control technology in the world's low-income areas during recent decades, compared to the state of the technology that could be applied in the more developed regions about a century ago.

Fertility attitudes

A major addition to knowledge of fertility patterns and their causes during recent decades has come from surveys in all parts of the world on childbearing attitudes and desires. Such surveys, generally based on samples, have numbered in the hundreds and have given rise to a considerable literature on detailed results, attempted general conclusions and suggested hypotheses. These sources are discussed in chapter III.

Unfortunately, data problems at least as severe as those encountered in studying fertility behaviour arise in dealing with attitudinal correlations. Widespread statistical attempts at documenting "ideal," "expected," or "desired" numbers of children have begun to emerge in the last two decades, and satisfactory intertemporal and international comparability of findings will call for numerous such attempts in future.

The main comparative conclusion most clearly substantiated by the data is also the least surprising, although documentation of its specific numerical aspects marks a major step forward. The differences between the numbers of children considered "ideal" or "desired" among the population groups surveyed in the less developed regions and the lower corresponding numbers in more developed areas tend to be very large—about three children on average. This differential roughly represents the motivational transformation needed if the world's high-fertility populations are to adopt low-fertility values.

Data on expected numbers of children in high-fertility areas, although involving very few countries, are consistent in showing that these exceed both the ideal and the desired numbers. In addition, several other such areas show ideal numbers of children to be above the desired numbers. The first of these relations can arguably be interpreted as a useful approximation of discrepancies between actual fertility behaviour by individuals and their personally preferred behaviour. The second suggests discrepant tendencies of tradition or social prescription (ideal number) and personal preferences (desired number). Either interpretation, if valid, could imply a developing potential for reduced fertility, even if individual or social value structures proved resistant to change. Although vague and essentially unsubstantiated, these speculations can no longer be prudently ruled out in anticipating future fertility trends in large areas of the less developed regions.

Within the more developed regions, in contrast, the near equality found between ideal and expected numbers of children (practically no data being available on desired numbers), suggests a close correspondence between motivation and performance. Accordingly, the attitudinal statistics as such give little basis for anticipating the direction of future fertility trends. Furthermore, the data available are as a rule much too dated to have current relevance, given the pace of subsequent fertility changes in these regions.

Nuptiality

Closely related to fertility behaviour are nuptiality levels and trends, which, in addition, are significant in their own right as major social phenomena. As with the data on attitudes affecting fertility, however, interpretation of marriage patterns is plagued by large gaps

in data, problems of inaccuracy and incomparability of definitions. These difficulties will be seen to arise often in the discussion of family formation patterns to be found in chapter III.

In Africa, nothing of a region-wide nature can be deduced concerning nuptiality patterns. Perhaps the main finding of interest is that sharply declining fertility in Mauritius has been accompanied by a pronounced rise in the proportion of single females under the age of 25. Analogous associations have occurred over the past 25-year period in a small number of areas in Asia, all involving small or island populations, for which trends in marital status can be documented. On the other hand, Latin America since 1950 gives instances of constant and even decreasing proportions of single females under circumstances of declining fertility. Since statistical bias is so interlaced with fact in this region as a result of the prevalence of consensual unions, adequate interpretation of its seeming deviations from other regions may simply be unattainable, at least for the present.

An interesting modal tendency in all three of the less developed continents has been for the percentage of women who eventually get married to remain fairly stable or even to rise, as indexed by the proportions aged from 40 to 50 years in the "ever married" category. Differences between the proportions of women in the "ever married" and "currently married" categories at these ages have tended to narrow substantially, probably as a result of declining mortality.

For the more developed regions, the relatively abundant data at hand, although far from being complete or adequately updated, give a clear picture of great changes within recent decades. Following reactive-type recoveries of marriage rates during the early post-war years in most of Europe, Northern America and the developed countries in Oceania, the national trends characteristically went down during the 1950s, were succeeded by upturns in the 1960s, and have shown variable directions of movement thereafter. Post-1970 rates have been below those of the 1960s in a number of countries but higher in others, the disparate trends being partly related to age distribution and the latter, in turn, to variable "echo" effects of the early post-war changes in fertility.

In part, however, the recent divergent trends have been a reflection of changing nuptiality proper and not of age. There are several indications pointing to highly dynamic and possibly even revolutionary developments in the marriage patterns of industrially advanced populations. Rates of marital dissolution for non-mortality reasons, whether measured in flow terms by annual divorce rates or in stock terms by changing census values of the proportion divorced, have risen almost everywhere. Moreover, each of these sources tends to understate the facts, since the divorce-rate series ignore dissolutions of alliances between non-married partners, while the census series are net of remarriages and often fail to allow for separations. Cohort rates of divorce, perhaps the best measures of attitudinal and behavioural shifts, have risen almost everywhere in Europe where documented, sometimes at very rapid rates.

Should these recent trends continue, or should they magnify rapidly, as appears to be the trend in a number of countries, the world's long-standing predominant pattern of marriage to a single life-time partner could soon be challenged by new prototypical arrangements in the developed regions. Conceivably, the next quarter of a century could usher in nuptiality patterns which would go a long way towards replacing the centuries-old systems. What such a development, if it came to pass, might imply for fertility is difficult to envisage as yet, given its novelty. Important clues may begin to emerge soon, however, as the linkages between recent marital and childbearing movements become more fully explored. It also remains to be seen whether the recent narrowing in the variability of marriage rates will continue or become reversed. Assuming that the narrowing trend continues, still another major dimension will be added to the many thrusts towards a homogenization of vital-rate characteristics that have been observed in the developed regions during the post-war decades.

International migration

Like other vital trends over the past 25 years, international migration has been characterized by frequent breakaway tendencies when contrasted with pre-war patterns. The new tendencies developed gradually at first. During the 1950s, the main intercontinental sending region continued to be Europe, while the main receiving continents were those of Northern America and Oceania, as had been the case since the nineteenth century. Also in keeping with tradition, the destination of national emigration movements in Europe, which after 1950 had again become mainly voluntary, continued to be primarily overseas. Little is known about movements among the less developed nations, but in nearly all instances these were probably small in relation to the sending or receiving populations. Movements between the less and more developed regions must have been similarly limited except for several small countries, again, still in line with precedent.

Since about 1955–1960, however, there have been major alterations in the structure of movements across the world's national boundaries. One structural shift has been the enormous expansion in Europe of south-to-north population flows, at least until 1975, with Italy, Spain, Greece, Yugoslavia and Portugal among the main areas of origin, and France, the Federal Republic of Germany, Switzerland, Belgium and the Netherlands among the primary countries of destination. These have largely replaced the predominantly east-to-west movements within Europe, which had long been characteristic of the continent before and during the period between the First and Second World Wars.

A second shift has been the apparent end of Europe's long-standing status as a major net sender of population to other continents. Net movements between Europe and other continents appear to have fallen drastically between the 1950s and 1960s, possibly almost to zero, and may have reversed direction since about 1970 by becoming positive. A prominent factor affecting both

changeover patterns has been a large-scale redirection of net movements out of Southern Europe, which veered from past overseas areas of destination towards the recent northern areas within the continent. Whether the substantial return movements from northern to southern countries starting in 1970–1975 will continue or remain permanent remains to be seen. Much will depend, apparently, on the degree of Western Europe's recovery from the economic recession of the mid 1970s.

A third significant shift in international migration during recent decades has involved the accelerating numbers moving from the less developed to more developed regions. Among the most important of such flows have been the ones from Latin America and parts of Asia to Northern America, from Commonwealth areas in the Caribbean region, South Asia and Africa to the United Kingdom of Great Britain and Northern Ireland during the 1950s and 1960s, from Northern Africa to France and from Turkey to Western Europe. In all of these cases, political factors have played important roles. Legislation passed during the 1960s in the United States of America helps to explain the first of these flow developments, while restrictions have greatly curtailed the last three over the past decade.

Urban and rural distribution

Recent decades have witnessed major transitions in the scale and growth prospects of world urbanization. Although urban aggregates, as measured, are often statistical amalgams based upon variable geographic, administrative and demographic criteria, some major orders of magnitude seem to be indicated clearly enough. In broad terms, global urban population rose by about 3 per cent annually between 1950 and 1975. Hence it more than doubled, a greater numerical increase than any registered in the whole of previous history. Although significant long-term statistics on urban trends by region are lacking, it is obvious that in the past the current 4 per cent annual rate of increase estimated for the less developed regions could not have been long sustained, if indeed it has ever been reached before. In the more developed regions, urban growth averaged over 2 per cent for the past quarter of a century as a whole, a much lower rate than in the less developed regions but still perceptibly above the world's rate for total population. As of about 1975, a new world demographic milestone was reached when urban size in the less developed regions became equal to that of the more developed regions. As recently as 1950, the urban population of the former regions was outnumbered by that of the latter by something like a two-to-one margin. It seems safe to say that urban numbers in the world's agrarian regions of today will not be exceeded again for centuries, if ever, by urban size in the currently most industrialized areas.

Recent contrasts between rural trends in the more and less developed regions have been no less outstanding, though they have been very differently structured. Starting about mid century, the developed regions as a group began to lose rural population in absolute numbers—the result of a massive process of social evolution, which became important among a few of the earliest developing nations in the nineteenth century and has since been extended to all of today's more industrialized populations. In the less developed regions, the situation has been very different. Despite very high rates of out-migration to urban areas, rural population has continued to grow at an elevated pace, one probably in excess of 1.5 per cent annually. As a result, the ratio of rural numbers in the less developed to numbers in the more developed regions has accelerated in probably unparalleled fashion, from over three-to-one in 1950 to a six-to-one margin in 1975.

Urban growth in the developed regions appears to have been diminishing steadily in absolute terms, as a result of slowing natural increase, but the proportion of urban areas has risen substantially during 1950–1975, from about 50 to 70 per cent. In part this has been the result of a declining size in rural population. The less developed regions, in contrast, have almost doubled their urban share of total population, from 15 to nearly 30 per cent, despite high rural rates of growth. Globally, a rise from the present 40 per cent ratio of urban to total numbers to one of 50 per cent by the end of the century appears likely, while an even sharper uptrend in the numbers following urban life styles is far from improbable.

Population structure

Age and sex

The effects of regional vital trends on age and sex composition during the post-war period can be usefully traced with the help of a few analytical guidelines. As will often be suggested in chapters VI and VII, such effects may be more significant and immediate from many social and economic points of view than the impacts resulting from changing total numbers as such.

A first basic guideline is that mortality declines, at least those following the age-specific patterns encountered during recent centuries, tend to have remarkably little influence on the age distribution of either sex. This is so even when the declines are extraordinarily large. Secondly, the pattern of decline experienced to date in all regions has tended to lower the average age, not to increase it, although the amounts involved are small. Future declines in the less developed regions should continue to have the same effects on age composition and average age. In the more developed regions, however, mortality declines may well tend to raise the average age, as the scope for further reductions in "young-age" death rates becomes more limited.

A third basic guideline is that the effects of fertility variations on age, in contrast to those of mortality, tend to be cumulative, uniform in direction and closely commensurate with the scale of such variations. A low or falling total fertility rate has the effects of reducing the proportion of young people, raising the relative size of the older population and raising average age, while a high or rising total rate has opposite effects in all of

these respects. An unchanging level of total fertility tends to leave age composition unaffected, by preserving the proportions in the young, middle-range and upper-age steps of the age-scale.

A fourth guideline is that migration tends to be heavily concentrated in the young adult years. Net immigration, if recent, produces a bulge at these ages in the receiving areas. Analogously, age groups containing the survivors of past peak in-movements become relatively enlarged. Net emigration has a mirror-image "hollowing" effect.

Finally, the sex ratio (number of males per 100 females) at any age must obviously depend upon three elements: the sex ratio at birth, relative male and female rates of survival from birth to the given age, and modifications resulting from sex selectivity in net migration. Since the sex ratio at birth is so nearly constant over time and space, while net migration for most large regional groupings of population has only limited effects on age structure, the usual effective determinant of spatial or temporal variations in the sex ratios by age in such groupings is differential survivorship. The same general conclusion holds for most, though not all, smaller regional or national populations; counter-cases in point, all involving long histories of large-scale net migration, are the Caribbean area and Australia plus New Zealand, as well as Ireland, Switzerland, Israel, Canada, Algeria and Kuwait.

Many of the main interregional patterns of age and sex composition over the past 25 years follow directly from these points of orientation. For the world as a whole, since fertility on a global basis changed only fractionally, the distribution of population by broad age groups shifted relatively little. Available estimates suggest that in both 1950 and 1975 the global proportion of persons under 15 years of age was not far from 35 per cent in round terms, that for ages 15–65 was close to 60 per cent, and the one for the 65-plus population came to about 5 per cent.

The nearly constant proportions of age groups on a global scale reflected almost similarly stable proportions for the less developed regions, along with the absence of any trend in the proportion aged 15 to 65 within the more developed regions. In the former areas, the traditional and useful "40/40" rule, namely, that birth rates of about 40 per 1,000 or more are likely to be associated with a population proportion under age 15 of 40 per cent or more, continued to prevail wherever applicable. Thus, the proportion is currently very close to 40 per cent in Africa as a whole, South Asia and most parts of Latin America, where high and relatively stationary fertility has been the dominant causal factor. In contrast, the fact that East Asia occupied an intermediate position today, with some 30–35 per cent of the population under 15 years of age, reflects clearly its intermediate fertility level. In the more developed regions of Europe, Northern America and the USSR, the proportions of the population under 15 years old are all relatively low—between 20 and 25 per cent—again in accord with fertility indications. That the Caribbean area and the developed nations of Oceania, and no others, deviate from the patterns to be anticipated on grounds of fertility and mortality factors alone, can be explained in both instances by above-average rates of net migration.

The proportions of people in the over-65 age-group in the various regions, both throughout the past quarter of a century and recently, have in effect been mirror images of the under-15 patterns. The average proportion found in the more developed regions has currently been about 10 per cent, or some two to three times the norm estimated for the less developed areas. Within individual regions, this fraction today ranges downward from a high of about 12 per cent in Europe to a low of 3 per cent or so in Africa and South Asia.

Since cross-regional (and cross-national) differences in the proportion under 15 years of age tend to be far greater numerically than their associated 65-plus differences, it follows that the less developed regions all show smaller percentages aged 15 to 65. This was the case throughout the past quarter of a century, as it was for many decades, if not centuries, previously. The proportion came to very nearly 55 per cent in the less developed areas, and 65 per cent in the more developed regions, during both 1950 and 1975. As a result, the corresponding age-dependency ratios (ratio of the under-15 and over-65 population to the 15–65 age bracket) came to 80 and 55 per cent, respectively, a nearly 50 per cent differential, throughout the period. The size of this differential and its persistence have been dominant determinants of the large and continuing differentials between labour-force dependency ratios in the two sets of areas, as discussed at length in chapter VI.

For smaller age intervals, major aspects of the recent regional growth trends included the following: the marked declines that have taken place within the more developed regions of children under age 5 during the period 1965–1970 and of persons aged 5–15 during the 1970s; the very high rates of growth of the 65-plus age category in both developed and developing regions over the last quarter of a century; and the above-average rate of increase of the 15–25 group in the less developed regions during the past decade.

All of these patterns will clearly necessitate major socio-economic adjustments in the decades ahead. The declines or sharp decelerations of the under-15 population in the more developed regions have already had significant repercussions on educational needs, and analogous impacts on family formation, labour force and size of future birth cohorts are sure to emerge once this age group begins to move into the adult years. Similarly in these regions, the current and clearly foreseeable rise in the older population, both in absolute and relative terms, augurs an unavoidably massive upsurge of social preoccupation with the medical care, housing, economic security, employment opportunities and socio-psychological needs of the aged.

Rising concern with problems of the aged will also loom large in the less developed regions if, as now seems inevitable, high growth rates of their over-65 populations continue into the future. Although the micro and macro contexts of such concerns (in particular their familial and governmental contexts) will differ

greatly in many respects from those of higher-income nations, the policy issues are likely to become increasingly similar as economic development proceeds on a global scale. Simultaneously, the especially rapid growth of the 15–25 age group in the less developed regions will bring with it inevitable added problems of labour-force absorption plus new dimensions of urban-rural redistribution.

With respect to recent patterns of sex ratios, estimates suggest a global value very close to unity, with both male and female populations numbering some 2 billion. The approximate 5 per cent differential between the global sex ratio at birth and this all-age ratio reflects the fact that female survival rates tend to be higher on average than are the rates for males. In the more developed regions, this tendency has been so pronounced and consistent that sex ratios are found to decrease steadily with age in both 1950 and 1975, after allowance for war losses among males. In the less developed regions, the absence of any sustained fall of sex ratios with age before about 60 years implies fluctuating comparative levels of male and female survival rates. Only after 60 do the ratios begin an uninterrupted decline, such as would occur with steadily higher female age-specific survival rates in the upper years of life. There is no way, however, of judging the extent to which these under-60 and 60-plus patterns may be linked to uncertain estimates.

A relatively clear-cut conclusion suggested by the estimates is that the surviving members of male and female birth cohorts (starting with a ratio of about 105 males to 100 females at birth) become equalized in number at a considerably earlier age, approximately 35 years, in the more developed regions, than in the less developed areas, where this age is about 60 years. Such a difference would be consistent with the fact that survival-rate differentials favouring females have historically been reported as higher in European-type populations than has been true of most parts of Africa, Asia or Latin America.

The rapidly changing role of women during the post-war decades, with respect to labour force, education, legal status and role within the family, among others, is sure to have major cause-and-effect interrelations with childbearing and nuptiality patterns in the decades ahead. As yet too new to be clearly specified, such interrelations will pose novel challenges to social and demographic research, along with a host of major emerging issues for policy. A second set of interrelations, centred on the rapidly declining numbers of males per 100 females in the upper ages of life, is likely to command similar analytic and policy attention, as problems of human resources from both productive and welfare viewpoints come increasingly to the fore.

Labour force

The world's economically active population rose from 1 billion to 1.5 billion or more between 1950 and 1975 according to estimates by the International Labour Organisation. Its lower rate of increase compared with the 60 per cent growth of total population implies a 5–10 per cent decline in the aggregate (all-age) rate of global labour-force participation, a trend almost wholly attributable to declining participation rates among younger and older males. Age composition, though potentially capable of causing a shift in the aggregate rate, was comparatively unimportant. As noted, it changed relatively little in the less developed regions, and its main shifts in the more developed regions were compensating ones at under 15 and over 65 years, ages which have little significance for participation probabilities. Conceivably, changes in age composition between 15 and 65 could have been important in some individual countries, but such effects are bound to be secondary from a global viewpoint.

Labour force in the less developed regions as of 1975 became equal to total labour force of the world in 1950. Each of four large groupings of less developed areas—Latin America, Africa, East Asia and South Asia—had higher rates of growth of the economically active population than did any of Northern America, the USSR or Europe, while only the developed part of Oceania, because of high rates of immigration, deviated from this comparative pattern. On average, the number of economically active persons in the world's low-income regions rose at almost double the quarter-century rate encountered in the higher-income regions. The net effect of these disparities has been to raise the proportion of the world's labour force in the former areas from about 64 to 68 per cent, while lowering the share in the latter areas commensurately. Barring unexpected future trends in participation rates in either group of regions, this tendency should continue and gain strength in the decades to come, implying enormous impacts of demographic variations over space and time on regional productive organization and performance.

In demographic structure no less than in regional composition, the world's labour force has shown marked recent transformation. The global number of economically active females rose at a rate about 50 per cent higher than the male rate between 1950 and 1975, constituting about 35 per cent of the total labour force at the end of this period as compared to 30 per cent or so at the beginning. With respect to age composition, the proportion of the labour force in the 25–55 age interval rose substantially, mainly because of rising numbers of females, while the proportions of young workers and older workers declined perceptibly. The downward trend for young workers seems nearly certain to continue and may accelerate, given the spread of education and the rapidly changing role of women in many of the world's economies. The upper-age tendency may have a more uncertain future, not only for substantive reasons, but also if statistical procedures were to change in distinguishing between the economically active and inactive parts of the older female population in agriculture and commerce. With respect to participation rates by sex and age, over-all female participation rates rose in both more developed and less developed regions, male rates in all broad age-groups fell and the over-all rate for combined sexes also fell, the last in response to these component sex-age-specific patterns.

A labour-force shift of major significance from development viewpoints has been the rapidly changing mix of agricultural and non-agricultural workers. In the more developed regions, the agricultural labour force declined drastically, by about 50 per cent in absolute numbers, to where it had become only about one third of its 1950 relative size by 1975. In the less developed regions, the situation has been more complex. The agricultural labour force rose by about one fourth, implying a probably unparalleled annual amount of increase in absolute numbers despite enormous volumes of out-movements from rural to urban areas. At the same time, partly because of these same movements and partly because of rapid urban growth from natural increase, the agricultural labour force as a proportion of the total fell by as much as one sixth.

Labour force dependency

The number of dependants in the world, defined as the population not engaged in labour-force activity ("not economically active"), rose by about 65 per cent, from almost 1.5 billion to somewhat under 2.5 billion. The increase can be linked directly, indeed arithmetically so, to the rise in total population and the decline in labour-force participation.

Expressed in relative terms, the size of the economically inactive population compared with active population was close to 1.4 at both the beginning and end of the 1950–1975 period, an intervening small decline of the ratio having been wholly the result of declining participation rates. The main changes in dependency on a global scale, therefore, have been its increase in absolute terms and its shifting composition by sex. In 1950, females constituted about 65 per cent of the world's dependents. By 1975, the proportion had dropped to 60 per cent as a result of rising female labour-force participation. The fraction of the economically non-active who were under age 15 remained unchanged at about 60 per cent for combined sexes, rose for young adult and upper-age males as a result of declining participation rates, and declined among females in the central labour-force ages in response to rising participation.

As could be expected from the very large differences in age structure between less developed and more developed regions, the former have had a consistently higher labour-dependency ratio than have the latter. The 1950 difference between ratios was 15 per cent and the discrepancy has become larger over the years. Approximately, the ratios come to 1,500 dependants per 1,000 active persons in the less developed areas at present, following a substantial rise, and 1,200 in the more developed regions, where there has been very little change.

Some main interrelations with development

In addition to urbanization and labour force, two clusters of linkages that connect demographic trends to socio-economic change in especially direct and important ways are education and food. Both are discussed in chapter VII.

Education

The contrasting socio-economic consequences of rapid population growth plus high fertility in the less developed areas, on the one hand, and of much lower growth and fertility in the more developed nations, on the other, can be documented in especially stark manner by post-war trends in education. Despite enormous increases in the enrolment levels of primary and secondary schools in Africa, Asia and Latin America between about 1950 and 1970, the combined size of their school-age population has risen still more rapidly. As a result, the numbers out of school among both the 6-11 and 12-17 age groups in these regions have risen rather than fallen. Simultaneously, drop-out rates have remained elevated and pupil-teacher ratios have continued to be excessive, the latter in the face of greatly expanded commitments of resources and personnel. Enrolment rates remain so low, and fertility so high, that increases in the one or decreases in the other could lead to enrolment differences involving several hundreds of millions of pupils by the year 2000. In diametrical contrast, the more developed regions have had enrolment proportions that began at a high level in 1950 and ended at levels approaching saturation in 1975. Neither rising completeness of enrolment nor anticipated variations in fertility could be expected to cause appreciable increases in student loads for decades to come.

So far as can be seen from studies available at present, it has not been possible to establish any conclusive relationships between specific amounts of schooling and the educational threshold beyond which fertility begins to decline. A similar inconclusiveness holds with respect to special educational programmes focusing on family planning and their effects on childbearing behaviour, as well as with respect to general education and internal migration. These summary descriptions describe the findings to date as interpreted by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

Food

Although enormous global and regional increases in both food supply and food distribution capabilities were registered during the period 1950–1975, consumption *per capita* in large parts of the world continues to be far below standards of adequacy in normal periods and vulnerable to sharp short-run setbacks in abnormal ones. In recent years especially, it has been found to be subject to calamitous downturns.

Population size, density and growth have clearly been major elements in the profound regional and national mis-matches that continue to prevail between numbers and nutritional supplies over most of the globe. Although food output in both the developed and the developing regions rose at an average annual rate of 3-plus per cent between the early 1950s and 1960s, an extraordinary decadal pace by historical standards, output growth *per capita* was more than twice as large in the former areas as in the latter. Specifically, the rates came to somewhat under 2.0 per cent and under 1.0 per

cent, respectively. Even in Africa, where the output rise of 2-plus per cent was well below the 3 per cent or higher rates found in large parts of the less developed regions, including Latin America, the Near East, the Asian centrally planned economies and the developing market economies of the Far East,[2] productive performance was far from shallow in relation to earlier long-run trends in many of today's developed areas. Nevertheless, the growth of that continent's population—at 2 per cent a rate no longer high by many contemporary standards—was such as to eliminate all *per capita* gain during the 1950s.

Between the early 1960s and 1970s, the corresponding contrasts between the more developed and less developed regions became even more pronounced. Output in both groups of regions again grew at approximately equal rates, roughly midway between 2.5 and 3 per cent on an average annual basis. Yet *per capita* output growth in the high-income areas remained almost unchanged, at between 1.5 and 2.0 per cent, while in the low-income regions the rate plummeted to well below 0.5 per cent. As can be directly inferred from these measures, the reason was that the population growth rates in the two groups of regions were roughly in a ratio of 2.5 to 1.

The post-war contrasts in these same respects reached a peak during the first half of the 1970s, when growth of food maintained its pace of the previous decade in the more developed regions but slackened markedly, to well below 2 per cent, among the less developed areas. As a result, the output growth rate on a *per capita* basis continued unabated in the former areas, while a substantial decline, at an average annual rate approximating 0.5 per cent, occurred in the latter. Only parts of Asia avoided decreases, as Africa, Latin America and the Far East all experienced sharp setbacks. For the longer period between the early 1960s and mid 1970s, there was little or no change in *per capita* output in each of the last three areas, where many individual countries experienced a more rapid growth of numbers than of food. Such declines often occurred in areas with especially low levels of nutritional intake, hence with especially high vulnerability to the threat of famine.

With income and population both taken into account, only about a fourth of the less developed countries of the world experienced food production trends between the early 1960s and mid 1970s that were adequate to accommodate rising effective demands. Should the income increases projected for developing regions according to existing development plans actually take place, and should their current high population growth rates continue, effective demand (to be distinguished from needs) for food would tend to rise at a 3–4 per cent pace annually. This is beyond the orders of magnitude of actual output increases encountered over the past quarter of a century and even further beyond pre-1950 increases.

According to studies conducted by FAO, population growth in all parts of the world is expected to remain a more dominant determinant of effective demand for food than is income, especially in areas where food is in short supply. Since population growth appears to account for about 70 per cent of the expected rise in such demand in the developing regions and 60 per cent in the developed economies, its causal influence, at least in statistical terms, appears to exceed that attributable to income plus all other factors combined.

The food-supply setbacks of the earlier part of this decade have been superimposed on severe long-run or chronic problems. With respect to the latter, estimates as of about 1970 suggest that energy (calorie) intake *per capita* during recent decades has tended to be 5–10 per cent short of nutritional requirements in Africa and in much or most of Asia. Possibly only Latin America among the less developed regions has had intake levels in excess of requirements. In addition, the quality of food consumption—for example, amounts of protein and vitamin intake—has traditionally been much further below standards than quantity-type or energy indicators.

Each of the more developed regions, in patent contrast, has had average food energy consumption levels well above requirements during much or most of the quarter-century period since 1950. In addition, Western Europe, Northern America, Australia plus New Zealand, Eastern Europe and the USSR, plus the other developed market economies combined, all report consistently larger intakes *per capita* of proteins than the average corresponding intake for any developing region. These differentials increased during the 1960s as the excess of such intake among the world's more developed areas rose from nearly 50 per cent to nearly 70 per cent.

Whatever the indicators, however, regional or even national comparisons do not do full justice to the welfare dimensions of the world's food situation. Estimates based on 1970 conditions suggest that close to half a billion persons globally (excluding the Asian centrally planned economies) suffer from severe protein-energy malnutrition. Of these, about 95 per cent are inhabitants of the developing market economies, where they represent some 15 per cent of the population. The remaining 5 per cent are situated in the developed regions, where they constitute some 2–3 per cent of the total. Perhaps as many as half of the young children in the developing market economies are inadequately nourished on a chronic basis. Severe malnutrition must surely have become more widespread in many of these economies during much of the 1970–1975 period.

Looking ahead, accommodation of the world's food needs will have to contend with a number of significant recent developments affecting supply potentials. One such, a key adverse turn of events, has involved sharp increases in fuel costs, which have imposed major constraints on world capacities for expanding production and trade of fertilizer. A second limitation, less sudden, has been the progressive diminution of idle lands available for cultivation. Almost certainly, the less developed areas cannot hope to achieve in the near future increases in cultivated areas that would compare with the increases

[2] These regional groupings are the ones employed by the Food and Agriculture Organization of the United Nations (FAO) in dealing with less developed countries; they are not far from the major-area groupings used by the Population Division of the United Nations Secretariat (see footnote 1).

in the post-war period until now. Barring enormous and as yet unforeseen breakthroughs in land utilization technology, such as the achievement of effective control over tropical climates, much larger parts of future gains in food output within the less developed regions will have to come from rising acreage yields than has been true in the past. Important, too, in this connexion has been the conversion of previously idled cropland to cultivation in the United States of America during the early 1970s; future "windfalls" of this type and magnitude can no longer be expected. A favourable development since about 1975, the recovery of grain reserves in a number of the world's largest producing areas, can help to offset these limitations, but only partially.

Chronic balance-of-payments difficulties in the non-oil-rich less developed regions—an outcome of chronically low productive and export capacities, large needs for capital imports and escalating debt service charges—have been compounded by the precipitous upsurge of needed food imports in recent years. Indicative in this connexion is the fact that imports of cereals by the less developed countries as a group rose during each year between 1970 and 1975; such imports were no less than two thirds higher towards the end of this period than at the start.

The growing importance of international trade as a potential way of offsetting a rapid population increase and food production inadequacies in the less developed areas merits emphasis. Asia, Africa and Latin America were all grain-exporting areas before the Second World War and all had become food-deficit regions as of the mid 1970s. Projections to 1985 by FAO suggest that output gains could be one third less than increases in demand in the less developed regions and not far from twice the growth in demand within the more developed regions. Although production for the world as a whole is projected to run somewhat ahead of demand, these regional discrepancies have the obvious corollary of a greatly rising need for trade if demands are to be met. In turn, much of the world's regional supply-demand discrepancies to be anticipated stem from contrasting rates of population growth, as documented throughout the post-war era until now.

The fact that food supply has more than kept pace with population in many areas despite rapid growth in numbers, while falling short in many others despite substantial gains in output, makes it clear that the world's food problems have both non-demographic and demographic aspects, which are a key to possible solutions. In the less developed regions as a whole and in most countries within those regions, no conceivably reasonable deceleration of population growth could lead to an adequate solution to the problem of food deficiencies in the coming decade unless production moved ahead at a high rate. And conversely, in the more developed regions, no output trends that can reasonably be anticipated are likely to raise severe problems of under-supply, so long as low growth in population continues.

A main uncertainty today surrounding global food and population interrelations is whether *per capita* output gains in the less developed regions can be resumed on a sustained basis, even if a limited one. Whether the declines of the early 1970s were an early-warning signal of long-run deterioration on the world food front, or will be convincingly overcome in future, is a many-sided question with ever evolving aspects. One such is the possibility, still highly controversial, that long-run climatic conditions may be taking a drastic turn for the worse. Although, in the absence of scientifically confirmed evidence, the likelihood of such a turn cannot be judged, even a small risk in this regard could be ominous.

Nevertheless, it is likely that the food problems that will continue to command major attention by Governments will be long-standing ones. Such attention should simultaneously emphasize production and population, but surely not the latter alone or even primarily. It is true that population pressures in many less developed countries are major hindrances to productivity gains in their agrarian sectors. But it is also true that the problem of achieving a better balance between regional food needs and supplies is very largely one of production. Although reduced population growth in the less developed areas could facilitate, and add to, the gains made possible through improved agrarian technology, it cannot be a substitute for such gains. New land-use patterns, improved seed varieties, more favourable credit and marketing conditions, greatly enlarged irrigation facilities, intensified agricultural investment, agrarian reform and the expanded cultivation of non-conventional food-stuffs, among others, are non-demographic factors whose productive potentials are both enormous and far from being realized. The very recent substantial recovery of world food output and reserve levels, following stunning setbacks only a few years earlier, adds support to this assessment. It also adds weight to a curious combination of corollaries: that public and even expert opinion has often overreacted to short-term fluctuations on the world's food front, mistaking these for the onset of inevitable long-run developments, on the one hand, but also that most of the world's population remains vulnerable to major setbacks within a context of chronic want, on the other.

Policies

Increasing attention by Governments to questions of population policy has become a prominent feature of the international demographic landscape in recent decades. About half of the world's Governments, ruling over much more than half of the world's inhabitants, regard demographic change as a factor significantly affecting development in favourable or unfavourable ways. Such nations appear increasingly willing to take explicit direct or indirect steps to orient growth rates, or components of change, in preferred directions. Conversely, less than 20 per cent of all Governments, involving much less than a fifth of the world's population, believe that natural increase is so inconsequential in its unfavourable impact on development as to require no policy intervention on their part. The reasons for the spread of policy interest in population undoubtedly involve a combination of factors, both non-demographic

and demographic. Among the former, world-wide expansion of national planning for growth, stabilization and human resource objectives has certainly been an especially significant influence. Among the latter, the pace and nature of post-war population trends, increasing and more timely information about the facts of such trends, and growing insights into their causes and implications, all stand out. For both sets of reasons, political preoccupation with national and international population movements seems certain to continue and expand.

To some extent, of course, the current policy preoccupations are extensions of old concerns. Attempts to limit mortality or to control international migration, for example, go back to the beginnings of history. On the other hand, it is clear that something new has been added. As part two of this publication amply attests, new substantive areas of policy attention, in particular Government concerns with fertility and with the socio-economic implications of population change for development policy, make the current and prospective situations stand apart from earlier periods.

Nevertheless, any interpretation of either situation, even the current one, is beset by conceptual difficulties of a substantial order. How national objectives are affected by population patterns, how such influences are perceived by Governments, the resulting content of population issues when formulated politically, and possible options for dealing with the issues so defined—each of these is a multi-branched subject area and each requires ramified analysis. In particular, political recognition of a population problem, and policy attempts to meet it, may be linked in multiple rather than unique ways, and even in inconsistent rather than consistent fashion. The facts in any or all of these respects may vary widely from period to period in a given area and from place to place cross-sectionally.

Examples of these points abound. A rate of population change that is considered to be too high can be associated with a priority goal to reduce mortality, a policy that would tend to raise the rate further, in the short run at least. A rate of growth deemed too low (or high) can in principle be raised through innumerable combinations of mortality shifts, fertility changes and migration-oriented policies, rather than by a single approach only. "Second best" rates may be the ones targeted in practice, though they are non-optimal in theory, given the lack of feasible methods for achieving anything better. Or still again, a rate may be regarded as better modified through a broad approach, such as one stressing development policies of a non-demographic nature, than by a programme demographically oriented only.

Population policy analysis is a new field of research, for which tested methodological traditions have yet to be established. The attempts in part two of this publication to codify Government perceptions of their demographic situations, to describe national population policies, to interrelate the two, and, moreover, to do so on an essentially world-wide scale, should therefore be viewed as a preliminary effort in a still novel subject area.

As noted earlier, the source materials assembled in part two are in large part an outgrowth of the 1974 World Population Plan of Action, which recommended that Governments should consider how population processes were interrelated with socio-economic change in their countries and how such interrelations might be modified when appropriate action appeared needed.

A profile of current main patterns

Despite obscurities in the data base, a reasonably clear profile emerges of contemporary population policy-making on an international scale. Demographic trends are considered by Governments to have significant effects on national interests as a rule, tend to be widely regarded as development issues, and are almost everywhere judged from standpoints of broader socio-economic objectives in deciding on policy. As a result, policy attention to unfavourable socio-economic consequences of population change is believed to require a broader approach than direct or exclusive reliance on mortality, fertility or migration measures proper. Rather, such attention is likely to involve a mix of measures, partly demographic and partly non-demographic, with the non-demographic part often the larger of the two.

In a sense, since all Governments have a health policy and this is related to mortality, all countries have some form of "national population policy". But it is also true that the large majority of countries, 132 out of the 156 surveyed in the present report considered in 1976 that their rates of natural increase (or growth) placed constraints (large or small) on development; generally, the constraints involved go far beyond health, however broadly defined. Moreover, very nearly all of the 132 countries can be classified as undertaking programmes of policy intervention that are multidimensional in content. As reported, policies are said to rely on various combinations of measures affecting mortality, fertility, spatial distribution, international migration, social arrangements, economic trends, political organization or technological usages. Such multiplicities reflect the multiple objectives usually involved, not only demographic plus non-demographic but also joint components-of-change targets among the former.

The demographic pattern most often singled out as a source of serious dissatisfaction is spatial distribution. With notable frequency, this is cited by Governments as playing an important role in policy attempts to cope with problems of natural increase (or growth), though distribution is inherently subnational in nature and the growth patterns involved are national. The reason may be that national growth is understood to have markedly differential impacts by region or urban-rural sectors.

Policy-related attitudes to natural increase tend to be ambivalent for various reasons, in particular because of the multiple nature of the impact such an increase is perceived to have. The growth of national numbers is almost always believed to have one or more favourable effects, especially that of supporting the "national identity", even when the unfavourable effects are deemed substantial, serious or dominant. Nevertheless, the am-

bivalence is not overriding; the degree of correlation found to hold between attitudes towards a rate of growth and its actual size is not small. Among the 42 more developed nations surveyed, only one regarded its rate of natural increase as too high and all of the others deemed it satisfactory or too low. Among the 114 less developed nations, the situation was more variable but still clearly contrasting. Here, about two fifths of the Governments regarded their rates as too high, an almost equal proportion were not dissatisfied and about one fifth deemed their rates too low.

Reported differences between the two groups of regions with respect to views of mortality and fertility are again in line with factual variations. In the more developed regions, mortality levels are generally acceptable, while fertility is considered too low as a rule. In the less developed regions, the modal attitudes are substantially reversed; mortality is seriously unacceptable because it is too high, while fertility is judged to be too high by almost half the Governments and too low by less than 10 per cent.

More specifically, of the less developed countries reporting "substantial" or "severe" problems associated with demographic trends, 95 mentioned problems of spatial distribution; 69 cited problems related to natural increase and associated fertility rates (48 countries expressing concern about high rates and 21 about rates that were too low); 79 mentioned mortality and morbidity, as well as health aspects of fertility; 59 referred to other aspects of fertility, such as spacing and size of the family; and 68 were concerned by international migration. Of the 42 countries surveyed in the developed regions, 20 referred to spatial distribution; 17 to natural increase and associated fertility rates (one was concerned by rates that were too high and 16 by rates that were too low); no country mentioned the mortality and morbidity aspects of fertility; 20 were concerned by other aspects of fertility; and 26 by international migration. Globally, the Governments that were substantially concerned by the effects of emigration outnumbered those concerned by immigration problems by a ratio of 4 to 3.

Policy perceptions by Governments can be said to identify three separable levels at which population has an influence: the level at which the individual is affected; that at which the impact is on national—including subnational—interests; and the level at which the influence is extra-national. At all three levels, but particularly the last, population developments become interrelated with questions of the current or prospective international economic order: how it operates at present or should be encouraged to evolve in the future.

Follow-up programmes concerned with fertility and spatial distribution may be precluded because it is feared that they will not prove feasible, or on other grounds; conversely, policy intervention where the current situation is satisfactory may be deemed necessary in order to avoid departures from the *status quo*. In contrast, such tendencies have not been manifested with respect to morbidity, mortality or international migration, for which the perception of a problem was invariably linked to interventions seeking remedial results. In short, an awareness of the favourable or unfavourable state of an actual situation as perceived by a Government may be an imperfect guide in predicting the policy that will be followed. The approach may, in fact, depend on the subject area involved, which could be a decisive factor.

About half of the world's Governments consider their fertility rates to be relatively satisfactory and about half find them unsatisfactory. Almost all the dissatisfied Governments from the developed regions would prefer higher fertility, while the great majority of dissatisfied in the less developed regions—about 90 per cent—would prefer lower fertility. Globally, the Governments that provide access to modern methods of contraception—over two thirds of the total—indicate a mix of fertility-level preferences. These may be for higher, lower or existing rates in relation to actual behaviour patterns.

Since the 1976 Third Inquiry among Governments on Population and Development could be compared reasonably well with 1974 data compiled from the Second Inquiry, held in 1974, and from related source materials, several tendencies towards changes in policy orientations can be indicated, if sketchily. In the case of the more developed countries, there has been increasing concern with the decline of growth and fertility rates to low or very low levels. In the less developed regions, the net trend has been in an almost opposite direction; here, it is high growth and fertility that are becoming mounting sources of concern.

From the procedural as well as the substantive points of view, the less developed and more developed regions differ substantially in approaches to policy. Nearly all less developed countries rely on a central planning agency for policy formulation, and most do so for policy implementation as well. Except when dealing with highly specialized or non-traditional functions, relatively few such nations place programme or policy responsibilities in the hands of a separate agency. In contrast, countries of the developed regions rely much less on planning agencies, in part because these are less frequently present within the governmental structure.

Policy perceptions

Of the 156 countries that are Members of the United Nations or members of the specialized agencies, 37 countries considered in 1976 that a "higher rate of natural increase is desirable", 70 thought their rate was "satisfactory" and 49 believed that a "lower rate is desirable". More indicative than these global aggregates is the manner in which they are distributed by stage of demographic development. In the developed regions, only one country considered a "lower rate desirable", 25 were in the "satisfactory" category and 16 thought a "higher rate desirable". In the less developed regions, 48 desired lower rates, 45 were satisfied and 21 desired a higher rate.

In the corresponding distributions by population there was a much sharper contrast between regions. In the more developed areas, fully 85 per cent of the popu-

lations belonged to countries having a "favourable" over-all Government perception of growth levels and trends, compared with a 60 per cent proportion of countries. In the less developed regions, the corresponding proportion of populations was 16 per cent, compared with about 40 per cent of countries. Hence, where only about 15 per cent of the more developed populations of the world were ruled by Governments not satisfied with their growth situation, almost the same low percentage described the proportion satisfied in less developed regions. Globally, 13 per cent of the world's inhabitants live in countries whose Governments consider a higher rate to be "desirable", 29 per cent in countries that feel "satisfied", and 58 per cent in countries that believe a "lower rate is desirable".

It follows that, as a rule, the foregoing "favourable-unfavourable" distinction between types of regions was parallelled by a like dichotomy between larger and smaller national populations: Governments in the more developed countries with a relatively large population seem to be satisfied with their current patterns of growth, while Governments ruling the larger populations in the less developed parts of the world have been dissatisfied. It should be noted, however, that these proportions could be greatly affected by the classification tabulated for a very few nations.

Average mortality levels were acceptable in 32 of the more developed countries and unacceptable in the remaining 10; among the less developed nations the levels were acceptable in 27 countries and unacceptable in 87. Not surprisingly, the extent of acceptability was found to vary with expectation of life at birth. Of the 54 countries with an expectation below 50 years, only one considered its situation acceptable. Many of these same areas, in every case less developed, also considered their growth rates to be excessive. On the other hand, of the 37 countries with an expectation of life of 70 years and over, 31 considered their level acceptable and also preferred a higher rate of population increase. These juxtapositions of longevity and growth goals make it evident that the motives underlying population policies may well be mixed and multiple.

With respect to age-specific or other disaggregated death rates, the increases encountered among males in a number of more developed countries are reported to have occasioned rising concern on the part of their Governments during the mid 1970s. In less developed nations, infant and rural mortality conditions have been singled out for special attention.

Fertility in the post-war decades has become a major focus of policy consideration for both microfamilial and macrodemographic reasons, its effects on the status of women and rates of growth being obvious examples of these twin elements. Little more than half of the 156 nations surveyed consider their fertility levels to be relatively satisfactory, and nearly half consider them to be unsatisfactory. Among the more developed countries expressing dissatisfaction, practically all regarded their fertility as being too low; of the dissatisfied countries, those that judged fertility to be too high outnumbered those that considered it too low by a margin of nearly eight to one. More specifically, 18 countries (including 11 in the developed regions) regarded their fertility rates as "too low", 83 (including 30 developed) as "satisfactory", and 55 (of which one was developed) as "too high". Among the 83 countries with "satisfactory" fertility rates, therefore, there were wide variations in demographic conditions. There were 82 countries with an avowed policy of intervention in fertility of which 14 (10 developed) had policies designed to increase fertility, 22 (10 developed) were trying to maintain their present rate, and 40 (all less developed) wished to reduce their rate.

The question of providing access to modern methods of contraception has been of particular national and international policy interest in recent years. Of the 156 countries surveyed, 98 had formulated and implemented policies designed to provide unlimited access through public health or social welfare facilities, while another 16 provided access through local authorities and private organizations, a total of 114 in all. Less than half of these were seeking higher rates of population growth.

Of interest from the point of view of the internal consistency of the responses as edited is the fact that the percentage of Governments tabulated as desiring neither higher nor lower rates of natural increase was close to the proportion that considered their rates of increase to have neither major positive nor major negative effects on developmental goals. Among the remaining nations, or those identified as considering the effects to be more than minor, the number finding the effects so substantial as to justify direct measures to influence vital rates was over three times higher than the number preferring indirect measures to attain this end.

Half the countries, or 78 out of 156, regarded their geographical distribution of population and internal migration patterns as "largely unacceptable"; of these, 71 were from the less developed group. Another 59 countries regarded their situation in these respects as "unacceptable to some degree" and only 19 considered their situation "acceptable". A large majority, some 100 countries, would prefer to slow down the flow of internal migration, and four fifths of this group would also like to see the structure of their urban and rural settlement patterns wholly or partially changed. The 85 per cent of the countries that regarded their spatial distribution as "in some degree unacceptable" included about three fourths of the more developed nations and nearly all of the less developed ones.

Only 39 nations throughout the world considered immigration to be demographically significant. Of these, eight (including two in developed regions) regarded the rate of immigration as "too low", while 24 (13 developed) deemed it "satisfactory", and seven (three developed) termed it "too high". Of the same 39 countries, eight (two of them developed) had policies designed to increase their rate of immigration; 17 (six developed) sought to maintain their rates at current levels; and 14 (10 developed) had policies aimed at curbing rates.

More Governments were concerned with emigration than with immigration (52 as against 39). Only four countries (one developed) found their emigration rate

to be "too low"; 28 (one developed) deemed it "satisfactory"; and 20 (seven developed) regarded it as "too high". Among these same 52 countries, nine developed and 43 developing countries had emigration policies, with seven and 13, respectively, wishing to curb emigration. A large number of other countries (one developed plus 27 developing) preferred to keep the emigration rate unchanged while four wished to raise it.

Among the 15 classes of objectives that the Third Inquiry listed as possibly affected by population were the quality of the environment; the use of natural resources; the supply and utilization of manpower; desired income or related types of distribution; savings and investment targets; adequacy of size of domestic market; the appropriate provision of social services to the young, adults and aged; "innovative dynamism"; population replacement aims; and the desire to give support to "national and cultural identity". The last of these, as interpreted, would presumably include preservation of the State. The same 15 categories were used in examining sources outside the Inquiry when response from the Inquiry itself was lacking.

While two thirds of the less developed countries considered that population growth had a favourable influence on national identity, only about half thought it stimulated economic growth, and only one fourth believed that it fostered the provision of social services. The more developed countries were less variable in their assessments; over 60 per cent cited favourable demographic effects on national identity and slightly under 50 per cent thought the effects on social services were favourable.

With respect to net or over-all Government positions, half of the Governments in the less developed regions (representing nearly three fifths of their total population) considered negative influences to be predominant; only one fifth (of the population as well as of Governments) deemed favourable influences to be predominant. Among the more developed nations, fully half of the Governments (representing two thirds of the total population) regarded the favourable effects of natural increase on national goals as being a predominant factor, while only one fifth (one tenth of the population) considered the negative effects to have such importance.

Of the specific reasons given by Governments for regarding their population trends favourably or unfavourably, the item most frequently singled out as favourable among the 15 evaluative categories enumerated in the Third Inquiry was "national identity". This finding, encountered among both developed and developing regions, is no doubt closely related to the more or less universally held view that population is a key source of national survival and continuity. Among the more developed nations, some 50–60 per cent reported that growth (or size) of population was large enough to assure sufficient manpower, a satisfactory stimulus to economic growth or an adequate size of domestic markets. An essentially complementary fraction of the countries in this group, about 50 per cent, believed that growth or size was small enough to foster quality of environment and the provision of social services. Contrarily, the effects most frequently cited as being unfavourable involved inadequate supply of manpower and insufficient support for national identity. For less developed nations, the percentages reporting favourable effects from high rates (or large size) ranged from about 45 to 65 per cent, depending on the type of effect, while the advantages derived from low rates were reported about 25 per cent of the time. The unfavourable effects of population growth most frequently mentioned were high rates of unemployment and inadequacy of social services.

Although there are marked differences between the less developed and more developed regions, taken as a whole, in the interplay between their perceptions and actual circumstances, this is not always the case for individual countries within the regions. It is true that no country with an actual growth rate below 1 per cent (all such countries had more developed populations) reported itself as desiring a lower rate. But even in this group, fewer countries with a recent (1970–1975) growth rate below 0.5 per cent were found to desire a higher rate than when the rate was between 0.5 and 1.0 per cent. The situation was no less fluid among countries with relatively high actual rates (most of which were less developed). Countries with a 2 per cent or higher level of recent growth rates were much less likely to desire a higher rate than those with a rate below 2 per cent, yet those with a 3-plus per cent rate were as likely to prefer a higher rate as those having a 2–3 per cent rate of growth. Obviously, factors other than actual trends can affect or even dominate Government perceptions of desirable growth rate; such factors include the degree of development, level of mortality, agricultural density and population size, among others.

In short, less developed countries are just as likely as the more developed countries to perceive favourable individual (but not net) effects from "high" rates, despite their sharply distinctive perceptions on a net or over-all basis. And conversely, the clear tendency of less developed nations to regard their growth rates as too high in terms of net advantages is not associated with a view that low rates would be advantageous from all social or economic viewpoints.

Comparison of the mid 1976 Third Inquiry with data from the 1974 Second Inquiry provides the best detailed indication so far available of recent changes in policy orientations. For both periods, supplementary source materials had to be employed to round out the responses received.

The evidence suggests some limited but not insignificant propensities to change. In Europe, the most prominent shifts have involved Czechoslovakia, Hungary and Romania, all of which moved from the 1974 perception that intervention to raise the rate of natural increase was desirable to a 1976 position that current growth was satisfactory. In each of these instances, the shift appears to have been associated with a rise in the actual growth rate. Possibly because of the absence of a desired actual trend, other developed areas showing a shift have moved towards a preference for a higher rate. Both Finland and

the Federal Republic of Germany have come round to this view, in each case seeking to achieve their goals by means of indirect measures. Switzerland, which had previously cited no unfavourable consequences from its growth rate, has more recently adopted the view that such consequences do in fact exist, though not to a significant degree. Similarly, about half a dozen other countries appear to have strengthened their preference for a higher rate over the two-year period. An exception has been New Zealand, the only more developed country currently desirous of achieving a lower rate of growth, which made the opposite kind of transition from its previous perceptions. In Portugal, where a 1974 political régime had considered higher rates to be desirable, its successor has reported the growth rate to be satisfactory.

The changing policy perceptions of the less developed nations are only occasionally in accord with the tendencies to change manifested in the developed regions. In Latin America, Chile was reported as being satisfied with its growth rate in 1976, after seeking a lower rate in 1974, while Uruguay moved from a position favouring more rapid growth through indirect measures to one favouring direct intervention for this purpose. In Asia, the Lao People's Democratic Republic has come to prefer a higher growth rate. Finally, Singapore, Cape Verde and Benin have shifted from a desire for a lower rate in 1974 to satisfaction with their 1976 rate. However, with about three exceptions at most, no country in any less developed region has been reported as shifting towards a preference for higher growth rates. Rather, the predominant pattern of change, where one has occurred, has been in the direction of preferring a lower rate, almost always starting from the 1974 view that the rate at that time was "satisfactory". Some of these nations have become willing to use intervention to achieve lower rates, as in Lesotho, Papua New Guinea, the Seychelles and Uganda, while others have come to favour the use of indirect rather than direct measures for achieving this goal. Ecuador, Liberia, Madagascar, Nicaragua, Senegal and Sierra Leone all illustrate the latter tendency.

In practically all other instances, involving a large majority of the countries surveyed, views regarding the desirability of growth rates appear to have remained the same. Countries that favoured lower or higher rates of increase in 1974 tended to do so again in 1976. Similarly, those that perceived their actual growth rates to be sufficiently satisfactory or insufficiently harmful to warrant change showed invariant assessments as a rule.

To sum up, such recent shifts in policy as have occurred in the less developed regions have added to their tendency to favour lower growth rates. An opposite trend, favouring higher rates, has tended to prevail in the more developed areas, though again only occasionally. It follows that the increasing disparity between actual growth rates in the two groups of regions in recent decades has been associated with policy preferences by Governments which would, if successfully implemented, reduce such disparities. This reaction pattern could become a major factor affecting future growth-rate propensities.

Policy actions

Policy perceptions with respect to population growth may be directly, indirectly or little related to actions taken by Governments. Medical or health programmes, regulations affecting immigration, and policies that affect fertility, for example, may be aimed as much at non-demographic objectives as at raising or lowering the size of the population. Most Governments report that they prefer to rely on a combination of non-demographic and demographic adjustments in coping with dysfunctional effects of population growth, while an even larger majority believes that excessive or deficient growth requires modifications of natural increase and population distribution in combination, rather than of the former alone. A Government desiring to alter its growth rate by direct intervention may report itself as using much the same array of growth-affecting policies as does one espousing indirect measures, or even much the same as one that believes its growth rate requires no modification at all.

In the present study, it has been assumed that Governments that cite no perceived deterrents to development from their demographic growth patterns also have no policies designed to alter such patterns. There were two dozen such nations, equally divided among the less and more developed regions, where they comprised about 10 per cent and 30 per cent, respectively, of the total numbers of countries. This left 102 less developed countries plus 30 more developed ones as the universe of nations whose policies affecting population growth were defined statistically as having development-enhancing objectives.

Among the 132 nations so identified, the countries that appeared to attach most importance to non-demographic approaches to problems of population growth were as numerous as those that relied chiefly on demographic approaches. The large majority, some 70 per cent, were tabulated as seeking a mix of both approaches. This was so whether growth was believed to be excessive or deficient, and again whether direct or indirect measures of intervention were deemed most appropriate. Only when growth was deemed to be excessive but of minor significance did a considerable number of countries report their willingness to rely principally on either demographic or non-demographic adjustments alone. Apparently, minor problems of population growth are considered to be well enough handled by partial or narrowly gauged attempts at remedy, while major problems are felt to require a multifaceted approach.

If these current policy indications are found to prevail in future, a notable conclusion will emerge: the larger the significance of population-growth problems as perceived by nations, the less likely is it that demographic approaches alone will be adopted. The 1976 data suggest that no more than about 15 per cent of the world's nations—or one in six—would currently be willing to rely on a demographically oriented approach in coping with adverse impacts of population growth on development. A related finding, namely that developed countries appear more willing than less developed ones to

rely exclusively on demographic adjustments, needs to be further explored.

The fact that some 60 per cent of the Governments reported to be "action-oriented" towards their problems of population growth seek changes in their patterns of natural increase should be correlated with the further fact that over 75 per cent would seek co-ordinate or sole redress through changes in distribution. Whether the demographic impacts of growth on development are believed to be major or secondary, reliance on internal distribution measures especially, as well as on international migration, is the method most widely adopted for dealing with excessive or deficient growth of numbers.

Policies intended to overcome population-growth obstacles to development were classified in the 1976 survey as belonging to five broad subject areas: mortality, fertility, spatial (internal) distribution, international migration, and "non-demographic." Among the 30 developed nations identified as exercising one or more such policies, four fifths reported the use of non-demographic programme elements; about one fourth used mortality programmes; nearly three fifths had fertility programmes; a like proportion had spatial distribution programmes; and two thirds reported actions to affect international migration. Among the corresponding 102 less developed nations, nearly all had adopted non-demographic policies for demographically-related goals; one fifth had mortality programmes for such purposes; a little over half had fertility programmes; nearly all had policies affecting spatial distribution; and about three fifths followed policies relating to international migration. Here again, as with perceptions, the greater reliance of less developed regions on non-demographic methods of approach is apparent, as is their relatively greater emphasis on distribution or migration policy options, compared with mortality or fertility options, in adopting demographic measures.

More than half of the entire group of 132 actively intervening countries employed at least four of the above five broad classes of policy options, while less than one third used two or fewer options. No country was found to rely exclusively on a combination of mortality, fertility and international migration (i.e., demographic only) options, and only one used any two of these exclusively. As might be expected, mortality policy is never selected as an only means of intervention; rather, it is always reported in association with at least three of the remaining four broad classes of options. A pronounced direct relation was found to prevail between the degree of significance attached to the effects of population growth on development and the number of classes of policy methods adopted.

The limited or partial roles that Governments generally assign to mortality, fertility or international migration when coping with unsatisfactory population increase have an important implication. For each of these components of change, policies designed to affect it are also intended to serve other—non-growth or non-demographic—objectives. Attempts to reduce mortality for humanitarian reasons, to cope with illegitimate fertility for social reasons, or to unite families previously separated by migration are all examples of this. In each of these instances, growth and non-growth goals tend to be envisaged as simultaneous, or even inseparable.

Fertility policy patterns indicate mosaic-like complexities similar to those for growth policy. About half of the Governments surveyed have reported that they provide neither incentives nor disincentives for purposes of altering reproductive behaviour. Most of the remaining less developed countries attempt to induce declines, and all of the remaining more developed countries seek either to induce increases or to bring a halt to declines. About 10 per cent of the Governments, almost evenly divided between less and more developed nations, report efforts to limit access to methods of fertility regulation, while almost 20 per cent, nearly all less developed, are described as neither limiting nor encouraging such access.

Policy actions undertaken to affect population distribution include attempts to affect rural-to-urban migration, to re-structure the rural-urban residential network, or both. Two out of three of the world's nations would prefer to decelerate the rural-to-urban flow of migrants and three out of five to modify substantially their residential patterns by area.

Institutional arrangements

The extent to which population policy is adequately formulated and assessed depends heavily on research inputs and other advisory infrastructure. In the developed regions, where the data needed for policy development are relatively abundant, the informational inputs used for such purposes are deemed limited by Governments in about one out of four cases. This relatively high proportion may well reflect the fact that in half the developed nations no central agency exists to integrate population policies within a national plan. Hence, the significance of the proportion may in large measure be formal rather than substantive. In the less developed regions, the situation is largely reversed. Here, a central planning institution exists in almost every country, but more than a third of the time research inputs to population policy processes are reported to be limited.

The inadequacy of basic data in most less developed areas remains a central item on the world's demographic agenda, despite the numerous individual or *ad hoc* ways in which Governments have improvised research or similar investigatory facilities for dealing with population problems. In all regions, both more developed and less developed, an increasingly reliable knowledge of how demographic trends and patterns interact with socio-economic change will be needed in the decades ahead. There will be a no less persistent need to integrate population policy with mainstream development policies. Both the developmental and demographic orientations can thereby inform and enrich each other.

Part One

POPULATION TRENDS

Chapter I

POPULATION GROWTH*

From a global viewpoint, the human population increased at a steady but modest pace until the twentieth century even though there were periods of sharp decrease and gradual increase. By the early years of the nineteenth century the world population had reached 1 billion. Growing at an average of about 0.5 per cent per annum during that century and around 0.8 per cent per annum during the first half of this century, it rose to 2 billion by about 1930. In the more developed regions of Europe and Northern America, and Oceania, modernization and industralization brought a moderately high growth rate of slightly more than 1 per cent. It was only after the Second World War, however, that human population growth broke completely with all known patterns of the past. With the rapid dissemination of public health and modern medicine in the less developed regions, aided by economic and social development programmes of national Governments and international organizations, a marked acceleration of the world population growth became apparent.

The unprecedented acceleration of the growth rate following the Second World War drastically shrank the time required between net incremental additions of 1 billion people. Growing at rates reaching 1.8–1.9 per cent per annum, the world population reached 3 billion around 1960 and 4 billion by 1976. The global growth rate is expected to peak at about 1.95 per cent per annum some time between 1975 and 1980 and to decline to about 1.6 per cent by the end of the century. Nevertheless, the world population will continue to grow rapidly and is expected to surpass 5 billion before 1990, to reach 6 billion within the succeeding decade; it may be as much as 6.25 billion by the year 2000. Thus, whereas it took about 30 years for the world population to increase by 1 billion in the first half of the century, it will take less than a decade by the end.

As in the past, neither current nor projected population growth is the same in all parts of the world. Table 1 summarizes the differences between growth in what are currently defined as the more developed and less developed regions of the world.[1] Throughout the period of industrialization in the more developed regions, it appears that the population of those regions increased more rapidly than the population of the less developed regions. Following the Second World War, however, the situation was reversed, and it is estimated that during the last quarter of the present century the population of the less developed regions will increase at about three times the rate of the population of the more developed regions. Consequently, whereas roughly two thirds of

* Prepared by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.

[1] The "more developed" regions include all the regions of Europe and Northern America, the USSR, and the regions of Japan, Temperate South America, and Australia and New Zealand. The "less developed" regions comprise all the rest of the world.

TABLE 1. GROWTH OF THE POPULATION OF THE WORLD AND THE POPULATIONS OF THE MORE DEVELOPED AND LESS DEVELOPED REGIONS, 1850–2000

Geographical area	*1850*	*1900*	*1950*	*1975*	*2000*
			Population in millions		
World total	1 262	1 650	2 501	3 968	6 254
More developed regions	343	573	857	1 132	1 360
Less developed regions	919	1 077	1 644	2 836	4 894
			Percentage of total population of the world		
More developed regions	27	35	34	29	22
Less developed regions	73	65	66	71	78
			Percentage of annual increase since the preceding date		
World total		0.54	0.83	1.85	1.82
More developed regions		1.03	0.81	1.11	0.73
Less developed regions		0.32	0.85	2.18	2.18
			Percentage of total increase in the population of the world since the preceding date		
More developed regions		59	33	19	10
Less developed regions		41	67	81	90

Sources: For 1850: John D. Durand, "The modern expansion of world population", *Proceedings of the American Philosophical Society,* vol. 111, No. 3 (1967), p. 143. For 1900, *The Determinants and Consequences of Population Trends* (United Nations publication, Sales No. E.71.XIII.5), vol. I, p. 4, table I.1. The figures for 1950, 1975 and 2000 are the "medium" estimates and projections prepared by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat (see *World Population Prospects as Assessed in 1973,* Population Studies, No. 60 (United Nations publication, Sales No.E.76.XIII.4)).

the world population was to be found in the less developed regions during the first half of the century, the proportion is expected to reach four fifths by the year 2000. By that time fully 90 per cent of the net increase of the world population will occur in the less developed regions, if current projections are realized.

Since the quinquennium from mid 1950 to mid 1955, the average annual growth rate of the more developed regions has decelerated from each five-year period to the next, from 1.3 in 1950–1955 to 0.9 in 1970–1975, and according to United Nations projections, the rate should reach about 0.6 per cent per annum by the end of the century (see annex table 72). In contrast, growth rates of the less developed regions have increased from 1.9 in 1950–1955 to 2.3 in 1970–1975. United Nations projections anticipate that the growth rate of the less developed regions will peak at about 2.4 per cent per annum in the period 1975–1980 and that thereafter it will decline. At the end of the century the annual growth rate is expected to be just about equal to what it was at mid century—roughly 1.9 per cent. This will be over three times the predicted growth rate of the more developed regions. In sum, the divergence of growth rate between the more developed and less developed regions is very pronounced at present but is expected to diminish moderately towards the end of the century.

For the world as a whole, the levels and trends in population growth over time simply reflect levels and trends in birth and death rates. Migration may also affect growth rate of geographical divisions, but net migration has or is expected to have a significant effect on growth in only a limited number of countries. If the migration component is excluded or assumed to have a negligible effect on growth, the so-called rate of natural increase is simply the difference between the annual crude birth and death rates. Left in this form it expresses growth per 1,000 population. If it is divided by 10 it expresses growth per 100 population, or the annual percentage rate of increase. Both measures of population growth and forms of expressing growth are used in this report.

If the death rate is declining, a reduction in the growth rate can only be achieved if the birth rate decreases more rapidly than the death rate. For the world as a whole, both the birth and death rates have consistently declined since the early 1950s and they are expected to continue to do so to the end of the century. However, since the death rate will have decreased more rapidly than the birth rate through the late 1970s, the world population growth rate will continue to accelerate until the end of the decade. Thereafter birth rates are expected to decline faster than death rates and the rate of world population increase will begin to decelerate.

The pattern of population increase for the less developed regions is similar to the one for the whole world, since those regions make up a sizeable majority of the total population and their birth and death rates are both higher than in the more developed regions and they are the ones that are changing the most (see figures I and II). In the more developed regions, the birth rate is expected to decline throughout the half century from

Figure I. Past and projected trends of the growth rates of the world, the more developed and the less developed regions, from 1950–1955 to 1995–2000

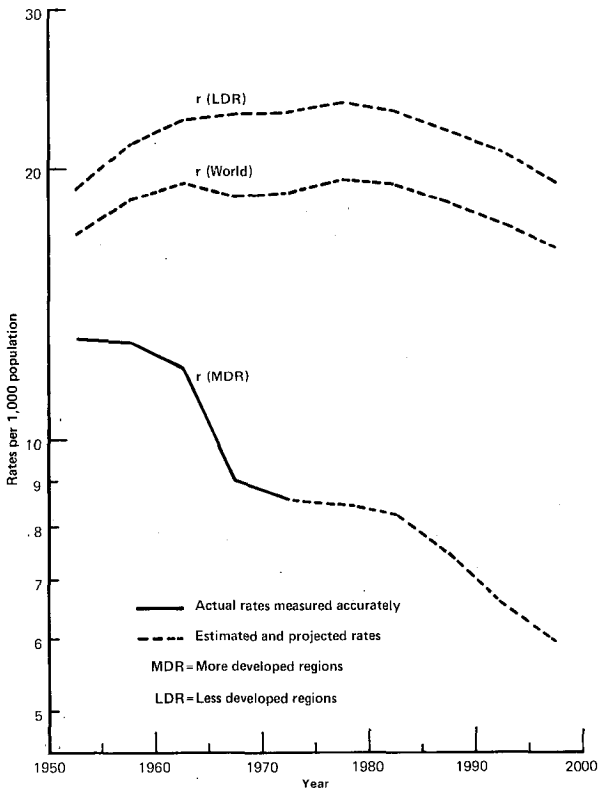
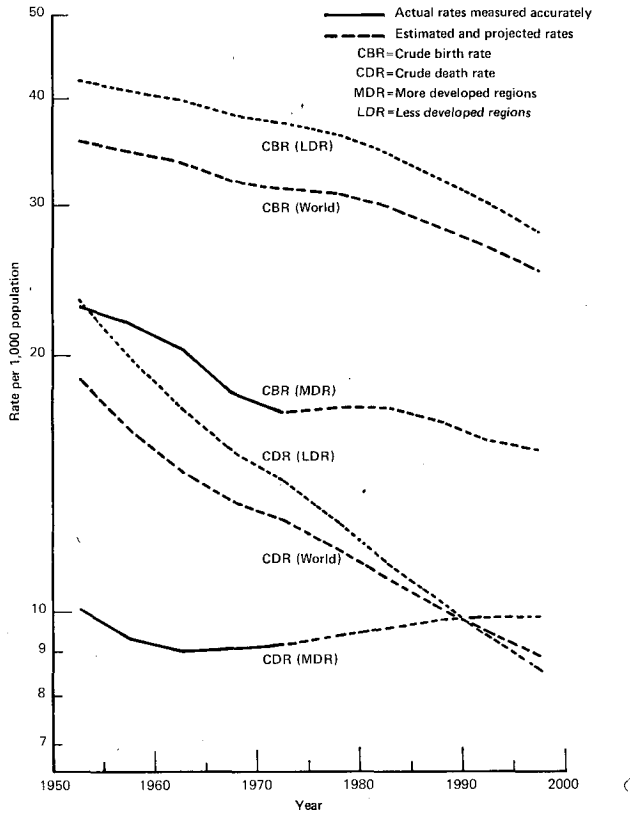


Figure II. Past and projected trends of the crude birth and death rates of the world, the more developed and the less developed regions, from 1950–1955 to 1995–2000



1950 to 2000 except for minor irregularities in the period from 1970–1975 to 1980–1985. But even in that period the crude birth rate for the more developed regions (17.4 per 1,000 population) will be less than half the rate for the less developed regions. The crude death rate for the more developed regions probably reached its minimum (9.0 per 1,000 population) between 1960 and 1965, and from then until the end of the century it will probably continue to increase very slowly as the population of the regions ages. By the end of the century it may be stabilized at about 10 per 1,000, but in any event the projected changes in the death rate are very small, and significant further reduction is not expected. By the end of the century the rapid decrease of the death rate for the less developed regions will probably produce a lower death rate for the less developed than for the more developed regions. This will largely be a consequence of the younger age structure of the population of the less developed as opposed to the more developed regions. Nonetheless, a reduction within the half century from more than 23 per 1,000—over twice the death rate of the more developed regions—will be an impressive achievement.

If the crude birth rate of the less developed regions can be reduced as projected, by 10 per 1,000 from the current level of about 38 to 28 at the end of the century, it will be an even more impressive achievement than the nearly 6 per 1,000 reduction (from over 14 to less than 9) projected for the crude death rate. Equal reductions are generally harder to attain in the birth rates than in the death rates when both are high. The latter is more susceptible to change by governmental action, since projected reductions are more easily attainable largely within the framework of public health measures and current medical technology, given adequate funding for facilities and personnel. In addition the desirability of reducing death rates is not controversial, whereas fertility regulation is a sensitive political issue in some areas of the world. Even where it is noncontroversial, substantial reductions in fertility require fundamental changes in human behaviour and value systems.

A. Regional and national growth

A combination of estimated and projected population sizes at five-year intervals over the period from 1950 to 2000 are given in annex table 71. The figures for the populations of the more developed countries and regions up to and including 1970 are known with a high degree of accuracy. The figures for the less developed areas, however, necessarily range from very accurate to very uncertain owing to the great differences in availability and quality of data from country to country. In very broad terms, the figures for Latin America are among the best, and some are comparable in quality to those of the more developed countries, whereas those for sub-Saharan Africa are among the least reliable. The projected populations for the period 1975–2000 are credible in view of recent experience and current knowledge regarding new and likely developments.

Average annual growth rates are presented in annex table 72 for each quinquennial period between the populations given in table 71. The growth rates up to and including 1970 generally reflect the net effects of international migration, where they can be established or estimated, but those for projected populations only include anticipated net migrations for those countries in which past patterns are known and the volume has been significant. Average annual crude birth and death rates for regions and countries or areas that had a population of at least 250,000 in 1970 are presented in annex tables 74 and 73 respectively, for each five-year period from 1950 to 2000. The reliability of these rates parallels the reliability of the estimates of population size, which has already been discussed.

The more developed regions

The growth rate of the more developed regions has declined from 1.3 per cent per annum during the early 1950s to a current rate of about 0.9 per cent and it is expected to fall to 0.6 by the end of the century. During the period 1970–1975 rates for individual regions varied from a high of 1.8 per cent in Australia plus New Zealand to a low of 0.4 per cent in Northern Europe. The minimum rates have been relatively stable and most of the regional rates are expected to converge on the minimum around the end of the century. Thus, the lowest growth rate in the early 1950s was 0.37 per cent in Northern Europe, and the projected low for the late 1990s is 0.40 per cent in Western Europe. The latter should be within 0.2 per cent of the rates for all but two regions—Temperate South America and Australia-New Zealand. The population of Australia-New Zealand grew most rapidly throughout the third quarter of the century and it is expected to be the most rapidly growing regional population until the end of the century. However, the rate of growth in Australia-New Zealand will have decelerated from a high of 2.3 per cent during the early 1950s to the current rate of 1.8 per cent and a projected low of 1.2 per cent at the end of the century.

As a consequence of its rapid growth, the percentage of the world population in Australia-New Zealand increased slightly between 1950 and 1975, but with the continued deceleration in its rate of growth the percentage will have dropped back to the 1950 level (0.4 per cent) by the year 2000. Similarly, because of rapid growth, Temperate South America accounted for 1 per cent of the world population throughout the period 1950–1975, but will drop below (to about 0.8 per cent) by the end of the century. Each of the other more developed regions accounted for a smaller share of the world population in 1975 than in 1950, and the trend will continue to the end of the century. Then the percentage of the world population in Northern Europe will be half what it was in 1950. The changing percentages of the world population in major continental divisions are presented in table 2.

During the past quarter of a century immigration has played a greater role in the growth of Australia-New Zealand than in any other of the more developed regions. In some periods it may have accounted for more

TABLE 2. PERCENTAGE DISTRIBUTION OF THE POPULATION OF THE WORLD, BY MAJOR REGIONAL GROUPINGS, 1970–2000

Geographical area	*1950*	*1960*	*1970*	*1975*	*1980*	*1990*	*2000*
World total	100	100	100	100	100	100	100
More developed regions	34	33	30	29	27	24	22
Less developed regions	66	67	70	71	73	76	78
Africa	9	9	10	10	11	12	12
Latin America	7	7	8	8	9	9	10
Northern America	7	7	6	6	6	5	5
East Asia	27	26	26	25	25	23	22
South Asia	28	29	30	32	33	35	36
Europe	16	14	13	12	11	10	9
Oceania	1	1	1	1	1	1	1
USSR	7	7	7	6	6	6	5

Source: See table 1.

than a third of the region's growth, and by the end of the century the population of Australia-New Zealand would be growing at about 1 per cent per annum if immigration were to cease or simply balance emigration. Excluding the contribution of net immigration, the maximum growth rate for the early 1950s would have been 1.73 per cent (in Temperate South America) and the degree of convergence of regional growth rates, while still significant, would have been less. Including immigration, the maximum growth rate during the early 1950s was 6.3 times the minimum and by the end of the century the range will have been reduced to less than half. Excluding immigration, however, the maximum rate is expected to have declined from 4.7 to 2.7 times the minimum rate over the same half century.

While it is true that for the more developed regions as a whole the birth rate has had the predominant influence upon the growth rate, that influence has not been commensurate with the differences in regional growth rates. The regions with the lowest growth rates have had the lowest birth rates, but they have also had the highest death rates. For example, during the early 1950s Australia-New Zealand had a growth rate (excluding net migration) that was 4.7 times greater than Northern Europe's. Australia-New Zealand's crude birth rate of 23.5 per 1,000 population, however, was only 1.4 times that of Northern Europe, whereas the latter had a crude death rate of 11.3, which was 1.2 times greater than that of Australia-New Zealand. Life expectancy at birth for the two regions differed only by about six months. Thus the difference in growth rates reflected not only a lower birth rate in Northern Europe but also an appreciably older population, which produced a higher crude death rate in spite of the fact that the age specific death rates for the two regions were nearly the same. Much of the convergence in growth rates that will be witnessed around the end of the century will be the by-product of such aging in the currently younger populations of the more developed regions and the more uniform age structures that will begin to emerge.

Although there are wave effects evident in the birth and death rates given in the annexed tables arising out of past anomalies and distortions of age structures, it is uniformly true that the highest birth and death rates were recorded in the more developed regions before 1965 and that the lowest are projected for the last decade of this century. Thus, regardless of regional or national fluctuations and variations, the secular trend for both birth and death rates is a declining one. Regularly increasing life expectancies are a part of the same trend projections. Because of the way birth and death rates interact, however, regional growth rates have not and are not expected to decline consistently from one quinquennium to another. Rather, reflecting the echo effects of the post-war baby boom in birth rates and differing processes of aging, secondary highs will appear. Japan, for example, has just passed through a period (1970–1975) when its growth rate was approximately 25 per cent higher than it had been a decade earlier and more than twice what it is expected to be by the late 1980s.[2]

At the national level, the fact that crude birth and death rates are declining and will continue to do so does not mean that in relative terms they are converging. On the contrary, between the early 1950s and late 1970s, the absolute difference between minimum and maximum death rates had increased—from 6.8 to 7.4 per 1,000 population. It is expected to decrease to 7.0 by 2000, but the relative difference between minimum and maximum rates will have increased through the half century.

The less developed regions

The average annual growth rate of the less developed regions has increased from 1.9 per cent per annum during the early 1950s to a current rate of about 2.4 per cent. The rate is expected to drop off after the late 1970s and to return to the rate of the early 1950s by the end of the century. At that time, about 4.9 billion, or 78 per cent of the estimated world population of almost 6.3 billion people, will live in the less developed regions. This will be about three times the number of people who lived in the less developed regions in 1950, when they contained about 1.6 billion people and accounted for two thirds of mankind. In 1975, some 2.8 billion people, or 71 per cent of the estimated world population of just under 4.0 billion, lived in those regions. The size and proportion of the increment added to the world population by the less developed regions between 1950 and 1975 are even more impressive. Between 1950 and 1975, the world population expanded by 1,467 million, but 81

[2] The marked decline in the growth rate in Japan during the late 1980s will be partially attributable to an increase in crude death rate due to the aging of the population, which is expected to gather momentum in the coming years.

per cent of this increment is attributable to an increase in the less developed regions (1,192 million people). According to United Nations projections, between 1975 and 2000 the world population should increase by 2,286 million and 90 per cent of this increase should occur in the less developed regions.

Unlike the more developed regions, the less developed regions in which birth rates have been low have also had low death and growth rates, a pattern that is projected to continue until the end of the century. The high rates are also usually associated, but the pace of change of all rates differs so much from region to region that the kind of generalization made for the more developed regions is not possible, even though, as in those regions, the crude birth rates, with two exceptions (Western and Southern Africa), are lower now than they were in the 1950s. All less developed regions are expected to reach the lowest birth rates for the period by the end of the century. Similarly, the highest estimated death rate for every less developed region occurred during the early 1950s and the lowest for the half century is expected at the end of the period. Minimum growth rates appear at both ends of the period and maximum rates are scattered throughout the period (see annex table 72).

Between the early 1950s and late 1970s, the changes in growth rate of every region arose primarily from changes in regional death rates. During the remainder of the century changing birth rates will have a greater effect upon growth rates in all of the regions except those of sub-Saharan Africa, where changing death rates will continue to be more important until the 1990s. Thus, the highest birth and death rates estimated or projected for the half century have almost invariably been for the region of Western Africa, and throughout all but the last five years of the period death rates are expected to decline more rapidly than birth rates.

As a consequence of the above developments, the maximum and minimum regional birth and death rates have diverged rapidly since the early 1950s. At that time the maximum estimated death rate of almost 29 per 1,000 population in Eastern and Western Africa was twice the minimum of 14 in the Caribbean. By the late 1970s the estimated maximum of 21 for Western Africa exceeded three times the estimated minimum of 6.7 for Micronesia and Polynesia. However, regional death rates are expected to begin converging and by the end of the century the maximum projected crude death rate of 13.5 for Western Africa will be about 2.6 times the minimum of 5.2 projected for Tropical South America. Crude birth rates, on the other hand, are expected to continue to diverge to the end of the century.

Between 1950–1955 and 1970–1975, the estimated crude birth rates for the less developed regions declined by 4.6 per 1,000 from 42.1 to 37.5. The extent to which a decline in birth rate in each major area, region, and country of the less developed world has contributed to this decline in the entire less developed regions was assessed by comparing the actual number of births in the quinquennium 1970–1975 and the expected number for 1970–1975 calculated on the assumption that the birth rate estimates for 1950–1955 remained constant throughout the period. This technique indicates that the decline in crude birth rate for China accounted for 72 per cent of the decline in the entire less developed regions. Of the remaining 28 per cent India accounted for 7 per cent, all of Latin America for 11 per cent, Brazil for 4 per cent, Mexico for 2.4 per cent, and Northern Africa for 4 per cent. It should, however, be emphasized here that the estimates of the changes in China's birth rate are still largely the product of speculation.

Paralleling the trend of the less developed regions, the percentage of the world population in Africa, Latin America, and South Asia is becoming larger. In 1950, the populations of these three major areas accounted for 9, 7, and 28 per cent of the world population, and in 1975, 10, 8, and 30 per cent respectively. By 2000, the percentages are expected to have increased to 12, 10, and 36 per cent respectively. The increase in South Asia is particularly notable. The share of Oceania has remained almost unchanged. Of the less developed regions, only East Asia, which includes China, has had a shrinking share of the world population: 27 per cent in 1950 (roughly equal to that of South Asia in 1950), 26 per cent in 1970, and 25 per cent in 1975. By 2000, East Asia's share of the world population is expected to be further reduced to 22 per cent, which will be substantially less than that of South Asia.

As in the case of the more developed regions, declining national rates are not necessarily convergent. Nor do the ranges of national figures exhibit patterns that are entirely consistent with the ones discussed for the less developed regions as a whole. The figures for the less developed regions are in many cases rough estimates and the role of migration in most cases is hardly known. Where it can be surmised, it is represented by the difference between the growth rates shown in annex table 72 and the rates of natural increase determined by subtracting the crude death rates from the crude birth rates. So far, the absolute difference between maximum and minimum national rates of natural increase, for areas with a population of 250,000 or more in 1970, has remained fairly constant at about 3.3 per cent in each five-year period. Since the early 1950s the lowest rates of natural increase have been the ones for Gabon. Starting in the vicinity of 0.3–0.5 per cent per annum, it is now estimated to be approximately 0.8 per cent. At the same point of time, the maximum average annual rates of natural increase were 3.6 per cent, for Costa Rica in the early 1950s, and about 4.1 per cent, for Kuwait at present. (It will be noted that the maximum rates reflect the general difference in growth patterns for the major continental divisions.) Chiefly because the minimum rates of increase have grown larger, the relative difference between maximum and minimum rates has decreased. During the 1950s the maxima were between 7 and 12 to 13 times the minimum. At present (during the late 1970s), Kuwait's rate of natural increase is approximately 5.4 times that of Gabon.

Like the crude birth rates of the less developed regions, the national rates exhibit a strong divergent trend, both in absolute and in relative terms. The high-

est estimated birth rates are those of Honduras (55 per 1,000 population in the early 1950s) and the Niger (currently about 52 per 1,000 and projected to be 47 at the end of the century). While the highest rates have been declining, so have the lowest, but the latter have been declining more rapidly, from about 27 per 1,000 in Cyprus in the early 1950s to a rate of 19.4 in Hong Kong in the 1970s and a projected rate of about 15 for Singapore at the end of the century. Consequently, whereas the maximum crude birth rate was twice the minimum at the beginning of the period, it is now about 2.7 times the minimum and should exceed three times the minimum during the late 1990s. The absolute difference between maximum and minimum rates has increased from about 27 to 32 per 1,000 since the early 1950s, but it is expected to remain nearly constant from now until the end of the century.

While the absolute difference between maximum and minimum birth rates has increased, the difference between high and low crude death rates has diminished from 29 per 1,000 in the early 1950s to about 20 in the late 1970s. Nevertheless, like the range of birth rates, the relative difference between maximum and minimum death rates has apparently increased slightly. The absolute difference between death rates is expected to decrease during the remainder of the century, however, and the relative range is expected to have diminished significantly by the end of the century. At present the highest rates are those for Ethiopia and the Upper Volta (about 25).

Twenty-eight of the less developed countries have been designated the least developed countries.[3] With the exception of Western Samoa these are areas where both birth and death rates are above the average for the less developed countries. The high birth and death rates have served to keep the growth rates of the least developed below those of the less developed countries as a whole. Maximum growth rates have been and are expected to hover around 3.2 per cent per annum for the entire second half of this century. However, because minimum rates will increase somewhat, the absolute and relative ranges of growth rates will diminish slightly. Both birth and death rates will decrease during the period but the relative spread will increase as the rates change more rapidly in some areas than in others. The absolute difference between maximum and minimum birth rates has increased and should continue to increase, whereas the difference between death rates is expected to diminish during the last two decades of the century.

The population of the least developed countries has increased from an estimated 139.3 million in 1950 to about 244.4 million in 1975, and it is expected to exceed 480 million by the year 2000. These countries constituted about 5.6 per cent of the world population at the first date and 6.2 at the second and they are expected to account for 7.7 per cent of the total at the end of the century. Between 1950 and 2000 their share of the less developed countries will have increased from about 8.5 per cent to almost 10 per cent. During the past quarter century, the least developed countries have included about 10 per cent of the population of South Asia, 18 per cent of the population of North Africa, and 35 per cent of the population of sub-Saharan Africa.

Whereas the average growth rates for the least developed countries has increased to about 2.7 per cent per annum and will remain around that level almost to the end of the century, the relatively more developed of the countries included in the less developed regions have experienced falling growth rates corresponding to trends among the countries of the more developed regions. As among the latter, the growth rates reflect a combination of declining birth rates and population aging, which has or should shortly bring about a rise in crude death rates while life expectancy continues to increase or stabilizes. It follows that, while age structures become more similar among the more developed regions during the second half of the twentieth century, they will become increasingly dissimilar among the less developed regions.

B. Size, density and development as factors in population growth

Population size and growth rates

Approximately 2.8 billion people, or 70 per cent of the world's population, live in the 15 largest countries, which exercise sovereignty over about 43 per cent of the total land area of the world. In 1975 seven of the 15 had a population in excess of 100 million people. They were Brazil, China, India, Indonesia, Japan, the Union of Soviet Socialist Republics, and the United States of America. The other eight had populations of between 50 and 100 million. They were Bangladesh, France, the Federal Republic of Germany, Italy, Mexico, Nigeria, Pakistan, and the United Kingdom.

The remaining 30 per cent of the world's population in 1975 lived in the more than 190 countries and areas that each had fewer than 50 million people. Of these countries and areas, 39 had a population of between 10 and 50 million, 27 had a population of between 5 and 10 million, 45 had a population of between 1 and 5 million, and more than 80 had a population of less than one million.

The combined population of the 15 largest countries has grown more slowly than the total world population. The former increased by 55 per cent between 1950 and 1975 while the latter increased by about 59 per cent. However, the eight less developed countries that are included among the 15 largest countries increased by 67 per cent over the 25-year period. The seven more developed countries, on the other hand, increased by only half that amount. As a result, the eight largest less developed countries, which alone accounted for about 47 per cent of all humanity in 1950, contained half of the

[3] Eighteen of the countries are in sub-Saharan Africa: Benin, Botswana, Burundi, the Central African Empire, Chad, Ethiopia, the Gambia, Guinea, Lesotho, Malawi, Mali, the Niger, Rwanda, Somalia, the Sudan, Uganda, the United Republic of Tanzania, and the Upper Volta; eight are in Asia: Afghanistan, Bangladesh, Bhutan, Democratic Yemen, the Lao People's Democratic Republic, Maldives, Nepal and Yemen; and the remaining countries are Haiti in the Caribbean and Western Samoa in Oceania.

world's population by 1975. In contrast, the seven largest more developed countries contained a fifth of the world population in the latter year, as opposed to almost a quarter in 1950.

In the period 1970–1975, the average annual growth rates of the 15 largest countries varied from as low as 0.32 per cent in the Federal Republic of Germany and 0.34 in the United Kingdom to an estimated high of 3.25 per cent in Mexico. Together they accounted for two thirds of the 357 million net increase in the world population. During the five-year period, 6 of the 15 largest countries had estimated population increases that exceeded 10 million people. All but the USSR were less developed countries, and of them Pakistan showed an increase of just over 10 million, Brazil an increase of about 14.5 million and Indonesia a net increase of around 16.6 million. The absolute increase of China's population was over four times that of Indonesia, but for the first time in modern history, China's increase (about 67 million) was exceeded by India's (over 70 million). The sum of the population increases for these six countries alone is over 190 million people, which is roughly equal to the total population of the 125 or so countries and areas in 1975.

The 15 largest countries overshadow all the others both because of sheer size—whether measured in area, population or absolute growth—and because their growth characteristics encompass most of the realm of recent experience described above. During the period from 1970 to 1975, for example, two of the 15 largest countries (Mexico and Pakistan) grew at an average annual rate of 3 per cent or more. In 1975, their combined population was about 130 million. However, during the preceding five-year period the populations of another 35 countries also grew at rates of 3 per cent or more, and their combined population in 1975 was approximately twice that of the other two. The population in eight of the 35 countries (Algeria, Colombia, Iraq, Kenya, the Philippines, Sudan, Thailand, and the United Republic of Tanzania) was between 10 and 50 million in 1975, and that in another 5 (the Dominican Republic, Ecuador, Southern Rhodesia, the Syrian Arab Republic and Zambia) was between 5 and 10 million.

At the other extreme, there were 48 countries in which the average annual population growth was less than 1 per cent between 1970 and 1975. This group included all but Japan of the seven largest more developed countries discussed above. The USSR and the countries of Europe and Northern America made up 30 of the 48 countries. With the exception of Western Sahara, the remaining countries and areas were small islands in the Atlantic and Indian Oceans and in the Caribbean. In 1975, 15 of them had a population of less than 100,000 people.

In between the two growth extremes there were 44 countries that had average annual population growth rates of between 1 and 2 per cent during the period 1970–1975. China and Japan, of the 15 largest nations, were in this group, and most of the remainder were countries or areas with small populations. The growth rate of the population in the largest number of countries (79) was between 2 and 3 per cent during the early 1970s. Two of them, Albania and Greenland, are classified as countries in the more developed regions, by virtue of their geographic location. The other 77 are all countries or areas in the less developed regions and include four of the 15 largest countries—Brazil, India, Indonesia and Nigeria; which in 1975 had a combined population of over 920 million people.

Population density and growth in the more developed and less developed regions

Some interesting associations can be highlighted by grouping countries according to both population density and whether they are categorized as more developed or less developed, and then by cross-tabulating them according to growth rates. Table 3 shows the pattern that emerges when this is done using average annual growth rates for the period 1970–1975 and estimates of population density for 1975.

Before considering population densities it is worth noting that all but two of the countries or areas classified as more developed had average growth rates of less than 2 per cent, which was the rounded average (of 1.89 per cent) for the world between 1970 and 1975. The two exceptions were Albania and Greenland, both of which are included among the more developed regions primarily because of their geographic location. With the two additional exceptions of Australia and Chile, all of the more developed countries had growth rates that were under 1.5 per cent per annum. On the other hand,

TABLE 3. CLASSIFICATION OF COUNTRIES AND AREAS OF THE MORE DEVELOPED AND LESS DEVELOPED REGIONS ACCORDING TO AVERAGE ANNUAL GROWTH RATES, 1970–1975, AND POPULATION DENSITY IN 1975

Average annual percentage growth rate, 1970–75	*Population density per square kilometre*							
	Total		*29 or fewer*		*30–149*		*150 or more*	
	More developed regions	*Less developed regions*	*More developed regions*	*Less developed regions*	*More developed regions*	*Less developed regions*	*More developed regions*	*Less developed regions*
All	49	159	16	68	17	54	16	37
0.00–0.49	15	6	3	2	6	1	6	3
0.50–0.99	19	7	5	1	8	3	6	3
1.00–1.49	11	12	5	1	2	3	4	8
1.50–1.99	2	20	2	6	0	7	0	7
2.00–2.49	0	37	0	19	0	12	0	6
2.50–2.99	2	40	1	21	1	15	0	4
3.00 +	0	37	0	18	0	13	0	6

134, or 84 per cent, of the less developed countries and areas had growth rates of 1.5 per cent or more. Almost half of the less developed countries and areas had growth rates of 2.5 per cent or more.

The simple population densities used for table 3 have limited value inasmuch as they ignore the great differences in kinds and quality of land around the world—its desirability, arability and habitability—that affect both optimum and supportable densities. Nevertheless, the 25 less developed countries and areas that had growth rates of less than 1.5 per cent per annum are almost exclusively ones that had small populations, most of which were less than one million in 1975. Except for a few countries like Gabon and Western Sahara, they are also small island states and areas in the Atlantic and Indian Oceans and in the Caribbean. The population density of 21 of the 25 countries was above the global average of 29 people per square kilometre in 1975, and 14 of them had a density of 150 or more people per square kilometre. An association between relatively slow growth and relatively high density can also be found among the more developed countries (for example in the German Democratic Republic, the United Kingdom, Malta, Belgium, and the Federal Republic of Germany) as can an association between relatively rapid growth and relatively low density (for example, in Argentina, Uruguay, Canada, Iceland, Australia and New Zealand). There are, of course, a number of important exceptions to these associations—as in the cases of India and Bangladesh, where high density and rapid growth are associated—but questions can be raised as to how long they can be sustained. In any event, such associations may provide a useful perspective for the further examination of population growth.

In conclusion it may be noted that since the early 1950s the rates of population growth have increased in 128 of the world's 208 countries and areas. Of these 128 countries, 115 belong to the less developed regions, and the larger populations of Africa, Latin America and Asia are conspicuous among them. The only countries and areas in which population growth rates have diminished appreciably since the early 1950s are those of the more developed regions and the countries of the less developed regions, mostly insular, that have small populations.

Chapter II

MORTALITY*

Between the early 1950s and the early 1970s, expectation of life at birth for the world as a whole increased by about eight years, from approximately 47 to 55 years. For the more developed regions, the gain was six years (from 65 to 71 years), compared with an estimated increase of about 11 years for the less developed regions (from 41 to 52 years). Despite the substantially greater improvement in mortality experienced by the less developed regions during this period, the disparity between the two groups of regions remained very large; nearly 20 years. Moreover, it appears that in both the more and less developed regions, mortality did not improve as rapidly in the decade from 1960–1965 to 1970–1975 as it had in the previous decade. Among the more developed countries, life expectancy increased by an average 4.5 years between 1950–1955 and 1960–1965, but only by 1.6 years in the next decade. Among the less developed countries the corresponding increases for the two decades appear to have been about six and four years, respectively.

There are different explanations for the deceleration of mortality improvement in the two groups of countries. In the more developed regions, the benefits to health that can accrue from the present state of medical knowledge and technology have been approaching their limits. On the one hand, mortality from infectious disease is now so low that very little gain in life expectancy could be expected from its complete elimination. On the other hand, the degenerative diseases (particularly heart diseases, cerebrovascular diseases and cancers), which currently present the greatest threat to life, have not been brought under control. In the less developed regions, the rapid declines in mortality that followed the Second World War were achieved largely by borrowing from the existing medical technology of more developed countries, rather than through fundamental social and economic changes. The former was cheap compared with the latter, but there are limits to the amount of mortality improvement that can be had simply by borrowing medical technology. To transcend these limits it is necessary for the less developed countries to improve the nutritional status of the population and to provide adequate sewage disposal systems, pure water supplies, transportation networks, and more and better health personnel and facilities. All of these are costly and can only be accomplished in conjunction with economic progress.

*Prepared by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. Some sections, as indicated in the text, were prepared in collaboration with the World Health Organization.

In the survey that follows, the period from 1950 to the present is dealt with to the extent permitted by the data. The more and less developed regions have been treated separately. The quantity and quality of data relating to mortality differ greatly for the two groups of regions, consequently differences between the more and less developed regions must be sketched in very broad strokes. For the more developed countries, death registration is virtually complete, thus permitting the inference of mortality levels and trends with considerable certainty. In addition, data giving causes of death and certain attributes of the deceased are available. These provide opportunities for refined analyses which are important to an understanding of mortality patterns and the factors that influence them.

The situation is quite different for the less developed countries, where there is a very great need for much more and much better data. Death registration statistics are reasonably complete for only a handful of mostly atypical countries representing a small proportion of the total population of the less developed world. Thus, the most basic measures of mortality for less developed regions at any point of time must be inferred from a variety of methods and techniques for estimating demographic parameters from poor data. The results obtained for even the most basic of mortality parameters—life expectancies or crude death rates—must be viewed cautiously, as rough indicators of orders of magnitude. Inferences about mortality trends are even more tenuous. Similarly, data on mortality by such basic characteristics as sex and age are fraught with so much uncertainty that it is difficult to establish important relationships, for example, the relationship between infant and childhood mortality, or between male and female mortality levels during such important periods of the life cycle as the female reproductive period. Finally, there are no over-all quantitative data on causes of deaths.

Bearing in mind the uncertainties that arise from the inadequate data for the less developed regions, the salient points of this chapter may be summarized as follows:

(*a*) Although mortality has improved considerably since 1950, the rate of improvement during recent years has been decelerating among both the more and the less developed regions.

(*b*) There has been a marked convergence of life expectancies for both sexes among the more developed countries, despite the many differences that distinguish them from one another, whereas large differences in life expectancies remain among the less developed countries. Among the latter, the bulk of all deaths occur early in

life, but among the more developed countries, mortality during roughly the first 50 years of life is now so low that further substantial increases in life expectancy can only be achieved through reductions in mortality above 50 years of age. Thus, by 1970, more than 80 per cent of all deaths in some of the more developed countries occurred among people 50 years of age or older.

(*c*) Infant and early childhood mortality are still unnecessarily high among the less developed regions (especially in sub-Saharan Africa), whereas among the more developed regions they are about as low as is possible given current medical knowledge. Both rates are more variable among the less developed than among the more developed regions, but childhood mortality rates vary more than those for any other age group, including the first year of life. This reflects the heavy toll taken in many countries by preventable infectious, parasitic and diarrhoeal diseases in the age group 1–4. Nevertheless, accidents and influenza and pneumonia are two of the three leading causes of death during early childhood in both the more and less developed countries. Cancers (malignant neoplasms) and birth defects (congenital anomalies) are about equally common among the more developed countries.

(*d*) Male death rates are almost always higher than female rates at every age among the more developed countries, but in at least some less developed countries female rates seem to be often higher than male rates, particularly under 50 years of age. In addition, adult male death rates among the more developed countries have levelled off or even increased in recent years, while female rates have with few exceptions continued to decrease. Thus, among the more developed regions, the gap between male and female life expectancies has been increasing. However, it appears likely that the rates for both sexes will stabilize in the near future.

(*e*) Among nations, life expectancies tend to be lowest in the least developed and highest in the most developed countries. Within nations, variations in life expectancy are directly related to the socio-economic status of individuals. This is true at most ages and regardless of how socio-economic status is measured. The greatest variations within countries occur during infancy and early childhood and, in the few time series available, all socio-economic differentials seem to have been relatively stable during the past two decades. General levels of mortality could presumably be reduced significantly by reducing or eliminating the often large socio-economic differentials as well as through general economic development.

(*f*) Mortality differentials within countries are also related to a variety of other factors, including marital status, female reproductive behaviour, cultural or ethnic practices, and urban or rural residence. However, among the more developed countries, urban-rural differentials are very small and there is no consistent pattern. The data for less developed countries are not conclusive, but it appears that among them urban death rates are generally lower than rural rates. The very large, rapidly growing metropolitan centres of the less developed countries may be exceptions.

A. The more developed countries

The more developed countries include all of Europe, Northern America (Canada and the United States), Temperate South America, Japan, the USSR, Australia and New Zealand. A number of broad generalizations may be made regarding these countries. First, during the past quarter of a century life expectancies have become more uniform and the rate of increase in life expectancy has slowed. Secondly, life expectancies at birth, for both sexes combined, are approaching what appear to be the upper limits attainable with present-day medical practices—about 75 years. Thirdly, there have been some increases in mortality among males in certain age groups during recent years. Fourthly, the available evidence indicates that people who are socially and economically better off live longer than others and that married people live longer than widowed, divorced and single individuals.

General levels and trends

The most widely used measure of mortality is the crude death rate, which is usually expressed in terms of the annual number of deaths per 1,000 population at midyear. It provides a gross measure of deletions from a population due to death and, together with the crude birth rate, permits the calculation of a rate of population increase. Crude death rates for the more developed countries are given in annex table 73, but the usefulness of these rates is seriously limited because they are affected by age structure and the age structures of populations in the more developed countries differ markedly. In two populations which have the same, or similar, age-specific death rates and expectations of life at birth, the one with the older age structure will have the higher crude death rate. Thus, in 1970, Singapore's population had a young age structure, a life expectancy at birth of 67.6 years for both sexes combined, and the crude death rate was 5.2 per 1,000. Life expectancy was about the same for France in 1954 (68.1), but the French population had an older age structure and the crude death rate was 12.1. Since the age structures of the more developed countries are much more variable and irregular than are those of the less developed countries, it is desirable in discussing the more developed countries to use a measure of mortality that is independent of age structure. Life expectancy at birth is such a measure, and it is the one employed in the following discussion.

The regional figures for life expectancy at birth for both sexes combined given in annex table 75 show a substantial convergence during the past quarter of a century and a levelling-off trend. In the early 1950s the life expectancy in every region exceeded 60 years, but the regions fell into two distinct groups. The regions with the lowest life expectancies were Temperate South America (60.3 years), the USSR (61.7), Japan (62.4), Southern Europe (63.3), and Eastern Europe (63.0). There was a gap of over 4 years between the last named and the lowest life expectancy in the second group, which included Western Europe (67.6), Northern Amer-

ica (69.0), Northern Europe (69.2), and Australia and New Zealand (69.8). By the late 1960s, however, the range of regional life expectancies had shrunk from 9.5 years to 6.5, the range being bracketed by Northern Europe (71.8 years) and Australia and New Zealand (also 71.8), on the one hand, and Temperate South America (65.3) on the other. Excluding the latter, the lowest regional life expectancy during the late 1960s was Southern Europe's (69.6), which, with the figure for the other two regions, gave a range of only 2.2 years. It will be noted in examining the data that the regions with the lowest life expectancies at the beginning of the period made the most rapid progress and that in general relatively little progress was made during the 1960s.

The trend towards convergence in life expectancies is less pronounced when the figures for individual countries are examined, but the tendency for life expectancies to level off is more apparent (see annex table 75). In the early 1950s, national life expectancies for both sexes combined covered a range of over 18 years. At the low end were Chile, Albania, Yugoslavia and Portugal, with life expectancies of 54.1, 54.8, 56.7 and 59.0 years, respectively. At the other end of the range were Sweden, Iceland, the Netherlands and Norway with life expectancies of 71.6, 71.8, 71.9 and 72.5 years, respectively. By the early 1970s the range of national life expectancies had been reduced by a third to just over 12 years. Chile, Portugal, Yugoslavia and Argentina were at the low end, with life expectancies of 62.6, 67.0, 67.8 and 68.2 years, respectively. At the upper end of the range of life expectancies were Switzerland (73.7 years), the Netherlands (73.8), Norway (74.3) and Sweden (74.7). Chile alone accounted for about 4.5 years of the range, and if its progress had equalled that of Albania or Yugoslavia, the range in the early 1970s would have been 7.7 years, which is less than half of what the range had been 20 years earlier.

Between the early 1950s and late 1960s, increases in life expectancy between quinquennial periods averaged about 2.9 years among the four nations having initially the lowest life expectancies and about 0.6 years among those with initially the highest life expectancies. Thus the inter-period increases of the countries having the lowest life expectancies were roughly five times those of the countries having the highest. If we treat the data for the most recent periods as representative of developments in the early 1970s we may generalize broadly about the past 10 to 15 years. Among the nations with the highest life expectancies, and most of the others, there has been very little or no increase in life expectancy. Among the nations with the lowest life expectancies the rate of improvement in life expectancy has in most cases slowed down. Thus, in the case of Portugal, life expectancy increased 3.0 years between 1950–1954 and 1955–1959, then 2.0 more years by 1960–64, and another 1.7 years by 1965–69. Among the countries clustered about the mean, most are merely keeping pace with the countries having the highest life expectancies, and a few are, in relative terms, losing ground. The last category includes Israel (a country generally considered to be among the more developed but listed among the less developed countries and discussed to some degree with each in this chapter), where the increase in life expectancy during the last decade has been negligible; Hungary and the USSR, where it has not changed; and Czechoslovakia, where life expectancy has apparently decreased.

The life expectancies discussed above, which are for both sexes, mask differences between male and female longevity, and also mask trends that help to explain the convergence and levelling-off of those life expectancies. Since 1950, female life expectancy in every country has consistently exceeded that of males and, with one recent exception, has continued to increase. In nearly all countries female life expectancy has increased more rapidly than that of males. This phenomenon has widened the gap between male and female life expectancy to the point where, in the early 1970s, female expectancy in the USSR exceeded that of males by 10 years. Five other countries had gaps of seven years or more: Finland (8.3 years), France (7.7), the United States (7.6), Austria (7.2), and Canada (7.1). Israel's female life expectancy exceeded that of the males by only 3.1 years. This was the smallest difference between male and female life expectancy among the 26 more developed countries for which there are official national data for the early 1970s.

An analysis of the data presented in annex table 75 will show that the size of the gap between male and female life expectancy is not related to the levels of life expectancy at birth. Similarly the fact that in recent years male life expectancy in some countries has ceased to increase or has actually declined is unrelated to the level of life expectancy. The data on trends in male life expectancy in eight countries, shown in table 4, serve to illustrate the last point.

The data for Czechoslovakia, the Netherlands and the USSR provide some evidence of declining male life ex-

TABLE 4. TRENDS IN MALE LIFE EXPECTANCY AT BIRTH, EIGHT MORE DEVELOPED COUNTRIES, 1950–1954 TO 1970–1974

Period	*United States of America*	*Belgium*	*Czechoslovakia*	*Federal Republic of Germany*	*Netherlands*	*Norway*	*Poland*	*USSR*
1950–1954	65.9	63.9	63.1	65.1	70.6	70.7	58.6	60.00
1955–1959	66.6	66.0	66.6	66.4	71.3	71.3	62.7	64.0
1960–1964	66.8	67.7	67.5	67.1	71.2	71.1	66.0	65.5
1965–1969	66.8	67.8	67.0	67.5	71.0	71.1	66.8	65.5
1970–1974	67.3	67.8	66.2	67.4	70.9	71.2	66.8	64.0
Exact dates	(1970–1972)	(1968–1972)	(1970–1971)	(1970–1972)	(1970–1973)	(1971–1973)	(1970–1972)	(1971–1972)

pectancy, but they may also be indicative of a process of adjustment to the stagnation exhibited in the data for the other countries. If the latter is the case, it may be that in the Netherlands and Norway male life expectancy has levelled off at a point (about 71 years) close to the hypothetical "ceiling" for males given current medical knowledge and practices. Why the other countries have levelled off at a male life expectancy of between 64 and 68 years is something of a mystery. It may be that they have reached a temporary plateau, beyond which their male life expectancy will begin to increase again, or that they will stabilize at a lower male life expectancy than the Netherlands and Norway. It is also possible that female life expectancy will tend to stabilize in the near future at levels somewhat higher than that for males. This is because of limits imposed upon improvements in mortality in the more developed countries, where most deaths occur in the older ages and are caused by malignancies and cardiovascular diseases, which are at present among the most resistant to treatment or cure. Trends towards increased female participation in the labour force and greater equality with men may also contribute to a slow-down of improvement in female mortality or a stabilization of female life expectancy.

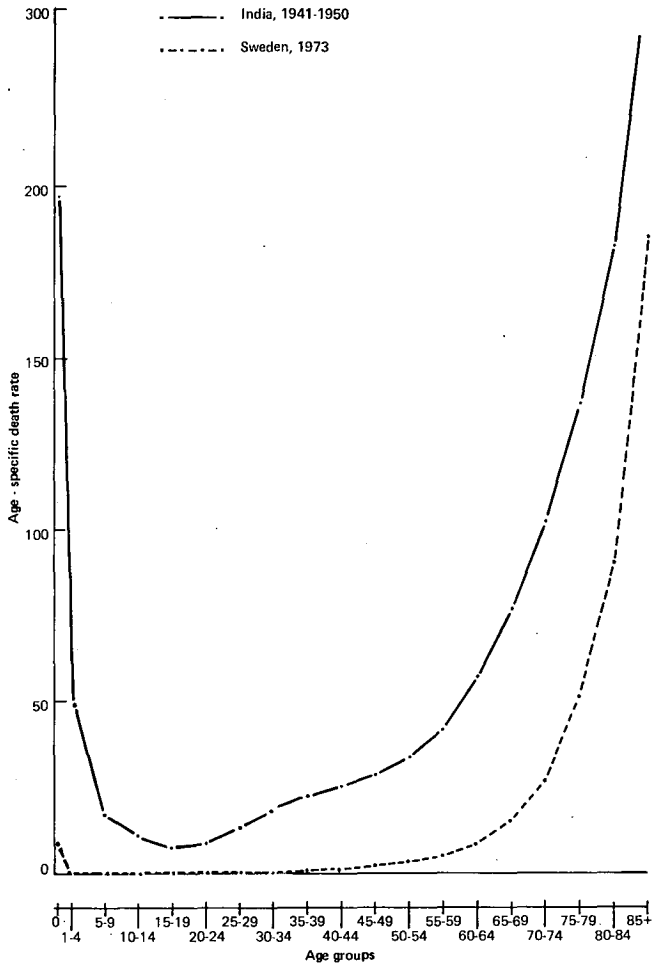
Mortality differentials

Mortality by age and sex

An understanding of age patterns of mortality is essential to an appreciation of recent trends and of the prospects for general mortality levels. When life expectancy is increased in a population, death is postponed. Since the risk of dying is lowest from late childhood through the first decade or two of adulthood, the ability to control diseases of infancy and early childhood has had the effect of shifting the bulk of deaths from the first five years of life to the ages over 50. Expressed graphically, if the age-specific death rates (the number of deaths per 1,000 people of each age) are plotted vertically against age on the horizontal axis, the curve for deaths by age changes as life expectancy increases from an asymmetric U-shaped one to something approximating a J-shaped curve. This is illustrated in figure III using data on females from India and Sweden for times when life expectancy at birth was set at 31.7 and 77.7 years, respectively.

Age-specific death rates are a pure expression of the effects of mortality at different ages. In contrast, the percentage age distribution of deaths actually occurring in a population reflects, in addition, changes in the age distribution of the population itself, and this is largely determined by past fertility levels and trends. Thus, as the birth rate has declined in the more developed countries during recent years, the proportion of older people in each population has increased. And even where age-specific death rates have continued to decline, the proportion of older people who die each year has increased. The effects of such population aging are dramatically illustrated by the data in annex table 76, where it will be seen that between 1950 and 1970 the percentage of

Figure III. Age-specific death rates for females, India, 1941-1950, and Sweden, 1973



all deaths occurring to people 50 years of age or older increased, from as little as 47 per cent in one case in 1950, to the point where in 10 of the 11 selected countries it exceeded 80 per cent in 1970. This occurred despite the fact that in most of the countries the chances of surviving actually improved significantly during the 20-year period.

Age-specific death rates for eight broad age-groups are provided for 20 countries around the years 1950, 1960, 1970 and 1973 in annex table 77. The table also shows the annual percentage change in rates in each time-interval. A large majority of the percentages are negative, which indicates declining rates. The broad generalizations to be made about the age-specific death rates correspond to those already made regarding life expectancy. Mortality in most age groups declined substantially between 1950 and 1973 for both sexes. Death rates declined most in the countries where mortality was highest at the beginning of the period, for example, in Chile, Hungary, Poland, Italy and Spain. In general, death rates declined more rapidly before 1960 than after, but the countries still in the process of "catching up" continued to make notable advances after 1960. Percentage reductions in death rates among the age-groups under 45 were commonly greater than those above 45, and this reflects the greater success in managing in-

fectious diseases than in controlling the more intractable diseases of advancing age.

With a few exceptions (the age group 1–4 for Japan in 1950, and two instances each in Argentina and Chile, which may arise from imperfect data), male death rates for each of the years have been consistently higher than female rates in every age group. Such universality of higher male age-specific death rates contrasts with the situation in the less developed countries, where, in various instances, female death rates that are higher than male rates have been documented in a number of age groups (mostly under the age of 50). In addition to their being higher than rates for females in the more developed countries, the male rates of decline have generally not been as rapid as female rates. This is reflected in the divergence of male and female life expectancy discussed above. Moreover, the changes in death rates have not been equivalent in the various age groups. In the USSR, for example, the male death rate for the age group 25–44 was twice the female rate in 1960, but almost three times the female rate in 1970.

Although age-specific death rates generally declined between 1950 and 1973, there are a number of instances in which they increased. Among females death rates increased before 1960 only in the 75-plus age group in four countries (Belgium, France, Hungary and the Federal Republic of Germany). Increases in male rates were larger and also more commonly found after 1960 than before, but in each interval male death rates increased more frequently than female rates. All increases indicated by the data in table 77 occurred in the age groups of 15 years and over. Among the countries represented, only Spain and Chile did not show any increases in death rates, but Japan might be included with them, since the single increase in its data (for males aged 75 years or more between 1950 and 1960) is very small and probably meaningless. Before 1960 all increases occurred in the age groups above 44, whereas after 1960, the increases, while more widespread, were to be found most often in the age group 15–24. Any number of the rate increases and decreases may derive from deficiencies in the data at one or more points of time, but the trend toward levelling-off and probable stabilization of death rates is unmistakable.

The data for Hungarian males provide a good illustration of the way in which age-specific death rates have decreased in some age groups while increasing in others, and also of what at present appear to be limits to a further improvement in mortality. The figures presented in table 5 are for the entire period from 1950 to 1970 and do not illustrate the increase in the male death rate in the age group 25–44, mentioned in the last paragraph, because improvements during the 1950s more than counterbalanced the increase in the death rate during the 1960s. It will be seen from the last column in table 5 that, whereas there were substantial reductions in the death rates for the age groups under 65 during the two decades, there were also increases in the death rates for the two oldest age-groups. Furthermore, it will be noted that the absolute decline in death rates for the age groups below age 25 exceed the age-specific rates in 1970. This fact serves to show that, even if mortality were reduced to zero, the past decreases in the death rates at those earlier ages could no longer be repeated. Thus, even if the annual rates of decrease in death rates can be resumed and sustained, as seems to have been the case since 1970, the absolute changes will diminish and death rates will continue to level off.

TABLE 5. MALE AGE-SPECIFIC DEATH RATES PER 100,000 POPULATION, HUNGARY

Age	*1950*	*1970*	*Absolute difference between rates in 1950 and 1970*
Under 1 year	10 817	4 098	-6 719
1–4	461	115	-346
5–14	135	46	- 89
15–24	280	129	-151
25–44	445	273	-172
45–64	1 571	1 384	-187
65–74	4 903	5 284	+381
75+	13 850	14 010	+160

Differences in urban and rural mortality

Historically, cities have not been very healthy places. Towards the end of the nineteenth century, however, with the spread of public health measures, sanitation and pure-water systems, conditions in cities and towns improved rapidly. In recent years the crude death rates for urban and rural areas have converged to the point that it is now difficult to tell which areas have the lower mortality. The crude rates for rural areas given in table 78 (see annex) tend to be inflated because rural populations usually have older age structures than urban populations. It follows that more refined measures than the crude death rates must be used if the existence of rural-urban differentials in mortality is to be established.

In addition to refined measures, international comparisons must be based on analogous data in order to be valid. This presents major problems. In the first place definitions of "rural" and "urban" often differ substantially from country to country. Secondly, mortality statistics are sometimes classified according to place of death rather than place of residence of the deceased. Finally, the high mobility of modern populations makes it meaningless to classify certain people as urban or rural. In addition to high migration rates and the expansion of variously defined suburbs as areas distinct from rural and urban ones, there are millions of people who live in rural areas but commute to work in urban areas. Because of these problems it is not possible to present truly comparable figures on urban and rural mortality. The figures for each country are based on different urban-rural classifications, so interpretations must remain rather tentative.

Urban and rural life expectancy is provided for seven countries in annex table 79. Despite the differing urban-rural definitions, it is clear from these data that the differences between urban and rural life expectancies are small. The largest difference is found in Romania, where the life expectancy of urban females exceeds that of rural females by 1.6 years. Except in the case of the United States of America, life expectancy for urban fe-

males equals or exceeds that for rural females. Male life expectancy for urban areas, on the other hand, is lower than that for rural areas about as often as it is higher.

Annex table 80 takes a somewhat different approach to the measurement of urban and rural mortality, and provides time series from which trends can be inferred. The table presents index numbers based on age-standardized mortality rates for urban and "other-than-urban" areas for eight countries around each of three dates (1951, 1961 and 1969).[1] The fact that the figures in this table and in annex table 79 are compatible is illustrated by the data for Finland: the slightly lower mortality index for urban females in the last column of annex table 80 is consistent with the slightly higher urban life expectancy shown for females in annex table 79, and vice versa for the male figures.

With the exception of Finland, the countries presented in annex table 80 (which is based on an unpublished WHO study) are different from those in annex table 79, so it is not surprising that the salient features differ. Thus, for every year except the earliest one covered, the number of countries in which female urban mortality index numbers were higher (indicating a lower life expectancy) than the rural ones was the same as the number of countries in which they were lower. The male index, on the other hand, was commonly higher in urban than in rural areas. The exceptions for males were Japan in 1961 and 1968, and Switzerland in 1951 and 1969. The degree to which male mortality in urban areas exceeds that in rural areas has covered a rather wide range, from small differences of 2.4 per cent in Spain in 1951 and 2.9 in Finland in 1964 to large ones of 27.3 per cent in Denmark in 1969 and 33.9 in Italy in 1971. Finally, urban mortality for both sexes increased in relation to rural mortality as often as it decreased.

Given the data presented in annex tables 79 and 80, it seems fair to conclude that there are at present neither clear-cut trends over a period of time nor any general relationships between urban and rural mortality levels. In some cases there are large urban-rural differences, and in other cases the differences are small; urban levels are as often higher than rural ones as they are lower. It remains to be determined whether the differences observed are related to geography, socio-economic status, environmental factors such as pollution, the availability of health services, or other factors.

Socio-economic differentials in mortality

International studies have generally shown mortality levels to be inversely correlated with the socio-economic status of the deceased, regardless of whether status is measured by income, occupation, educational attainment or some other variable. This is a predictable correlation inasmuch as higher status is associated with better living conditions, better nutrition, and greater access to good health care and its more effective utilization. By studying socio-economic differentials in mortality it is possible to identify disadvantaged groups, measure differences between groups and establish goals for reducing mortality among the less advantaged.

There are many problems involved in obtaining mortality rates by socio-economic status for national populations, because there is a dearth of appropriate data, even for countries with good vital statistics. Consequently it is possible to provide here data for only a few countries, and these data refer to different socio-economic groupings in each country. In addition, the requisite data for time-trend analysis are virtually nonexistent. Thus, although decennial data exist for mortality by socio-economic status in England and Wales as far back as 1911, they do not constitute a compatible series for long-term trend analysis because of various changes made in the classification system. The statistical situation is better for studying associations between parental status and mortality during infancy than for studying associations between socio-economic status and levels of mortality during adulthood. A discussion of the latter follows; the former is treated in the section on infant mortality. A treatment of some general correlations is offered in section H of the present chapter.

Mortality rates based on social class or socio-economic status are usually calculated using two sets of data: one for deaths and the other for the population groups at risk. The problems of compatibility between the two can be considerable. For example, if occupation is being used as the indicator of socio-economic status, the numerator for any given occupational group is drawn from death registration statistics. Deceased persons are ordinarily classified loosely in such statistics by usual or habitual occupation, and the information is often provided by someone who may not be well acquainted with the deceased's occupation. The denominator for the rate, on the other hand, is taken from censuses, which classify people by current occupation or most recent employment according to a standard set of rules. Census data are ordinarily provided by a member of each household who can provide more accurate information.

The general correlation between socio-economic status and longevity is illustrated with data for the United States of America and England and Wales (see annex table 81). The figures in that table are standardized mortality ratios calculated from the observed deaths in a given occupational grouping and the number of deaths one would expect to find if the age-specific and sex-specific death rates for the whole country were applicable to that occupational grouping. The occupational groupings for the United States do not correspond exactly to those for England and Wales, both because different criteria were used and because agricultural workers were placed in a separate category in the United States tabulation. It is nevertheless clear that

[1] The index numbers for the urban categories shown for each country (the definitions vary from country to country) are calculated separately for each sex in each country at each date by dividing the urban rates by the "other-than-urban" ones and multiplying the result by 100. The index numbers may be read as percentage variations from "other-than-urban" death rates by subtracting 100. It should be kept in mind that the term "rural", as used in discussing the data from annex table 80, may include some urban areas.

in both sets of data mortality levels decrease (or life expectancies increase) as the degree of skill and professionalism increases. The largest differential in mortality ratios is consistently the one between groups IV and V, that is, between the partly or semiskilled workers and the unskilled labourers. In addition, with the exception of single women in England and Wales, the ratios for groups I (professional) and II (intermediate) nest together and so do those for groups III (skilled) and IV.

The data for England and Wales provide some indication of time trends and of other differentials. Between 1949–1953 and 1959–1963 the range among male mortality ratios widened and there appears to have been a substantial relative deterioration in the mortality ratio for people in the unskilled occupations (group V). Married women were classified according to their husbands' occupation, and the similarity between male and female mortality ratios in each occupational category suggests the broad effects of socio-economic status on mortality levels. Although the United States data do not permit inferences about time trends, they do reveal ethnic differentials in mortality. The differences between the ratios for all males and white males reflect the mortality levels of the non-white population, which is predominantly black. The mortality ratios for the professional and semi-professional occupations (groups I and II) have not been affected by ethnic group differences in mortality because of the very small number of blacks included in these occupations. However, because non-whites have much higher mortality than whites even within the same occupational class, and because the non-whites are primarily concentrated in the unskilled occupations (group V), there the difference between mortality levels is very large.

Another study for the United States of America has shown the existence of large differentials in age-adjusted death rates by income and education as well as for occupation and race. The study was based on the death certificates of some 62,000 persons 25 years of age or older, who died during the four-month period from May to August 1960, which were matched with records of the national census taken in April 1960. The general pattern of mortality differentials by occupation was the same as that outlined above. In addition, the mortality level for people in agricultural occupations was found to be approximately equal to that of people in the "professional, technical and kindred" category: about 20 per cent below average. As one would expect, mortality was inversely related to income. Age-adjusted death rates of non-whites were 34 per cent greater than those of whites for females and 20 per cent greater for males. In each analysis of differentials by occupation, income and race, the range of mortality ratios was found to be much smaller for persons in the age group 65–74 than in the age group 25–64. Income and education were also found to be independently related to mortality. Unlike income, the level of educational attainment remains fixed for most people after the age of about 25, and for this reason it has been suggested that educational differentials provide more reliable indicators of socio-economic status than either income or occupation. Whether or not this is so, it is clear from table 6 that there is a strong inverse relationship between the level of mortality and the amount of education. The mortality ratio for white men with less than five years of school is 64 per cent higher than the ratio for men with at least four years of college. The differential between the same two educational categories is even greater among women (105 per cent).

TABLE 6. MORTALITY RATIOS[a] BY EDUCATIONAL ATTAINMENT, COLOUR AND SEX, PERSONS AGED 25–64 YEARS, UNITED STATES OF AMERICA, MAY–AUGUST 1960

Years of school completed	*White males*	*White females*	*Non-white males*	*Non-white females*
All persons	1.00	1.00	1.00	1.00
0–4 years	1.15	1.60	1.14	1.26
5–7 years	1.14	1.18	.97	1.06
8 years	1.07	1.08		
High school, 1–3 years	1.03	.91		
High school, 4 years	.91	.87	.87	.74
College, 1–3 years	.85	.82		
College, 4 years or more	.70	.78		

Source: Evelyn M. Kitagawa and Philip M. Hauser, *Differential Mortality in the United States: A Study in Socio-Economic Epidemiology* (Cambridge, Massachusetts, Harvard University Press, 1973). Adapted from tables 2.1 and 2.2.

[a] The mortality ratios measure the range of educational differentials in mortality within each colour-sex subgroup of the population. They were derived from the ratios of actual to expected deaths by making the ratio for each subgroup 1.00.

A recent French study provides additional insights into socio-economic differentials in mortality. The study was based on a sample of Frenchmen who were between 30 and 69 years of age at the time of the 1954 census and who died during the succeeding 11-year period. Elementary school teachers and unskilled labourers bracketed the 17 social-status categories used, both with respect to life expectancy and probabilities of dying. At age 35 teachers had an average life expectancy of 41 years whereas labourers could expect to live an average of only 34 years. At the same age, 35, the probability of dying was four times greater for labourers than for teachers. This difference decreased with age so that at age 55 the risk of dying was 2.5 times greater for labourers and at age 75 it was 1.5. Income seemed not to be a determining factor in the mortality differentials. Mortality was lowest among teachers and clergymen, who do not earn the highest incomes, and it may be inferred that a favourable combination of knowledge and life-style supersedes income in determining levels of mortality for at least some groups. Thus the distribution of deaths by cause for the Frenchmen in the sample showed that class differentials were greatest for diseases such as tuberculosis, which can be prevented or cured quickly when detected early enough. The degenerative diseases, on the other hand, were found to affect the people in all 17 social-status categories about equally. In addition to the factors already mentioned, levels of mortality were found to be related to geography, size of community and level of education.[2]

[2] Guy Desplanques, "A 35 ans, les instituteurs ont encore 41 ans à vivre, les manoeuvres 34 ans seulement," *Economie et statistique* (Paris), No. 49 (octobre 1973), p. 3.

The mortality differentials by occupation for Japan in 1970 conformed to the general pattern described above for the non-agricultural population. In table 7, age-standardized death rates and mortality ratios are presented for the economically active male population, grouped in accordance with the major divisions in the International Standard Classification of Occupations. The mortality ratios covered a wide range. The ratio for administrative and managerial workers (56) was 44 per cent below the average, while the ratio for agriculture, fishing and forestry (133) was 33 per cent above the average. The latter occupational grouping is not entirely compatible with the agricultural classification used above in discussing the United States of America, but the contrast is both stark and real. Mortality is generally higher in the rural population of Japan, in part because of very poor living conditions as compared with the rural population, and the selective migration of the healthiest people to urban areas.

TABLE 7. MORTALITY RATES AND RATIOS BY OCCUPATION, ECONOMICALLY ACTIVE MALES, 20–64 YEARS OF AGE, JAPAN, 1970

Occupation	*Age-standardized death rate (per 1,000)*	*Mortality ratio (all occupations = 100)*
All occupations	3.40	100
Professional, technical and related	2.43	71
Administrative and managerial	1.90	56
Clerical and related workers	3.38	99
Sales workers	3.97	117
Service workers	3.19	94
Agriculture, husbandry, fishing and forestry	4.51	133
Production and related workers, transport equipment operators and labourers	3.19	94

Mortality differentials according to marital status

Data for four marital statuses—single, married (living together or separated), widowed, and divorced—are presented in annex table 82. The figures represent mortality ratios for ages 45–54, calculated for each sex by dividing the death rates for each marital status by the death rate for all persons of the same age and sex. The data in annex table 82 are summarized below in table 8 by ranking the ratios for each marital status by sex in each country and summing the number in each category. A ranking of "1" indicates the lowest ratio in a country, and "4" represents the highest for the four marital-status categories.

Predictably, the lowest death rates for both sexes are the ones for married people (with the exception of New Zealand). Widowed people most often have the next lowest death rates. The highest mortality levels are found among single and divorced people. It would seem that among the more developed countries single males are generally better off than divorced males, in so far as mortality ratios are concerned, whereas the opposite is true for women.

The ranges of mortality ratios in annex table 82 are in some cases remarkable. The mortality ratios for single men ranged from 124 in Ireland to 332 in Japan, meaning that in Ireland the death rate for single men was only 24 per cent above the national average while in Japan it was 232 per cent above the national average. It happens that in the age-group being considered Ireland has the largest percentage of single males and Japan has the smallest. Thus there is a tendency for death rates of single males to be low where the single state is very common and presumably includes many healthy individuals. Where the single state is uncommon, the group may contain, as a result of selectivity in marriage, a higher proportion of individuals, whose health is impaired or fragile. The same appears to be true for women. Among the widowed and divorced, mortality ratios for men are invariably higher than for women. In some cases the differences are very large. Whatever the reasons, women appear to weather the widowed and divorced states more successfully than men.

B. THE LESS DEVELOPED COUNTRIES

Vital registration systems, censuses and sample surveys provide an abundance of accurate and nearly complete data for the study of mortality levels and trends in the more developed countries. In recent years, many censuses and sample surveys have been conducted throughout the less developed countries and, as a result, both the quantity and quality of their data have improved substantially. Nevertheless, information for the less developed countries is generally still far less complete and reliable than for the more developed countries. The current status of vital registration systems in the less developed countries is illustrative. Of the 50 countries in Africa, 37 in Asia (excluding Japan) and 26 in Latin America (excluding Temperate South America) with a population of 250,000 or more, fewer than a third (16) of the African, half (19) of the Asian and

TABLE 8. MORTALITY RANKING OF MALES AND FEMALES, 45–54 YEARS OF AGE, BY MARITAL STATUS IN 25 COUNTRIES

(Number of countries in each sex and marital status group by rank order of mortality ratio)

	Married		*Single*		*Widowed*		*Divorced*	
Rank	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
1	25	24	–	–	–	–	–	1
2	–	1	9	5	13	16	3	5
3	–	–	13	8	6	5	6	9
4	–	–	3	12	6	4	12	6

about 85 per cent (22) of the Latin American countries have registration systems. The death statistics are "virtually complete"[3] in only two of the African, five of the Asian and nine of the Latin American countries, which include about 0.3 per cent of the population in Africa, 1.2 per cent of that in the less developed countries of Asia and roughly 10 per cent of that in the less developed countries of Latin America. The complete registration data are from areas that are not typical of their region and the data from systems that do not provide complete coverage cannot be considered representative even for the country in which they are collected. Consequently, it has been necessary to use the available vital statistics, censuses and survey data in combination with various techniques, such as stable population analysis, to produce some estimates of mortality levels and trends for the discussion that follows. Some of the estimation procedures are controversial and the reliability of their results is uncertain. Many of the figures in tables in the annex and in the text are given to one decimal point as in the case of the more developed countries, but in general, the figures for the less developed countries are much more tenuous and they should be taken as rough indicators of levels and trends. In some cases the figures for the less developed countries are intended to do little more than reflect relative differences, and in only a few can they be considered as reliable as similar figures for the more developed countries.

As a matter of convenience in presentation the less developed countries are treated separately by continental divisions: Africa, Asia and Latin America, in that order. However, the continental approach presents a problem in that the spread of mortality characteristics is large within these divisions. Associated with each continent there are countries whose mortality data clearly place them closer to the countries of the more developed areas than to their neighbours. They will be pointed out in the discussion below in so far as is possible.

Of the 27 countries that have been designated the least developed 18 are in Africa, eight are in South Asia and one (Haiti) is in Latin America. As might be expected, the available estimates of mortality indicate that death rates in these countries are generally among the highest and life expectancies are among the lowest in the less developed world. However, there are a few exceptions, which may be attributable to the poor quality of mortality data and the fact that the level of mortality was not among the criteria used in designating the least developed countries. The average life expectancy at birth for the least developed countries in Africa during the early 1970s is estimated to have been approximately 42 years as opposed to a continental average of about 45 years. The average life expectancy for the least developed countries of South Asia is also around 42 years but the average for all of South Asia is about 48 or 49 years.

[3] The United Nations Statistical Office classifies as "virtually complete" those registers of vital statistics where at least 90 per cent of all occurrences are believed to be recorded.

Africa

General levels and trends

Africa has the highest average mortality of all the major geographic areas. Taking the continent as a whole, it is estimated that in 1970–1975 the crude death rate was 19.8 per 1,000 population and life expectancy at birth was about 45 years. The same measures for each of the five regions, ranked from the lowest to the highest life expectancy, are given in table 9. As can be seen, the death rate was lowest and life expectancy highest in the northern and southern regions of the continent. The average life expectancy for the whole continent, which was about 25 years less than the average for the more developed countries, reflects regional averages that cover a range of only 11 years.

This is not to say that mortality levels are relatively uniform throughout Africa. On the contrary, the data and estimates for individual countries (see annex tables 73 and 75) demonstrate that the opposite is the case. In the island states of Mauritius and Réunion, life expectancy at birth for the period 1970–1975 was approximately 65.5 and 63 years, respectively. The latter equalled the lowest life expectancy among the more developed countries during the same period, which was the one for Chile. Thus it may be argued that, as measured by mortality, Mauritius and Réunion are not typical of Africa, and they will not be considered further in this discussion. By excluding them we find that in the early 1970s the crude death rates for African countries ranged from lows of around 14 per 1,000 in Tunisia, Egypt and Southern Rhodesia to highs of about 26 in Angola, Ethiopia and the Upper Volta. Expectations of life at birth for both sexes varied from approximately 37 years in Angola, the Upper Volta and Guinea-Bissau to 51 years or more in all the Northern African countries except for the Sudan. In general, the countries with the lowest life expectancy are the least developed. They have the lowest gross national product *per capita,* the lowest school enrolment ratios, and the lowest numbers of physicians, nurses and hospital beds *per capita.* This has been true throughout the past quarter of a century.

Although current levels of life expectancy remain low in relation to those in the more developed countries, the African nations have made substantial progress during recent decades. The estimated gain in life expectancy (about 9 years) for the whole of Africa, between the early 1950s and the early 1970s, corresponds roughly to that of Eastern and Southern Europe. During that pe-

TABLE 9. CRUDE DEATH RATES AND LIFE EXPECTANCY AT BIRTH, BOTH SEXES, REGIONS OF AFRICA, 1970–1975

	Crude death rate per 1,000 population	*Life expectancy in years*
Africa	19.8	45.0
Western Africa	23.0	40.9
Middle Africa	21.7	41.9
Eastern Africa	20.7	43.8
Southern Africa	16.2	50.6
Northern Africa	15.2	52.0

riod the crude death rate for Africa seems to have declined by about 25 per cent, from 26.7 per 1,000 to 19.8. The estimated regional increases in longevity varied from about 7 years in Middle Africa to 10 years in Northern Africa. The regional differences in improvement of life expectancy did not change the absolute interregional range, which was 11 years at both the beginning and the end of the period. Throughout the period Western Africa had the lowest life expectancy.

The recent trends in life expectancy in Africa cannot be established definitively, but the available estimates indicate that the rate of improvement in longevity has slackened during the last decade. A recent study of Egypt also illustrates such trends. Using corrected and adjusted data from censuses and the vital registration system, the authors constructed a series of abridged life tables centred on the years 1940, 1950, 1960 and 1965. Annual percentage rates of improvement in life expectancy at birth and at age 20 both show the slackening mentioned above and indicate that, except for females during the most recent interval, life expectancy at birth has increased more rapidly than the expectation of life at age 20 (see table 10).

TABLE 10. ANNUAL PERCENTAGE RATES OF IMPROVEMENT IN LIFE EXPECTANCY AT BIRTH (AGE 0) AND AT AGE 20, EGYPT, 1940–1965

	Males		*Females*	
Period	*Age 0*	*Age 20*	*Age 0*	*Age 20*
1940–1950	2.8	0.9	2.5	1.0
1950–1960	1.8	0.7	1.8	0.8
1960–1965	0.4	0.3	0.3	0.9

Source: Calculated from abridged life tables in Vasilios G. Valaoras and others, *Population Analysis of Egypt, 1935–1970 (with Special Reference to Mortality)* Cairo Demographic Centre, Occasional Paper No. 1 (Cairo, 1972), pp. 50–53.

In many cases it can be assumed that a slowdown such as is illustrated in the Egyptian data reflects temporary setbacks, perhaps due to droughts, famines, and related social, economic and political dislocations. In others it may be the consequence of persistent geographic impediments to transportation and communication. In addition, the rapid population growth that is characteristic of much of Africa undoubtedly interferes with the care of infants and children. For economic as well as technical reasons, medical facilities and public health services are still weak and often confined to limited geographical areas. The development of drug-resistant strains of diseases related to the largely indiscriminate use of antibiotic therapy has also had the effect of slowing mortality decline.

Mortality differentials

Age and sex differentials in mortality

Data for mortality by age and sex in African countries are scarce, and it is not possible to provide either reliable data or generalizations for sub-Saharan Africa. Age-specific death rates are given in annex table 83. For three Northern African countries, however, these may be considered indicative if not representative of the situation in that region. The irregularities evident in the age patterns of death rates in annex table 83 reflect errors in age-reporting and missed events. The rates nevertheless describe the typical U-shaped curve of high-mortality countries, which was discussed in the section on the more developed countries and is illustrated in figure I. As in other less developed countries, the rates for Algeria, Egypt and Tunisia are higher at all ages than in the more developed countries, and the greatest differences occur during infancy and early childhood.

In the more developed countries, male mortality rates almost invariably exceed those of females at every age, but the same does not seem to be true in Northern Africa. The data for Algeria and Tunisia show higher female than male death rates in a number of age groups of the reproductive period. In addition, the Tunisian figures exhibit excessive female mortality in early childhood and in the two oldest age groups. The Egyptian data, on the other hand, show higher female than male mortality only under the age of 5 years. It has been suggested that such patterns of higher female than male death rates may be by-products of frequent childbearing and cultural practices, which may favour the survival of males over females in certain age groups.

Mortality by urban and rural residence

The meagre data available for mortality differentials according to urban and rural residence indicate that in recent years mortality rates in rural areas have been higher than in urban areas. Rural mortality rates during infancy and early childhood in Senegal, for example, have been estimated at from three to five times the rates found in Dakar. Data for Algeria suggest that in 1970 the urban mortality level, for all ages, was about 15 per cent lower than the rural level. For the age group under 40 mortality was about 40 per cent lower in the urban areas than in rural Algeria, and the differentials during infancy and early childhood may have been greater. Such differentials stand in stark contrast to the historical experience of the more developed countries as well as, to a lesser degree, the present situation in those countries.

The relatively low levels of urban mortality in Africa have been explained in several ways. Modern medical and other health sustaining facilities are mostly situated in the cities, and water supplies are usually better in cities than in the countryside. In addition, migration to the cities is supposedly selective and draws from the healthiest members of a population. Urban residents, who work for wages and are usually paid better than workers elsewhere, are also assumed to be assured of more regular food supplies and consequently to be more healthy than people who live in rural areas.

Socio-economic differentials in mortality

Data drawn from various surveys conducted in sub-Saharan Africa show the expected association between socio-economic class and mortality. A multi-round demographic survey conducted in Algeria around 1970, however, provides the best example of socio-economic differentials in Africa. The Algerian pattern is akin to

the one in Japan in that, among the employed, mortality was found to be highest in the agricultural sector and, within every category, higher in rural than in urban areas. Outside the agricultural sector the pattern of socio-economic differentials was the same as the one described for the more developed countries: life expectancy increased directly with socio-economic status whether socio-economic status was measured by education or occupation. Thus probabilities of dying were found to be highest among the illiterate, the unskilled and the unemployed.[4] High correlations are also found between either life expectancy at birth or the crude death rate and such variables as the birth rate, calorie consumption *per capita,* the proportion of a population in urban areas, the ratio of physicians to population, the proportion of government expenditure allocated to health, and the gross domestic product per member of the labour force. The correlations found for 1970, using data for 25 more developed and 74 less developed countries (including countries from each Africa, Asia and Latin America), which include nearly two thirds of the world population, are discussed briefly in section H of the present chapter.

Asia and Oceania (excluding Japan, Australia and New Zealand)

General levels and trends

The absolute differences between the highest and lowest crude death rates and life expectancy at birth were somewhat greater in Asia and Oceania than in Africa. The two measures as estimated for the various regions in the early 1970s are given in table 11.

TABLE 11. CRUDE DEATH RATES AND LIFE EXPECTANCY AT BIRTH, BOTH SEXES, REGIONS OF ASIA AND OCEANIA, 1970–1975

	Crude death rate per 1,000 population	*Life expectancy in years*
South Asia	16.7	48.5
Middle South Asia	17.0	48.0
Eastern South Asia	15.4	50.6
Western South Asia	14.3	53.8
East Asia (excluding Japan)	—	—
China	10.3	61.6
Other East Asia	8.7	61.1
Oceania	—	—
Melanesia	16.6	48.4
Micronesia-Polynesia	7.4	62.8

In addition to the fact that the range in crude death rates was greater among these regions than among the regions of Africa, the rates were generally lower in Asia and Oceania than in Africa, and the life expectancies were higher. Life expectancy for both China and Micronesia-Polynesia was approximately 10 years greater than the highest regional figure for Africa—the one for Northern Africa.

Fertility levels, and consequently age structures, have been less uniform among the countries of Asia and Oceania than among those of Africa. As a result, crude death rates for Asia and Oceania have somewhat less comparative value. There is, however, a relatively high degree of homogeneity within each region (see annex table 73).[5] In addition, a rather substantial, and real, margin in both crude death rates and life expectancy separates Micronesia-Polynesia and East Asia from the other Asian and Oceanian regions.

As was true in Africa, the life expectancies for individual countries in Asia and Oceania covered a greater range than did the regional averages (see annex table 75). The lowest life expectancies—estimated at between 35 and 40 years—were those for Bangladesh, East Timor and Afghanistan. At the other extreme, the life expectancies of about 70 years for Fiji, Hong Kong, Singapore, Cyprus and Israel were atypically high. The 30-year spread between the highest and lowest life expectancies in a general way reflects the great differences in levels of development among the countries of Asia and Oceania.

Between the early 1950s (1950–1955) and the early 1970s (1970–1975) the estimated increases in longevity for the regions of Asia and Océania were among the largest in the world. With the exceptions of Western South Asia and Micronesia-Polynesia, the absolute increases in life expectancy during the period were larger for the regions of Asia and Oceania than for the regions of Africa and all but the USSR among the more developed regions. Again, except for the same two regions, the percentage increases in longevity for the regions of Asia and Oceania exceeded those for all the regions of Latin America. Within the combined area of Asia and Oceania, the largest regional gain in life expectancy was apparently that of China, and if the estimates are approximately correct, the gain in China surpassed that of every other region in the world by a substantial margin in both absolute and relative terms. During the same period, Melanesia and the region identified as "Other East Asia" achieved increases in life expectancy of some 12–13 years. The increases for Micronesia-Polynesia and the three regions of South Asia were on the order of 9 to 10 years. In spite of the differences in regional increases in life expectancy, the only change in rank order for the combined area of Asia and Oceania was that China and Other East Asia traded places. At the beginning of the period China had the third highest life expectancy and at the end it had the second highest. The range of estimated life expectancies for the regions, which was 18 years during the early 1950s, had shrunk to about 15 years by the early 1970s.

The net result of these changes is that a rather large gap seems to be developing between the regional life expectancies of Micronesia-Polynesia, China and Other East Asia, on the one hand, and those of the South Asia regions and Melanesia on the other. In the early 1950s, Micronesia-Polynesia stood alone, with a life expectancy

[4] Algeria, Commissariat national aux recensements et enquêtes statistiques, *Etude statistique nationale de la population,* Series 2, No. 7, *Résultats de l'enquête démographique,* vol. IV, *Mortalité* (Oran, 1975).

[5] In the case of the Western South Asia region, the degree of homogeneity can be increased substantially by separating the countries that are members of the Economic Commission for Western Asia (ECWA). This commission includes all of the region's countries except Cyprus, Israel and Turkey, each of which is in one way or another atypical.

about six years greater than the highest figure for the other regions. By the early 1970s, Micronesia-Polynesia, China and the Other East Asia region all had estimated life expectancies exceeding 60 years, and a gap of over seven years separated them from the remaining regions.

The comments made with respect to the trends in Africa are equally applicable to Asia and Oceania. There is a rough correspondence between the level of development in a country or region and the average life expectancy of its population. The initial improvements in life expectancy, which are relatively inexpensive and easily accomplished, come more swiftly than those that depend upon various development factors. Thus, in general, each increase in life expectancy is more difficult to achieve than the previous one of similar magnitude, and the rate of progress in lengthening life often slackens where significant impediments to development exist.

India and Sri Lanka offer contrasting examples of how life expectancy has increased. Sri Lanka's experience also illustrates the relative ease with which improvements can be obtained within an island population even when the population density exceeds India's. Malaria was endemic in Sri Lanka until recently. During epidemics the crude death rate may have reached 38 per 1,000, but generally, from 1900 to 1945, it fluctuated between 20 and 30. In 1946 it was about 20.2. Thereafter an aggressive malaria eradication programme, coupled with improvements in health facilities, the use of vaccines and antibiotics and the expansion of free education, sanitation and other development programmes, produced spectacular results. The death rate was brought down to 12.6 by 1950, a decline of 37 per cent in only four years. By 1969 it had been reduced by another 35 per cent, to 8.1. Life expectancy increased correspondingly, from about 46 years in 1945–1947 to 57 in 1952 and about 67 in 1970.[6]

The developmental problems in India have been of a much greater magnitude, and the progress in increasing life expectancy has been less impressive. India's crude death rate is estimated to have exceeded 40 per 1,000 in the early twentieth century, when the Government calculated that life expectancies at birth for both sexes varied roughly between 20 and 25 years. By the decade 1941–1950 the crude death rate may have dropped to about 27, and by 1961–1970 it is estimated to have declined further, to around 19.[7] The net decline in the death rate over the past half century implies an annual average rate of decline of approximately 1.8 per cent, but of course the rate of decline was not constant throughout the period. Since the early 1950s, when it was about 39 for both sexes, India's life expectancy has increased at an estimated average rate of about 1.2 per cent a year, but the rate of increase, as calculated from the life expectancies in annex table 75, has declined gradually during the period. The rate of improvement between quinquennial periods has apparently declined by about one third—from about 1.5 per cent per annum in the early 1950s to barely 1.0 per cent in the early 1970s, when life expectancy is estimated to have reached approximately 50 years.

Mortality differentials

Age and sex differentials in mortality

The discussion of age, sex and other differentials in mortality is limited to Asia because the data for the Areas of Oceania outside Australia and New Zealand are not sufficiently reliable. The data for Asian countries presented in annex table 83 are not altogether reliable, but their quality is probably equivalent to that of the data for African countries. The mortality data by age and sex for Asia include both a broader geographic distribution and a greater spread of life expectancies than do the data for Africa, but in neither case are data included from the countries with the lowest life expectancies.

Other than the infant mortality rates for Thailand, which are too low to be credible, the figures given in annex table 83 conform to the levels and patterns of age-specific death rates one would expect given the estimated life expectancies. They also exhibit some interesting characteristics. The infant death rates for Turkey are unusually high for the life expectancies involved, and the rates for other ages are rather low. These phenomena have been noted and commented upon frequently but they remain essentially unexplained. The death rates for rural females in India are higher than the corresponding male rates in all but one age group under 35 years of age. Higher female than male death rates have also been noted in other countries. They were noted above in the data for Algeria, Egypt and Tunisia, and can be found in data from Afghanistan, Bangladesh, Pakistan and Sri Lanka. As mentioned in the section on Africa, the phenomenon of higher female than male mortality might be attributable to frequent childbearing and the preferential treatment of males. The pattern of change in Sri Lanka, however, indicates that more important factors are the general health and nutritional well-being of the population. At the end of the Second World War, male life expectancy at birth in Sri Lanka was about 47 years. This was over two years greater than female life expectancy. By 1967, when male life expectancy had risen to 65 years, the situation was reversed, and female life expectancy exceeded male life expectancy by just over two years. The pattern of this change by age groups is revealing (see table 12).

In the first five years after the Second World War both sexes shared equally in the improvements (life expectancy at birth for each increased by about 10 years), but all age groups did not share equally. The greatest declines in mortality occurred in the age groups between 10 and 25, and the least occurred among children under five. Thus infant and early childhood mortality rates remained high—indeed, in relative terms, increased—as adult rates dropped rapidly. Between 1950 and 1968, life expectancy at birth for the two sexes com-

[6] Sri Lanka, Department of Census and Statistics, *The Population of Sri Lanka*, CICRED Monograph Series, World Population Year 1974 (Colombo, 1974).

[7] India, Ministry of Home Affairs, Office of the Registrar General and Census Commissioner, *The Population of India*, CICRED Monograph Series, World Population Year 1974 (New Delhi, 1974).

TABLE 12. AGE-SPECIFIC DEATH RATES AND THEIR DECLINE, SRI LANKA

Age	Age-specific death rates			Annual decline (percentage)	
	1945	1950	1968	1945–1950	1950–1968
Males					
All ages	21.4	12.2	8.5	11.2	2.0
0–4	61.5	46.9	15.7	5.4	6.1
5–9	7.7	4.1	1.9	12.6	4.3
10–14	3.6	1.4	1.3	18.9	0.4
15–19	6.5	1.9	1.6	24.6	1.0
20–24	7.5	2.9	2.2	19.0	1.5
25–34	8.1	3.5	2.4	16.8	2.1
35–44	13.1	5.0	4.0	19.3	1.2
45–54	23.4	9.7	8.4	17.6	0.8
55 and over	78.2	42.3	42.7	12.3	0.1
Females					
All ages	22.7	13.0	7.3	11.1	3.2
0–4	63.0	44.4	14.2	7.0	6.3
5–9	9.0	4.7	1.9	13.0	5.0
10–14	4.5	1.7	1.0	19.5	2.9
15–19	7.3	2.5	1.6	21.4	2.5
20–24	10.8	4.4	2.0	18.0	4.4
25–34	11.3	5.5	2.3	14.4	4.8
35–44	14.4	6.1	3.4	17.2	3.2
45–54	17.2	8.3	5.7	14.6	2.1
55 and over	90.2	45.6	41.5	13.6	0.5

Source: Sri Lanka, Department of Census and Statistics, *The Population of Sri Lanka*, CICRED Series, World Population Year 1974 (Colombo, 1974).

bined increased by another ten years, but the female expectancy increased by about four years more than the male. Female death rates declined more rapidly than male rates in all age groups, and the most rapid declines for each sex were in the age groups under 10. It will be noted that in 1945, in every age group except 45–54, female death rates exceeded those of males. In 1950 this was still the case with the added exception of children under five, but by 1968 male death rates equalled or exceeded those of females in every age group.

Mortality by urban and rural residence

The scattered evidence for Asian differentials in urban and rural mortality is much like that for Africa and also points to higher mortality in rural than in urban areas. Infant mortality rates in Iran were recently estimated at 110 per 1,000 live births for rural areas and 75 for urban. The rates for Indonesia were estimated at 141 for rural and 112 for urban areas during the 1960s, when life expectancy for both sexes was placed at 46 and 51 years for each type of area respectively. Rural and urban life expectancies for Turkey in 1967 are estimated to have been about 52 and 61 years respectively. Urban mortality is assumed to be lower than rural mortality in India because lower crude death rates have been found in urban areas and because most of the sanitary and health facilities are found in cities. The crude death rates are not reliable indicators of differentials, but the other factors may be. The Indian Ministry of Home Affairs has estimated that by the early 1970s about 80 per cent of the hospital beds and 20 per cent of the physicians were located in urban areas. The Ministry had also estimated that 85 per cent of the urban population had piped water whereas the 116,000 villages containing over 60 million people lacked elementary modern water supply systems. Piped water, of course, is not necessarily potable. Similarly, proper sewerage does not exist in the rural areas or in most small and medium towns, but that does not imply that urban sewage disposal systems are adequate.

Socio-economic differentials in mortality

There are no studies of socio-economic differentials in mortality for Asian countries which are comparable in quality to the studies cited in the sections on the more developed countries and Africa (see, however, section H of the present chapter). *The Mysore Population Study* probably still offers the best data, and they were collected in Mysore between December 1951 and September 1952. Because of deficiencies in the data, the authors were unable to establish clear-cut differentials, but they concluded that the weight of evidence "points to better health and survivorship for the groups of relatively high than for those of low economic and social status, both in the urban and the rural areas".[8]

Latin America

General levels and trends

In the early 1970s, Latin America had the lowest crude death rate and the highest average life expectancy of the continental divisions that make up the less developed regions. There was also less difference between regional death rates and life expectancies in Latin America than in either Africa or Asia and Oceania. Current estimates of the two measures of mortality for the less developed regions of Latin America in the early 1970s are given in table 13.

TABLE 13. CRUDE DEATH RATES AND LIFE EXPECTANCY AT BIRTH, BOTH SEXES, LESS DEVELOPED REGIONS OF LATIN AMERICA, 1970–1975

	Crude death rate per 1,000 population	Life expectancy in years
Middle America	9.4	61.5
Tropical South America	9.2	60.5
Caribbean	9.1	63.1

Life expectancy in the Latin American regions equalled or exceeded that in all the other less developed regions with the exception of Micronesia-Polynesia and the two regions of East Asia. The figure for the Tropical South America region, which was the lowest in Latin America, was about 18 years greater than the estimated life expectancy for Northern Africa, which was the highest regional figure for Africa.

In the early 1970s crude death rates for Latin American countries varied from about 6 to 18 per 1,000 population (see annex table 73). The highest rates occurred in the countries where mortality was highest and the lowest were found where mortality was lowest, but because age structures differ significantly within Latin America the crude rates have very limited analytical

[8] *The Mysore Population Study: A Report of a Field Survey Carried out in Selected Areas of Mysore State, India*, Population Studies, No. 34 (United Nations publication, Sales No. E.61.XIII.3), p. 80.

value beyond the comparison of extreme examples.

The range of life expectancy for Latin American countries in the early 1970s was about 25 years (see annex table 75). The lowest estimated life expectancy for both sexes was Bolivia's (about 47 years), which was about 10 years higher than the lowest life expectancy found in either Africa or Asia and Oceania. The highest life expectancy in Latin America was that of Puerto Rico (some 72 years). Unlike the highest levels of life expectancy found in Africa, Asia and Oceania, this one cannot be considered atypical. A number of Caribbean countries and Guyana, Suriname and Venezuela in Tropical South America have estimated life expectancy between approximately 65 and 70 years. Considering the general reliability of the country estimates, one may conclude that, if the atypical African figures are excluded, life expectancy for all Latin American countries except Bolivia and Haiti equalled or exceeded the highest estimates for African countries, namely, the estimates for Northern Africa. This fact, like the variation in mortality levels from country to country, indicates the existence of different levels of development, but environmental or other differences may be equally important explanatory variables.

The absolute increases in regional life expectancy achieved in Latin America between the early 1950s (1950–1955) and the early 1970s (1970–1975) ranged from about 9 years in Tropical South America to 12 years in Middle America. As measured by percentages, the regional increases in Latin America were among the lowest of the less developed regions. The different regional gains in longevity had the effect of reversing the ranking of Middle America and Tropical South America, but more importantly they nearly halved the range of regional figures. At the beginning of the period the high and low regional life expectancies differed by about 11 years. By the early 1970s the difference was only six years.

As in the cases of Africa, Asia and Oceania, it is not possible to establish definite trends in mortality for the Latin American regions. The estimates for life expectancy in table 75 (see annex) indicate that the rates of increase in longevity have decelerated since the early 1950s, but the estimates are not all equally reliable, so generalization is hazardous. The indicated trend is what one would expect for the regions and countries that have attained high life expectancy, and it may be assumed that deceleration is in fact occurring in the Caribbean even if the calculated rates are not reliable. The same cannot be said for the other two less developed regions in Latin America.

Mortality differentials

Age and sex differentials in mortality

Age-specific death rates for nine Latin American countries are presented in annex table 83. The rates come from data officially listed as 90 per cent complete or more and they may be considered generally reliable. Life expectancy in seven of the countries represented in the table is about 63 years or more. El Salvador's life expectancy is estimated at approximately 59 years and that of Guatemala is around 54 years. Guatemala has one of the lowest levels of life expectancy in Latin America. Thus, although the death rates given in annex table 83 are heavily weighted in favour of the countries where mortality is lowest, they cover most of the range of mortality levels. The Latin American rates embrace about half of the area between the J-shaped and the U-shaped curve in figure I. The curves for the highest mortality areas may be more U-shaped than J-shaped, but the predominant pattern of age-specific death rates in Latin America is closer to the J-shape than is the pattern for either Africa or Asia and Oceania. On the other hand, the Latin American pattern is more U-shaped than that of the more developed regions. Above all else this reflects the infant mortality rates, which in Latin America are generally lower than in the rest of the less developed regions but generally higher than in the more developed regions.

The male death rates in annex table 83 are in most cases higher than the female rates for each age group. The exceptions occur almost exclusively in the age groups between 1 and 14 years of age. In all or nearly all of the instances where female death rates exceed male rates the differences are very small and may be considered to be anomalies arising from imperfect data. Thus, even if maternal mortality is relatively high in Latin America (particularly as compared to the more developed regions) it is seldom so high that female death rates during the reproductive years either equal or exceed male rates. The net result of the known and estimated age-sex differentials is that female life expectancy seems consistently to exceed male life expectancy throughout Latin America.

Mortality by urban and rural residence

Recent studies have shown that urban mortality is generally lower than rural mortality in Latin America, and when rural mortality has been found to be lower it has been attributed to deficiencies in the data. Little is known about the true magnitude of urban-rural differentials in those places where they seem to exist. Life tables constructed for Panama in 1970 and Honduras in 1971–1972 exhibit contrasting patterns of urban-rural differences by age but similar over-all differences. Urban life expectancy at birth and other selected ages (1, 20, 50 and 70) was in every case more than 10 per cent higher than rural life expectancy. In Panama the greatest difference (26 per cent) existed at age 70, whereas in Honduras it occurred at birth (23 per cent).[9] However, whether such a contrast is real cannot be determined at present. Whatever the real levels and patterns of urban-rural differentials might be, the discovery and assumption of lower urban mortality in Latin America have been explained in the same way as similar differentials in other less developed regions.

[9] Antonio Ortega and Manuel Rincón, *Encuesta Demográfica Nacional de Honduras*, fascicle IV, *Mortalidad*, CELADE Series A, No. 129 (Santiago, 1973), p. 37.

Socio-economic differentials in mortality

Socio-economic differentials in mortality have been studied more thoroughly in Latin America than in either Africa or Asia and Oceania. As elsewhere mortality in Latin America has been found to be lowest among the most favoured groups. A Pan American Health Organization (PAHO) study carried out in the period 1968–1972 used the occupations of fathers and educational attainments of mothers as indicators of socio-economic differentials in 13 Latin American study areas.[10] The usual inverse relationship between levels of mortality and socio-economic status was evident in data for deaths among children in three age groups under 5, but the correlation was most nearly perfect for deaths during the neonatal period (the first month of life). In the Honduras study cited above, socio-economic differentials were treated at all ages in terms of three broad socio-economic categories. The lowest death rate for each age group was the one for the highest category, but the highest rates were not always associated with the lowest socio-economic category: the middle category had the highest death rates in the age groups 45–64 and 65 and above. The pattern of differences between extreme rates within age groups is especially interesting. The highest rate in the age group 15–44 was only 23 per cent greater than the lowest, but in the age group 1–4 the difference was 238 per cent. The latter vividly illustrates the combined effects of malnutrition and infectious and parasitic diseases during early childhood. During infancy, when natural immunities and feeding practices do more to compensate for differences in socio-economic statuses, death rates do not vary as much. In the Honduran data, the highest rate was a third higher than the lowest during infancy. In the age group 5–14 the difference between extreme rates was 129 per cent and in the age groups above 44 the differences were less than 45 per cent. Life expectancies at birth for the three socio-economic categories were, from highest to lowest, 67, 51 and 48 years (see also section H of the present chapter).

C. Morbidity and causes of death*

Risks of dying vary with both disease and circumstance, as well as age. A healthy person with access to proper medical care might survive with few or no ill effects any number of diseases that could be fatal, chronic or permanently disabling to someone who was less healthy or did not have access to the needed medical care. Thus, a thorough assessment of the health status of a population should take into account levels of morbidity and disability and the circumstances surrounding them, as well as levels of mortality. Morbidity and disability are not treated here, but the World Health Organization (WHO) is preparing a study on the subject, with special reference to the working-age population; the study is to be published shortly.

Data on causes of death leave much to be desired. The distribution of deaths by cause is known with some precision only for those countries that have well-organized vital registration systems and a high proportion of medically certified deaths. These criteria are met mainly by the countries of Europe and Northern America, Australia, New Zealand and Japan. Cause-of-death data, possibly less accurate, are also available for a few countries in the less developed regions, but most of these countries are atypical and only the most fragmentary evidence exists for the majority of the populations in Africa, Asia and Latin America. In addition to the small quantity of data available, there are significant variations in the quality of cause-of-death data. Qualitative variations arise from differing and changing diagnostic practices, disease classifications and reporting procedures. These variations make both international comparisons and national time-trend analyses risky. The problems of comparability are indicated by the percentages of all deaths that are placed in the category "All other causes", which includes unspecified, ill-defined and unknown causes of death as well as causes not elsewhere classified. The percentages have ranged from 10 to 40 per cent of all deaths among the more developed and from 25 to almost 70 per cent among the less developed countries for which WHO has published data on the 10 leading causes of death during the past two decades. "All other causes" is never listed among the 10 leading causes of death, but if it were it would always rank first or second among the less developed and between first and fourth among the more developed countries.

Despite their shortcomings, data on causes of death are revealing. In annex table 84 data for the 10 leading causes of death at all ages (exclusive of "All other causes") are summarized for 23 more developed and four less developed countries, which provided data for 1954–1956, 1960 and 1970. Data from eight more developed and nine less developed countries were not included in the table because they were not available for all three dates, but they exhibited the same pattern as the data summarized in the table. The 10 leading causes of death in the 27 countries represented in table 84 embraced a total of 26 different disease categories. The data have been summarized by tabulating the number of countries that included each disease among the 10 leading causes of death at each date. All 27 countries listed five disease categories among the 10 leading causes of death in 1970. These were heart disease, malignant neoplasms, vascular lesions affecting the central nervous system, influenza and pneumonia, and accidents. All but the third category were also listed by every country in 1954–1956 and 1960. (The third was listed by 26 of the 27 countries.) Tuberculosis, bronchitis, and diarrhoeal diseases were almost as frequently listed among the 10 leading causes of death among the less developed countries. Among the more developed countries, the categories including birth injuries, nephritis and tuberculosis were much less frequently listed

[10] Ruth Rice Puffer and Carlos V. Serrano, *Patterns of Mortality in Childhood: Report of the Inter-American Investigation of Mortality in Childhood*, Scientific Publication No. 262 (Washington, D.C., Pan American Health Organization/Pan American Sanitary Bureau/Regional Office of the World Health Organization, 1973).

* Prepared in collaboration with the World Health Organization.

among the 10 leading causes of death in 1970 than earlier, whereas bronchitis, cirrhosis of the liver, diabetes mellitus and suicide and self-inflicted injuries were much more frequently listed.

In general, the degenerative diseases (mainly cardiovascular diseases and cancers) have been much more important as causes of death in the more developed than in the less developed countries, where infectious and parasitic diseases are more prominent. One reason for this lies in the different age structures of the two types of regions. The degenerative diseases are much more common among older people, and the more developed countries have significantly older age structures (hence proportionately more older people) than the less developed countries. Another reason is that vigorous public health programmes in the more developed regions have done much to reduce or eliminate the threats posed by many infectious and parasitic diseases. These diseases have a disproportionately large effect among the younger age groups, which make up a larger percentage of the populations of less developed than more developed countries. Moreover, infectious and parasitic diseases endanger most those individuals who are under-nourished or malnourished, and nutritional deficiencies are prevalent among the less developed countries.

The WHO study on morbidity and disability mentioned above will treat the special problems of mortality in the working-age population. Causes of death during the first five years of life and during the reproductive period with respect to maternal mortality will be discussed in the sections that follow. The treatment of causes of death beyond the working ages is limited to what has already been said. Causes of death between the ages of 5 and 15, when the risks of dying are at their lowest, have been very inadequately studied and are not discussed in this chapter, except to say that accidents appear to be the most serious threat to life.

D. Perinatal mortality*

Perinatal mortality is a term used to describe the combination of late foetal and early neonatal death, that is, the death of foetuses in the twenty-eighth week of gestation or thereafter and of infants during the first week of life. The term provides a means of obviating some, if not all, definitional problems. For example, it is not always clear whether a death has occurred before or after birth. Moreover, birth itself is a process, and both the official definition of the time during the process when the event legally occurs and the clinical criteria actually applied in defining a live birth differ from place to place as well as over time. The concept of perinatal mortality also draws attention to the relative similarity of causes of late foetal and early neonatal deaths and to the public health measures required to reduce both. There are of course causes of death unique to each category, such as neonatal tetanus, and a single list of causes has yet to be firmly established for the two categories. Nevertheless, because of its epidemiological convenience, the concept of perinatal mortality has become widely accepted and used. However, very limited time series of data are currently available.

It has been estimated that in some more developed countries the number of perinatal deaths may equal or exceed the number of deaths that occur during the next 40 years of life, thereby comprising a major proportion of all mortality up to middle age. Moreover, perinatal mortality constitutes an important public health problem, since much of it stems from the quality of the prenatal and intranatal environment (the environment before and during birth). The quality of that environment in turn affects the quality and duration of postnatal life. The concept of perinatal mortality has helped to focus attention on these facts, particularly in those areas of the world where the once common causes of infant and childhood death have been brought substantially under control.

It is well established that, of the two broad components of infant mortality, the neonatal component (deaths during the first four weeks or first month of life) has generally improved less than the post-neonatal component (deaths during the remainder of the first year of life). There has been even less improvement within the perinatal period, and the least has occurred in the late foetal period. Thus, although historical data show that the death rates have improved fairly consistently during the 30 or 40 years since late foetal deaths have been generally registrable, they have improved less rapidly than infant mortality rates in the countries for which there are data.

The requisite data are too few and unreliable to permit a global analysis of perinatal levels and trends. However, some general features can be ascertained from available data, even though that information is heavily biased in favour of the most developed countries. National perinatal mortality rates reported over the past decade have varied from 14 to 70 per 1,000 births. Studies done for a number of countries with relatively low national rates have shown that intranational rates may equal or exceed the range of the national rates just given. Perinatal death rates appear to be closely correlated with the social and economic status of the mother, and in some cases the perinatal mortality rates for deprived groups are almost 10 times those for favoured groups.

Some recent national perinatal death rates are given in annex table 85. These data are confined to more developed countries, among which the perinatal death rates in 1972 varied from a low of 14.4 per 1,000 births in Sweden to a high of 35.2 in Portugal. The time trend data in annex table 86 show that rates during the early 1950s (1950–1954) ranged from a low of 23.6 per 1,000 births in Norway to a high of 49.3 in Italy. The pattern of change in perinatal mortality rates, based on data for 27 of the countries and areas listed in table 86, is illustrated for the period from 1955 to 1972 by the matrix in table 14.

* Prepared in collaboration with the World Health Organization.

TABLE 14. PATTERN OF DECLINE OF THE PERINATAL DEATH RATE, 27 MORE DEVELOPED COUNTRIES, 1955–1959 TO 1972

Average perinatal death rate 1955–1959	*Number of countries*	*Perinatal death rate per 1 000 births in 1972*				
		Under 20	*20–25*	*25–30 (number of countries)*	*30–35*	*35–40*
Under 25	3	1	1	1	—	—
25–30	8	5	2	1	—	—
30–35	6	3	3	—	—	—
35–40	6	—	4	1	1	—
40–45	4	2	—	1	—	1
Total number of countries	27	11	10	4	1	1

In addition to the general decline in perinatal death rates, the distribution in the matrix reflects the convergence of rates for the countries represented. Thus, whereas only three of the 27 countries had perinatal death rates under 25 per 1,000 births in the period 1955–1959, the rates for 21 countries were under 25 by 1972. Moreover, the average of the 21 lowest rates in 1972 was substantially below the lowest individual rate reported for the period 1955–1959.

Perinatal mortality rates have declined steadily since 1950 in most of the countries, and in a few they have declined more rapidly in recent years. As mentioned above, the decline has been more marked for early neonatal than for late foetal deaths. The continued decline of perinatal mortality rates, even in the most favoured nations, runs contrary to the prediction of many authorities that these countries, at least, had approached the point beyond which substantial improvements in perinatal death rates would not occur until there were major new developments in medical knowledge. Although prenatal diagnostic techniques cannot be said to have undergone major changes, there have been some improvements since 1950. The improved possibilities for early diagnosis of foetal abnormalities, in combination with increasingly permissive social attitudes towards the termination of pregnancies when such abnormalities are diagnosed, may help to account for some of the decline in perinatal mortality. It is more likely, however, that the continued decline in perinatal death rates is related to changing patterns of reproductive behaviour and to the general improvement and expanded availability of health services.

The present state of knowledge regarding causes of death in the perinatal period is so poor that neither relative levels nor patterns can be inferred. Preliminary results from a recent WHO-sponsored study in eight countries reveal large differences among the countries in causes of perinatal death. These differences almost certainly reflect substantial differences in national data-processing procedures. Final results from the study are due in 1977, and they may clarify which differences are real and which arise from differing procedures.

E. INFANT MORTALITY*

During the past two decades important progress has been made in reducing infant mortality throughout the world. Relative gains have been greatest in the more developed countries, where infant death rates in 1950 were already so low that infant mortality had a very minor effect on life expectancy at birth. Absolute reductions in infant mortality have generally been largest in Africa, Asia and Latin America, but infant mortality is still high in many countries of those areas. Thus great differences remain among national levels of infant mortality.

Estimates of infant mortality for many areas must be given in round numbers because of the lack of reliable data, which is more acute than for the measurement of general mortality levels. It is estimated that only about 2 per cent of the world's infant deaths are registered with satisfactory reliability. The current WHO global estimate of infant mortality is that between 10 and 12 million of the approximately 125 million infants born in 1975 died before their first birthday. These figures imply an average infant mortality rate for the world of about 80 to 95 deaths per 1,000 live births.

Current levels of infant mortality

Africa

Less is known about infant mortality levels in Africa than any other major geographic division. Registration statistics cover less than 1 per cent of infant deaths, and these are from areas that cannot be considered representative. Consequently our knowledge of levels of infant mortality in Africa comes almost exclusively from survey data and inference from theoretical models. These suggest that infant mortality rates are generally lower in Northern Africa than in the sub-Saharan regions. Almost all the surveys conducted in Northern Africa have placed the infant mortality rate above 100 deaths under the age of 1 per 1,000 live births. Most estimates cluster around an average of about 150, and this figure may be taken as fairly representative for Northern Africa as a whole. A number of surveys conducted in other parts of Africa during the 1960s also pointed to an average infant mortality rate somewhere between 100 and 200, but when the data were later adjusted for underreporting of births and infant deaths, few of them produced infant mortality rates below 200. Thus, although one cannot offer a figure for each region in sub-Saharan Africa, one may say that the infant mortality rate in 1970 probably exceeded 200 in the regions of sub-Saharan Africa as a whole. This means that at least one child in five died before its first birthday. Both this number and the figure of 150 offered for Northern Africa conceal a great deal of geographic, ethnic and annual variation in infant mortality rates.

* Prepared in collaboration with the World Health Organization.

Latin America (less developed regions)

Estimates of infant mortality rates in Latin American countries are given in annex table 87. Death statistics for infants are considered virtually complete in countries containing only about 10 per cent of Latin America's population, and both survey data and estimation procedures provide the means of deriving infant mortality rates for much of Latin America as for Africa. Infant deaths in Latin America are best documented in the Middle American region, largely because about three quarters of the region's births occur in Mexico, which has almost complete infant death registration. In addition, registration is nearly complete in Guatemala and Costa Rica. Given this relatively firm basis, and allowing for some underregistration, it is probably safe to say that in 1970 the infant mortality rate for the Middle American region was around 70.

Thirteen countries or Territories in the Caribbean region are listed by the United Nations as having "complete" registration of infant deaths, but together they account for only about a quarter of the region's births. It follows that any estimate for this region is less reliable than the one for the Middle American region. The available evidence suggests an infant mortality rate in the vicinity of 65 for the Caribbean region, but this figure masks considerable diversity, since it appears that some of the region's island populations experience infant mortality rates that approach or exceed 100.

There is considerable evidence to support the conclusion that the highest infant mortality rates in Latin America occur in the Tropical South America region. It is, however, impossible to arrive at a precise estimate of the regional rate, much less a rate for most of the individual countries, because the data base is so meagre. Several groups of researchers studying some of the larger national populations of the region have estimated, or assumed, life expectancies at birth that imply infant mortality rates of around 100, and a recent study of Brazil (which contains roughly 60 per cent of the region's population) shows infant mortality rates in that country to have hovered around 100 during the period 1965–1970, so in the absence of contradictory evidence, it seems reasonable to accept that figure tentatively for the region.[11]

Asia

Estimates of infant mortality rates in Asian countries are also given in table 87. Any assessment of the level of infant mortality in East Asia is necessarily clouded by the lack of accurate information about China. Complete registration of infant deaths is carried out in areas comprehending only about 10 per cent of the region's population. This is about the same degree of completeness as in Latin America and, as in Latin America, the areas of complete registration in the East Asia region are atypical. The Territory of Hong Kong has an infant mortality rate of about 17, and Japan's (10.8 in 1974) is one of the lowest in the world. It has been suggested that the infant mortality rates of the other countries in the region—China, the Democratic People's Republic of Korea, the Republic of Korea and Mongolia—are roughly comparable. Reliable estimates are not available for the four countries just mentioned, but the fragmentary evidence available suggests that an average infant mortality rate of around 70 is fitting for the whole of the East Asia region (including Japan).

Complete registration of infant deaths is carried out in only two areas of the Eastern South Asia region and these account for only 4 per cent of the region's population. There are indications that average infant mortality rates have recently been well below 100 in some countries (notably Malaysia and the Philippines) and well above that figure in others. Although it is highly speculative, an estimate of 100 is the best that can be offered for the current infant mortality rate of the Eastern South Asia region.

Of the countries in the Middle South Asia region, only Sri Lanka has a complete registration of infant deaths and it contains less than 2 per cent of the region's population. Various national surveys have put the rates for Bangladesh, India and Pakistan between 135 and 155, and given their combined numerical weight, a regional infant mortality rate of about 145 seems indicated.

Among the countries of the Western South Asia region, infant death registration is considered complete only in Israel and Cyprus, where infant mortality rates were, respectively, 23 in 1974 and 29 in 1969–1971. Rates for some of the larger countries in the region are uncertain. However, those for Syria and Turkey have been estimated at well over 100, and the average for the region may be as high as 135.

Oceania

Of the two less developed regions of Oceania, Melanesia has the largest population and the lowest life expectancy, and accounts for over three quarters of the live births. The infant mortality rate for Melanesia could be as high as 150. The rate for Micronesia-Polynesia, on the other hand, may be only slightly higher than the rates for Australia and New Zealand, that is, around 20. Because of the relative population sizes, however, an appropriate estimate of the infant mortality rate for the two combined regions (Melanesia and Micronesia-Polynesia) would be around 110.

The more developed regions

Infant mortality rates for the countries included in the more developed regions are presented in annex table 88. Registration of infant deaths is considered to be virtually complete in all of these regions. Except for Albania, Portugal, Yugoslavia, Romania and Temperate South America, both the national and regional infant mortality rates were well below 40 per 1,000 live

[11] João Yunes and V. S. C. Ronchezel, "Evolução da mortalidade geral, infantil e proporcional no Brasil", *Revista de Saúde pública* (São Paulo, 1974), vol. 8 (Supplement), p. 31.

births in the early 1970s. The lowest rates in the world (about 12) were recorded in the Scandinavian countries, the Netherlands and Japan. Taking the regional averages, Japan and Temperate South America form the lower and upper extremes, but the latter is over twice the second highest regional rate (the one for Southern Europe). Northern Europe, Western Europe, Northern America, and Australia and New Zealand have similar infant mortality rates, which average about 50 per cent higher than Japan's. The rates for Southern and Eastern Europe are, in turn, about 75 per cent higher than the rates for Northern and Western Europe, and the infant mortality rate for the USSR falls midway between the rates for the two pairs of European regions.

The infant mortality rates for the regions of the world in the early 1970s, as best they can be estimated, are summarized in table 15. The reader is again reminded that the numbers for the less developed regions given above must be viewed with caution. Even so, the large gap between infant mortality rates in the more and less developed regions is apparent. With the exceptions of Temperate South America and Micronesia-Polynesia, infant mortality rates for the less developed regions are more than twice as high as the highest rate for the more developed regions. The greatest contrast is that between the Japanese and sub-Saharan African rates, where the latter is almost 20 times the former.

General trends in infant mortality since 1950

Data showing trends in infant mortality for countries having complete or nearly complete death registration statistics are given in annex tables 87 and 88. The estimated average annual rate of decline in the infant mortality rate over the 20 years between the early 1950s and the early 1970s varied from as little as 0.5 per cent in Argentina to 7.5 per cent in Japan. In most cases infant mortality rates declined at about 3 to 6 per cent per annum in the more developed countries and, apparently, somewhat less rapidly in the less developed countries that have good statistics. The rates of decline do not take into account the effects of improvements in death registration during the period, and it is very likely that such improvements explain the slower decline of the estimated infant mortality rates observed among the less developed countries listed in annex table 87. It is arguable that the true rates of decline were much more rapid than the observed rates and that there has been a degree of convergence in the levels of infant mortality among the countries represented in annex tables 87 and 88.

However, only countries currently in the lower range of infant mortality rates are represented in those tables. No trend data are available for most of the other countries, where infant mortality is still around 100 per 1,000 live births or more, but it is possible to infer what the over-all trend must have been like. After the Second World War, population growth rates in the less developed regions accelerated as a result of declining mortality. Mortality levels were still very high around 1950, and it is possible that infant mortality rates may have approached 300 in some countries, but it is doubtful whether many rates exceeded that level because such high infant mortality is incompatible with the population growth rates known to have existed at the time. Assuming that the infant mortality rate for sub-Saharan Africa was about 280 in 1950 and no higher than 200 in 1970 (a conservative estimate), the maximum average annual rate of decline in infant mortality rates would have been about 1.7 per cent, but it is likely that the true rate was closer to 1.5 per cent. Thus, taking the world as a whole, the countries that had the lowest infant mortality rates initially seem to have achieved the greatest relative rate reductions over the past 20 years or so.

Intranational differentials in infant mortality

Besides the interregional and international differences in levels and trends of infant mortality discussed above, there are important differentials within countries. For example, where studied, very high inverse correlations have been found between infant mortality rates and the socio-economic status of parents, whether measured by income, occupation, educational attainment, or some other criterion. Most of the detailed studies of differentials in infant mortality have been done for countries in the more developed regions, and they will provide the principal examples below. Nevertheless, studies of less developed areas indicate that the general pattern of differentials is much the same the world over.

Differing occupational groupings have been used in every country to measure socio-economic differentials,

TABLE 15. INFANT MORTALITY RATES, REGIONS OF THE WORLD

More developed regions	*Rate (average, 1970–1974)*	*Less developed regions*	*Rate (current estimate)*
Northern America	18.3	Northern Africa	150
Japan	11.8	Sub-Saharan Africa	>200
Eastern Europe	29.2	Caribbean	65
Northern Europe	16.2	Middle America	70
Southern Europe	31.1	Tropical South America	100
Western Europe	18.9	East Asia	70
Australia and New Zealand	16.9	Eastern South Asia	100
USSR	25.2	Middle South Asia	145
Temperate South America (1970)	63.7	Western South Asia	135
		Melanesia	150
		Micronesia and Polynesia	20

but every study has shown the infant mortality rate for the lowest group to be substantially higher than the rate for the highest group. Since 1950 the least difference between extremes has been found in Hungary (1960 and 1973), the Netherlands (1952–1954 and 1961–1962) and Honduras (1970–1972), where in each case the infant mortality rate for the lowest socio-economic group was about a third greater than the rate for the highest group.[12] The greatest difference has been found in France (1966–1970) and Scotland (1950–1954 and 1960–1964), where the infant mortality rate for the lowest group averaged about 2.5 times the rate for the highest group during each time period.[13] In both Denmark (1951–1953) and Poland (1962) the rate for the lowest group was about twice the rate for the highest.[14] Between 1952 and 1955 the Hungarian ratio of the infant mortality rate for the lowest socio-economic group divided by the rate for the highest group decreased from 1.62 to 1.43 (it had been 2.70 in 1948). Since then the differential has fluctuated without showing a clear-cut trend towards diminishing beyond the low of 1.35 it reached in 1960. In the few other countries, such as Scotland and the Netherlands, for which there are data for more than one time period, the differentials have similarly fluctuated without definitely diminishing.

Numerous other variables and indicators of socio-economic status, such as family income and the educational attainment of either parent, are inversely related to infant mortality in the same way that occupation is. Where differentials have been measured (as in Scotland, France, Hungary, Poland, Norway, the Netherlands, Algeria, the United States of America, Colombia and Honduras), infant mortality rates for the least favoured group have varied from about 1.30 to 3.00 times the rates for the most favoured group, and in time series the differentials have been relatively stable.

Ethnic or racial group discrimination, which produces social and economic deprivation, also affects infant mortality rates. The non-white population of the United States, which is mainly black, provides a well-studied example. In 1950 the infant mortality rate for the non-white population was about 45 whereas the rate for whites was 27. Twelve years later both rates had decreased but the difference between them had increased. The non-white rate was 1.66 times the white rate in 1950; by 1962 the differential had increased to 1.86. A study for the period 1964–1966 showed that the differential had widened further, to 1.90, and demonstrated that similar differentials existed for various socio-economic indicators. Within two of three income categories, infant mortality rates for non-whites were about 1.50 times the white rates, and within the third the differential was over 2.00. Differentials based on the educational attainment of mothers and fathers separately were approximately the same for each level of educational attainment. They ranged from about 1.40 for the lowest level (8 or fewer years of education) to 1.90 for the highest level (13 or more years of education). A recent study of the Algerian and French populations in France during the periods 1956–1960 and 1966–1970 produced differentials of approximately the same magnitude.[15]

However, not all variations in infant mortality rates are solely by-products of discrimination or socio-economic status. Ethnic differentials found in parts of West Africa have been attributed to a combination of ecological factors and group differences in sanitary, personal hygiene, dietary, food preparation, feeding and health care practices. Illegitimacy, age of mother and parity are still other factors that affect infant mortality rates. Infant mortality rates for illegitimate births exceed those for legitimate births and rates for one-parent households exceed those for households in which both parents are present. In the countries studied, illegitimacy is often associated with one-parent households, which, in turn, are most common among the lowest socio-economic groups. Infant mortality rates grouped by age of mother form a U-shaped curve. The highest rates are those for births to teen-aged mothers. Rates are lowest in the age groups from about 20 to 30, after which they increase with mothers' ages. Parity, the number of previous live births, is linked to the age of mothers and child-spacing, and although it is not universally true, infant mortality rates tend to increase both as parity increases and as the childbearing interval decreases.

Studies of urban-rural differentials in infant mortality are inconclusive. Those for countries with low infant mortality rates tend to show relatively small differentials, with urban rates sometimes higher and sometimes lower than rural ones. Studies carried out in countries where infant mortality rates are higher have also produced conflicting evidence, but they have most often shown rates to be significantly higher in rural than in urban areas. It is generally argued that this is the case because salaried work in cities provides a more reliable (and presumably better) food supply and because water supplies, sanitation and health care are better in cities than elsewhere. However, a study of Colombia for the period 1958–1964 showed urban-rural differentials in infant mortality to

[12] Tiborné Pongrácz, "A csecsemöhalandosag alakulása", *Demografia*, vol. XVII, No. 2-3 (1975), p. 246; United States of America, Department of Health, Education and Welfare, National Center for Health Statistics, *Infant Loss in the Netherlands*, Vital and Health Statistics, Series 3, No. 11 (Washington, D.C., 1968); Antonio Ortega y Manuel Rincón, *op. cit.*, pp. 31–33.

[13] Scotland, Registrar General, *Annual Report 1974*, part I, *Mortality Statistics*, p. 359; United States of America, Department of Health, Education and Welfare, National Center for Health Statistics, *Infant and Perinatal Mortality in Scotland*, Vital and Health Statistics, Series 3, No. 5 (Washington, D.C., 1966); Solange Héméry and Marie-Claude Gérard, "La mortalité infantile en France suivant le milieu social", *International Population Conference, Liège, 1973* (Liège, International Union for the Scientific Study of Population, 1973), vol. III.

[14] Edward Rosset, *Demografia Polski-Reprodukeja Ludności* (Warsaw, Państwowe Wydawnictwo Naukowe, 1975), vol. 2., pp. 397–398 and 450–451; United States of America, Department of Health, Education and Welfare, National Center for Health Statistics, *Infant and Perinatal Mortality in Denmark*, Vital and Health Statistics, Series 3, No. 9 (Washington, D.C., 1967).

[15] United States of America, Department of Health, Education and Welfare, National Center for Health Statistics, *Infant and Perinatal Mortality in the United States*, Vital and Health Statistics, Series 3, No. 4 (Washington, D.C., 1965); United States of America, Department of Health, Education and Welfare, Public Health Service, *Infant Mortality Rates: Socioeconomic Factors, United States* (Rockville, Maryland, 1972); Solange Héméry and Marie-Claude Gérard, *op. cit.*

have all but disappeared. Moreover, among urban areas, the infant mortality rate for cities of 100,000 or more people increased to about a third more than the rate for cities with fewer than 100,000 people during the same period. Recent data for Brazil suggest that a similar situation has developed with respect to São Paulo. It may be that the rapid growth of large cities in recent years has outweighed the previous advantages of urban living in the less developed regions.[16]

Causes of death in infancy

The distribution of deaths during the first year of life varies with the causes of death as well as with the level of infant mortality. In countries with low levels of infant mortality, where infectious and parasitic diseases have been brought under control, infant deaths are concentrated in the first month of life. Within the first month, the heaviest toll is taken during the first week, and the largest number of deaths in the first week occur during the first day of life. It will be noted in annex table 89 that, except for Poland, more than half of all infant deaths occurred during the first week of life in the countries for which data are given and in every case the largest number of deaths in the first week occurred during the first day. These phenomena reflect the significance of endogenous causes of death in infancy. Endogenous causes of death such as congenital anomalies, birth injuries and asphyxia constitute a very large proportion of first-day deaths and an important part of first-week deaths. In countries where infant mortality is high, on the other hand, noxious environmental or exogenous threats have not been brought under control, and the risks of dying remain high throughout the first year of life, as the infant is very sensitive to qualitative factors relating to exposure and resistance to disease.

The study of causes of death in infancy is severely handicapped by the poor quality of data. Even where registration of infant deaths is complete, the data on causes of death are inadequate. Ill-defined or unknown causes may account for up to 30 per cent of all infant deaths and an even higher percentage of deaths in the first week of life. Cause-of-death data for a few of the more developed countries that have good statistics are given in annex table 90 and it is evident from these that "perinatal causes" are the largest factor in infant mortality in these low-mortality countries. In some countries "perinatal causes" seem to account for between 50 and 60 per cent of all deaths during the first year of life. Annex table 91 indicates the pattern of decline in infant mortality by cause during the period from 1953–1957 to 1963–1967 for all but one of the countries listed in annex table 90. These data defy generalization beyond the observation that during that period substantial improvements were made in most of the countries in reducing death due to infectious and parasitic diseases and that "perinatal causes" and congenital anomalies were usually among the most resistant to efforts to reduce mortality. By way of contrast, it has been estimated, from the very limited information available, that infectious, parasitic, gastrointestinal and respiratory diseases are responsible for a large majority (which may reach 80 or 90 per cent) of all infant deaths in the less developed regions.

The dominant fact in this survey of infant mortality is the gross inequality that exists between the more and less favoured regions of the world in the risk of dying during the first year of life: more than 2 out of every 10 infants born in Tropical Africa die before their first birthday, whereas only about one in every 100 dies in infancy in the countries with the lowest rates. It is clear that such variations in infant mortality rates are not simply functions of economic development. Large and relatively rapid reductions in deaths from infectious and parasitic diseases can be achieved with relative ease in the absence of large-scale economic development. Some countries in the less developed regions have brought about substantial reductions in infant mortality through educational programmes that are designed to improve the quality of infant and child care. Even a factor as important to good health in infancy as adequate nutrition is not entirely dependent upon economic progress, but has important cultural elements. However, infant mortality rates as low as those found in the more developed countries are dependent upon economic development, for such rates are attained through a combination of good nutrition, personal hygiene, public health service, and obstetric and paediatric care, all of which are costly.

F. Childhood mortality*

Childhood mortality is usually defined as the death of children who were aged 1–4 years at their last birthday. The childhood mortality rate is the number of those deaths occurring during a given period, commonly a year, per thousand children in the population age group 1–4 at the mid-point of the period. So defined, childhood mortality excludes infant mortality. Until recently the study of childhood mortality has been relatively neglected, consequently there are even fewer data on this subject than on infant and perinatal mortality. Childhood mortality rates for most of the less developed countries can only be inferred, but it is clear that they are more variable and generally higher than in the more developed countries.

Current levels of childhood mortality

The data currently available for the less developed regions indicate that levels of childhood mortality tend to parallel those of infant mortality. Thus it seems that childhood mortality rates are highest in sub-Saharan Africa, somewhat lower in Northern Africa, South Asia and Tropical South America, and lowest in Middle America, Temperate South America and the Carib-

[16] Asociación Colombiana para el Estudio de la Población, *La Población de Colombia*, CICRED Monograph Series, World Population Year 1974 (Bogotá, 1974), p. 48; João Yunes, "Mortalité", *La population du Brésil*, CICRED Monograph Series, World Population Year 1974, compiled under the direction of the Centre brésilien d'analyse et de planification and the Centre d'études de dynamique de la population (São Paulo, 1974).

* Prepared in collaboration with the World Health Organization.

bean. PAHO has reported childhood mortality rates for 22 subnational areas of Latin America, the highest of which is roughly 17 times the lowest (the range being from 1.5 to about 26 per 1,000). Childhood mortality rates for sub-Saharan Africa, however, may exceed 40 per 1,000, and such rates suggest a world-wide range in which the highest childhood mortality rates are about 100 times greater than the lowest. This is greater than the relative difference between extreme death rates in any other age group; it is about five times the estimated relative spread of infant mortality rates.

By comparison with the less developed regions, childhood mortality rates in the more developed countries are very low. Among the countries for which there are good data, they range from a low of 0.4 in Sweden to a high of about 3.2 in Portugal, which is eight times the Swedish rate. It will be noted from the data in annex table 92 that all but a few childhood mortality rates for the more developed countries are around 1 per 1,000 or lower and, almost without exception, the male death rates exceed the female ones. At the low levels of childhood mortality that prevail in the more developed countries, the mortality rates cannot be used as indicators of either socio-economic development or of health problems, as they might be elsewhere, because very small fluctuations in the number of childhood deaths from year to year may cause large fluctuations in rates.

Trends in childhood mortality since 1950

Annex table 93 shows that there was a substantial reduction in childhood mortality in all of the more developed countries from the early 1950s to 1969. On the average, childhood mortality rates declined about 4 per cent annually. Rates declined most rapidly in Japan (10.4 per cent per annum), Ireland (5.5 per cent), France (5.4 per cent) and the other more developed countries that had above average childhood mortality rates in 1950. Thus, since 1950 there has been a reduction in the absolute range of mortality rates throughout the more developed world in the age group 1–4 as in the older age groups. As in the older age groups, the pace of decline and convergence of childhood mortality rates has slowed since the early 1960s. With the exception of a few countries, the differences in childhood mortality rates are very small and the slowed pace of mortality decline is to be expected inasmuch as there seems to be relatively little room for further improvement.

The same cannot be said for the less developed regions. Nevertheless, the few reliable childhood mortality rates available support the generally held view that they have declined in many less developed countries since 1950—particularly in parts of Latin America and East Asia. It may well be that, on the average, childhood mortality rates declined more rapidly in the less developed than in the more developed regions. The few rates given in annex table 93 do not necessarily reflect this, for improvements in death registration may conceal some of the mortality decline.

Differentials in childhood mortality

Urban and rural childhood mortality rates for the countries classified in the *Demographic Yearbook, 1974*[17] as having reliable statistics are presented in annex table 94. The urban rate is higher than the rural rate in only two instances (females in Denmark in 1969 and in the United Kingdom in 1973), and in the time series it has not been consistently higher even in those cases. Ratios of rural to urban childhood mortality rates in the countries listed in annex table 95 vary from 0.6 to 1.7 (with three exceptions, for males in Pakistan and Bulgaria and for females in Greece), indicating that levels of childhood mortality in rural areas are as a rule almost twice the urban levels. PAHO also found that, in the Latin American areas studied, rural childhood mortality rates, with few exceptions, exceeded urban rates. PAHO found much larger rural-urban differentials, however, than those indicated in annex table 94. Some childhood mortality rates in Latin America were found to be three or four times higher in rural than in urban areas. In all cases, the rural-urban differentials are generally assumed to reflect differences in health conditions and in the availability of health services.

Time series by sex for more developed countries almost invariably show that childhood mortality rates for males either equal or exceed those for females, but this relationship appears to be less common in less developed countries. The explanation often offered for this difference is that, even though it is generally agreed that boys are biologically more vulnerable than girls, there must be factors operating in some of the less developed countries, for example, preferential treatment, which favour the survival of boys over girls.

In addition to the variations already discussed, the pattern of mortality by age is far from uniform within the age group 1–4. For example, in both more and less developed societies, mortality during the third, fourth and fifth years of life (that is, at ages 2–4) is relatively low in comparison with mortality during the first or second year of life (that is, at age 0 or 1). In almost all of the PAHO study areas, for example, more than half of the deaths in the age group 1–4 occurred in the second year of life. Similar results have emerged from other studies, including some for West Africa. Finally, studies carried out in both more and less developed countries have shown that childhood mortality, like infant mortality, varies with socio-economic status, ethnic group and geographic region. Several studies, such as the Honduras study cited above in the section on Latin America, indicate that childhood death rates vary much more with socio-economic status than do the death rates for any other age group.

Causes of death in childhood

WHO has identified the three leading causes of childhood death in the countries of the more and less developed regions that provide data, as shown in table 16.

[17] United Nations publication, Sales No. E/F.75.XIII.1.

TABLE 16. LEADING CAUSES OF DEATH DURING CHILDHOOD

	More developed regions	*Less developed regions*
Most common cause	Accidents	Influenza and pneumonia
Second most common cause	Influenza and pneumonia	Gastritis and enteritis
Third most common cause	Congenital anomalies	Accidents

WHO, however, qualifies the list in several important ways. First, the list of leading causes necessarily reflects the situation in those countries that collect cause-of-death information: the conditions of registration, choices that are made as to the assignment of underlying causes of death, and other factors. In addition, such lists drawn from data for underlying, or immediate, causes of death, hide the often fundamental role of nutritional deficiencies in mortality. This is an especially important consideration among the less developed countries, where nutritional deficiencies weaken children and increase their risks of death from infectious diseases, which account for the bulk of childhood mortality. Evidence from the PAHO and other studies emphasize the importance of nutritional deficiencies, particularly in combination with infectious diseases. Nutritional deficiencies are rarely recorded as the underlying cause of death on death certificates, but PAHO found them present in many of its study areas as an associated cause of death in roughly the same proportion as infectious diseases were found to be the underlying cause (see annex table 95). In the Latin American areas studied, nutritional deficiencies were found to be either the underlying or an associated cause of between one third and over two thirds of all childhood deaths.

Nutritional deficiencies were not given as the underlying cause of any deaths in the two PAHO study areas in Canada and the United States, but they were associated with over 22 per cent of all childhood deaths in the suburban California study area. Given the reciprocal relationship between nutritional deficiencies and infectious diseases, it is often difficult to decide, when both conditions are present, which of the two should be designated as the underlying cause of death.

WHO attributes somewhat more than 10 per cent of all childhood mortality in most of the countries of the world to the group of respiratory diseases that includes influenza, pneumonia and bronchitis. However, the actual childhood mortality rates due to respiratory diseases vary a great deal. In the more developed countries, the childhood death rates from respiratory diseases are very low—on the order of 10 per 100,000 children in the age group 1–4. Bulgaria, with a death rate of 43, is exceptional. In at least one of the less developed countries, the childhood death rate from respiratory diseases was reported to be nearly 400 per 100,000 as recently as 1968–1970. Trend data are not available for many less developed countries, but those that are suggest that death rates from respiratory diseases are declining rapidly. In many cases the rates may already be down to about 50 per 100,000.

Most mortality stemming from congenital anomalies occurs during the perinatal period, and such causes of death assume relative importance in childhood only when childhood mortality is very low. In the more developed countries, congenital anomalies are given as the underlying cause of death during childhood about as frequently as respiratory diseases—that is, the mortality rate is about 10 per 100,000. The absence of data makes it impossible to discuss with confidence the levels of childhood mortality due to congenital anomalies in the less developed countries. It is arguable that, given the generally lower level of medical care in the less developed countries, the infant born with developmental defects has little chance of surviving infancy and that, as a result, mortality from such causes is lower during ages 1–4 in the less developed than in the more developed countries.

The frequency of accidental death during childhood does not vary as much between the more and less developed countries as one might expect. World-wide, the childhood mortality rate from accidents probably varies at present between about 20 and 40 per 100,000. Accidental death rates, in the age group 1–4 as in the others, are unfortunately either declining slowly or not at all. Equally important, non-fatal accidents which cause permanent disabilities outnumber fatal accidents by a substantial margin and similarly do not appear to be declining.

In sum, WHO assesses accidents and influenza and pneumonia as comprising two of the three leading causes of death in childhood in both the more and the less developed regions of the world. In spite of the similarity of causes, however, the difference between death rates in the more and less developed regions is more pronounced in the childhood age group 1–4 than in any other age group. That difference is indicative of wide variations in health conditions. Like infant mortality, mortality during childhood can be reduced to very low levels through existing knowledge, and it follows that most of the childhood mortality that occurs is avoidable.

G. MATERNAL MORTALITY*

The term maternal mortality is used here to refer to all deaths attributed to complications of pregnancy, childbirth and the puerperium (as given in section XI of the International Classification of Diseases), with the exception of abortion-related mortality. Abortion-related mortality is excluded from the discussion because incorrect certification of deaths following illegal abortions appears to be so common in a number of countries that attempts to make international comparisons are fruitless. Deaths associated with pregnancy or childbirth that are attributed to other causes, such as cardiovascular diseases, are excluded by definition. Such deaths have been tabulated in a few countries. In England and Wales, their numbers over the past three decades have equalled about a third of the maternal mortality deaths as defined here, but the extent to which the stresses of pregnancy or childbirth contributed to those deaths is unknown.

* Prepared in collaboration with the World Health Organization.

Levels and trends of maternal mortality

There is very little information about the level of maternal mortality prior to 1920, and comprehensive statistics for one or more years since 1950 are available for less than three tenths of the world's population. The available data come mainly from the more developed regions, and of the 10 most populous countries in those regions, only Japan and the United States have published statistics on maternal mortality. In addition to biases arising from the data themselves, others result from the way in which maternal mortality is commonly measured. The maternal mortality ratio is the number of maternal deaths per 100,000 (or 10,000) live births, and differences in the completeness of birth and death registration may produce ratios that deviate significantly from true levels of maternal mortality.

The following discussion is based primarily on 32 countries for which there are data that meet the following criteria: statistics on live births, maternal deaths and the female population, by five-year age groups, must be available for at least two consecutive three-year periods out of five; there must have been at least 100,000 live births in each three-year period; and birth registration must be complete or nearly complete. Annex table 96 gives maternal mortality ratios for the period 1951–1953 to 1970–1972 that have been standardized to facilitate comparisons among countries and over time. The ratios have been calculated from age-standardized data to compensate for variations in the distribution of live births by mothers' ages, both among countries and within time series. Of all the countries included in annex table 96, only the Netherlands had achieved a maternal mortality ratio as low as 60 per 100,000 live births in 1951–1953; by 1966–1968, all but six of the 32 countries had ratios below 60. In addition, in 1956–1958, the maternal mortality ratios in three countries had dropped below 40. The ratios in eight countries were below 30 by 1961–1963. They were below 20 in three countries by 1966–1968, and below 10 in three countries by 1970–1972.

Maternal mortality ratios were certainly higher in the countries without statistics than in the ones listed in table 96. A maternal mortality ratio exceeding 600 was recently reported for a rural area in Bangladesh, but it is not possible to determine how representative it is. The figure is at least credible in the light of other data, including some for such countries as England and Wales, the United States, Germany (Prussia) and Switzerland, where maternal mortality ratios of between 330 and 420 were reported as recently as the 1920s and early 1930s. (A maternal mortality ratio of about 2,000 per 100,000 live births has been estimated for female members of the ruling houses of Europe born in the sixteenth, seventeenth and eighteenth centuries.

At the bottom of annex table 96 there are two sets of summary statistics. One, designated set "A", is based on the reported maternal mortality ratios for 11 countries, mainly in Northern and Western Europe and Northern America, which provide data for all five of the three-year periods from 1951–1953 to 1970–1972. The other, set "B", consists of the reported ratios for all 32 countries in 1966–1968, and either the reported ratios or estimated ones for each of the other four three-year periods. Where there were no reported ratios, estimates were made on the assumption that the unknown maternal mortality ratios changed over the interval in question at a rate equalling the average percentage change of the reported ratios. Mortality ratios for all countries declined, and with two exceptions, they declined from each three-year period to the next. The observed decline over the period from 1951–1953 to 1970–1972, for the 11 countries in set "A", was 75 per cent. The estimated decline over the same period for all 32 countries (set "B") was 73 per cent. The annual rate of decline was greater for set "A" than for set "B" in all intervals between three-year periods except the first.

The average annual rates of decline for the age-standardized ratios just discussed are slightly lower than the rates of decline for the crude maternal mortality ratios (not shown in the tables). This indicates that a small portion of the change in the crude ratios reflects changes in reproductive behaviour, in particular, a shrinking proportion of births to older women. The bottom two lines of annex table 96, where the mean age-standardized maternal mortality ratios are given as percentages of mean crude ratios, confirm this interpretation. The percentages for set "A", which consists of countries with low and falling birth rates (hence lower and declining proportions of births to older women), are consistently higher and increase faster than the percentages for set "B", which includes a number of populations with high birth rates and stable patterns of birth by mothers' ages. Finally, an analysis of the dispersion of maternal mortality ratios indicates that the lower ratios have tended to decline more steeply than the higher ones, and that the lowest ratios may be approaching the minimum level attainable with current medical knowledge.

Age patterns of maternal mortality

Annex table 97 shows trends in age-specific maternal mortality ratios for a group of ten countries which each had at least 500,000 live births during each three-year period. As can be seen, with few exceptions there has been a steep decline in maternal mortality for every age group in every country over the 10-20-year period shown for each country. The age pattern of the ratios is essentially J-shaped. Except for a few countries with low mortality, there is usually a low point at 20–24 years of age. In all countries and in all intervals between periods, the ratios rise with age (and more often than not at an accelerating rate) from the low points to the highest values at 40 or more years of age.

Annex table 98 gives the relative levels of the age-specific maternal mortality ratios for the latest three-year period for the same group of countries as is presented in annex table 97. The relative levels are given in the form of index numbers, in which the age-specific ratios are expressed as percentages of the age-standardized ratios for the period under consideration.

Although time trends are not given, an analysis has shown that the relative levels of maternal mortality have been fairly stable in six of the countries. However, in France, Italy, the Federal Republic of Germany and especially in Japan, there has been a widening gap between the lowest- and the highest-mortality age groups. In addition, when countries are grouped according to birth rates, the J-shaped curve is notably "flatter", on the average, in the four countries with high birth rates than in the six with low birth rates. The ratio of the lowest relative level (that of the age group 20–24 years) to the highest (the age group 40 and over) is approximately 1:4 for the high-birth-rate countries and 1:10 for the six low-birth-rate countries. One reason for the different patterns may be that in countries with low birth rates, childbearing tends to be concentrated in the younger age groups. Older women who have children are more frequently from the lower socio-economic strata, where poor health is more prevalent, access to health services is more restricted, and maternal mortality is ordinarily higher. This kind of selection is lacking or less evident in countries with high birth rates.

Annex table 99 presents a different measure of maternal mortality: annual maternal mortality rates per million women in the reproductive age groups 15–44. These rates reflect the combined effect of fertility levels and maternal mortality ratios. The over-all picture is again one of steady decline. As indicated in table 17, the annual percentage rates of decline are consistently higher for the maternal mortality rates than for the maternal mortality ratios in the "A" sets. This reflects declining birth rates. The pattern is similar but more irregular for the "B" sets, which include a number of countries with stable or even rising birth rates.

TABLE 17. ANNUAL PERCENTAGE RATES OF CHANGE OF UNSTANDARDIZED MATERNAL MORTALITY RATES AND RATIOS

Interval	*Unstandardized maternal mortality rates*		*Unstandardized maternal mortality ratios*	
	Set A	*Set B*	*Set A*	*Set B*
1951–1953 to 1956–1958	8.2	8.2	7.8	7.9
1956–1958 to 1961–1963	8.4	6.7	8.3	7.0
1961–1963 to 1966–1968	8.8	7.1	7.1	6.2
1966–1968 to 1970–1972	10.3	6.8	9.6	7.3

Causes of death during the reproductive period with respect to maternal mortality

The data presented in annex table 100 indicate that, during the past two decades, at least, maternal mortality has been a diminishing cause of death in the age group 15–44. Among the more developed countries listed, maternal mortality in 1956–1958 accounted for between 2.3 per cent of all deaths to women at risk in Sweden and 7.6 per cent in Ireland. By 1970–1972 the percentages of deaths attributed to maternal mortality had declined to a low of only 0.5 in Denmark and a high of 4.3 in Portugal. The percentages in the less developed countries (as illustrated by the data in annex table 100) were between 3 and 20 times greater. The percentage of all female mortality in the age group 15–44 years that is attributable to maternal mortality varies not only with general mortality levels but also with levels of fertility. Thus, given the same age-specific death rates, maternal mortality will account for a higher percentage of all female mortality during the reproductive years in countries with high birth rates than in countries with low birth rates.

During the past 20 years or so, both female mortality from all causes during the reproductive years and maternal mortality have declined, but the latter has declined more rapidly. This is rather dramatically illustrated by the summary of statistics from annex table 96 and from elsewhere for the same countries, which is given below in table 18.

TABLE 18. ANNUAL PERCENTAGE RATES OF CHANGE OF AGE-STANDARDIZED DEATH RATES FROM ALL CAUSES FOR WOMEN 15–44 YEARS OF AGE AND ANNUAL PERCENTAGE RATES OF CHANGE OF AGE-STANDARDIZED MATERNAL MORTALITY RATIOS, 1951–1953 TO 1970–1972

Interval	*Deaths from all causes*		*Maternal mortality*	
	Set A	*Set B*	*Set A*	*Set B*
1951–1953 to 1956–1958	–5.7	–5.5	–6.9	–7.1
1956–1958 to 1961–1963	–2.6	–3.2	–7.3	–6.6
1961–1963 to 1966–1968	–1.5	–2.1	–6.2	–6.0
1966–1968 to 1970–1972	–0.8	–0.8	–8.4	–6.7

WHO commonly groups the causes of maternal mortality under four headings—sepsis, toxaemia, haemorrhage, and other complications of pregnancy, childbirth and the puerperium. The distribution of maternal mortality among the four categories varies considerably from country to country, and it is not clear to what extent the differences reflect variations in the incidence of each group of complications, differences in the availability and utilization of health care facilities, or merely the vagaries of diagnositc and statistical practices. In the absence of any apparent pattern, the last mentioned appears to be the most plausible.

H. A MULTIPLE REGRESSION ANALYSIS OF FACTORS RELATED TO MORTALITY

In connexion with the monitoring of population trends, an exploratory study was undertaken to assess the joint and residual effects of some selected social and economic variables on levels of mortality in different countries of the world in 1970. The variables included in the study were the gross domestic product per economically active person, the proportion of government expenditure allocated to health, the proportion of physicians in the population, the proportion of the population in urban areas, the calorie and protein consumption *per capita,* the crude birth rate, the crude death rate and life expectancy at birth. The study included data for 74 less developed countries of Africa, Asia and Latin America, and 25 more developed countries. In mid 1970 the 99 countries had a combined population of about 2,300 million, which was 64 per cent of the estimated world population of 3,610 million.

The study was carried out in three stages. First, simple correlation coefficients were calculated between the variables taken two by two in order to establish their pairwise linear relationships. Consumption of protein did not show any statistically significant association with the other variables and it was therefore not considered further. The other variables exhibited differing degrees of

mutual linear association. Secondly, multiple regressions were calculated using first the crude death rate and then life expectancy at birth as the dependent variable. Both regressions produced statistically significant results with a probability of error that was well below 0.005. Thirdly, the method of hierarchical regression was used in which the independent variables were added in the multiple regression in a predetermined order. Thus it was not necessary to determine the marginal contribution of each variable by assuming that it was the last one added. Two orders of hierarchy were adopted for analysis and the results are shown in tables 19 and 20. It will be noted that, irrespective of the order of inclusion, all variables were found to make significant contributions to mortality levels directly, in addition to their indirect contributions through other variables.

TABLE 19. TEST OF INCREMENTAL PROPORTION OF VARIABILITY OF THE DEPENDENT VARIABLES ATTRIBUTABLE TO MULTIPLE REGRESSION ACCORDING TO HIERARCHICAL ORDER I

Hierarchical order I	*Crude death rate*	*Life expectancy at birth*
Gross domestic product per labour force	[a]	[a]
Proportion of health to total government expenditure	[a]	[a]
Proportion of physicians in population	[a]	[a]
Proportion of urban population	[a]	[b]
Calorie consumption *per capita*	[c]	[a]
Crude birth rate	[a]	[a]

[a] Significant at 0.5 per cent level.
[b] Significant at 1 per cent level.
[c] Significant at 5 per cent level.

TABLE 20. TEST OF INCREMENTAL PROPORTION OF VARIABILITY OF THE DEPENDENT VARIABLES ATTRIBUTABLE TO MULTIPLE REGRESSION ACCORDING TO HIERARCHICAL ORDER II

Hierarchical order II	*Crude birth rate*	*Life expectancy at birth*
Calorie consumption *per capita*	[a]	[a]
Proportion of physicians in population	[a]	[a]
Proportion of urban population	[a]	[a]
Proportion of health to total government expenditure	[a]	[a]
Gross domestic product per labour force	[a]	[a]
Crude birth rate	[a]	[a]

[a] Significant at 0.5 per cent level.

Chapter III

REPRODUCTION AND FAMILY FORMATION*

Over the past quarter of a century, important changes have occurred in international levels and trends of fertility. Many of the more developed countries experienced first an increase and then a marked decrease, while others underwent what was merely a continuation of the secular decline. In many less developed countries, levels of fertility began to drop appreciably for the first time in modern demographic history, but because fertility remained relatively unchanged in a large number of those countries, differences in fertility levels between groups of developing countries were reinforced, while the gap in fertility levels between the more developed and less developed nations generally widened. The nature of the differences in fertility between national subgroups has not altered appreciably in the developing countries, as birth rates or fertility rates tend, with few exceptions, to be negatively associated with educational status and with urban residence. During the "baby boom" that occurred in the majority of the more developed countries, there was a general contraction of the differentials, as fertility increased most in those groups in which it had previously been lowest. With the resumption of the long-term downward trend, the gaps in fertility levels between groups classified by level of education and among groups classified according to residence again narrowed.

Recent patterns in the association of fertility with educational status have varied, so that in some countries the association has been inverse, in others it has been positive and in still others it has followed a U-shaped pattern, in which the fertility of women with higher and lower educational levels exceeded that of women who had only attained an intermediate level of schooling.

In general, urban residence has been associated with lower fertility. However, in a few of the countries where fertility remains high, available evidence suggests that little, if any, differential prevails.

The international clamour for improved conditions for women has focused attention particularly on the age at which they marry, as this determines to a large extent their educational opportunities and their eventual contribution to society, and especially to its social and economic development. Trends in the more developed countries have been mixed, but in most developed countries of the West there has recently been a tendency to enter into marriage at an earlier age, possibly because scientific advances in contraceptives and liberal legislation on abortion have enabled them to postpone childbearing until a convenient time. In general, in the less developed countries higher proportions of young women are, or have been, married than is the case in the now more developed nations.

With few exceptions, women in the less developed countries tend to consider the ideal number of children to be more than the number they actually wish to have. They also expect to have more children than they desire and they consider the number of children living to be below the ideal number; in the more developed countries, on the other hand, there is less difference between the number of children considered as ideal and the number that women expect to have. For the few countries for which data are available, the number of children living also falls short of the ideal. This supports the conclusions of many authors that, where individuals and couples have access to information and services for regulating births, they take into account the costs of rearing children of a desired quality and weigh these costs against their desire to achieve other goals.

The past 20–25 years have witnessed the emergence of developmental planning on a wide international scale. In a great many countries, social and economic planning has been supported by planning in the field of population, of which national family planning programmes have been an important aspect. Without attempting to place a value on these programmes, it may be said that in certain countries several of their features have proved highly relevant to changes in birth rates and fertility levels, patterns of fertility differentials and possibly, also, views on the norms for family size.

It has been determined that when the programmes are still in their infancy, they recruit as acceptors of fertility regulation methods mainly older women who have already exceeded the desired family size. In time, the programmes attract increasingly younger women of lower parity. Where a variety of methods is offered in the programme, older women have tended to accept methods of regulation that are appropriate for limiting family size, while younger women prefer to apply techniques, such as the pill, that are more suitable for spacing births.

A. Fertility levels and trends

The problematical factors in determining the course of world population have been the levels and conditions of fertility and the prospects for their change. Because mankind everywhere values life and is therefore constantly seeking to diminish the incidence of mortality, it is evident that, barring occasional catastrophes or other

* Prepared by the Population Division of the United Nations Secretariat; section E was prepared in collaboration with the World Health Organization.

unforeseen circumstances, fertility will continue to represent the pivotal variable in world population change. The quality of population projections, which are an essential ingredient of developmental planning, depends heavily upon the precision with which fertility can be measured as well as the reliability of the assumptions regarding future changes in fertility.

Levels, patterns and conditions of fertility vary throughout the world, and the course of fertility is not uniform among the more developed or the less developed countries either. Some high-fertility regions are experiencing further increases; others are undergoing a decline. Such divergent trends are also found among the developed countries, where fertility is already low. The causes of these different trends, even within regions and among countries that are similar culturally and demographically and are at nearly comparable levels of development, are not well understood.

It is not the purpose of the discussion that follows to explain the factors underlying the levels of fertility; human reproduction is influenced by a variety of factors interacting with each other in a complex manner and a multiplicity of ways. Consequently, only an intensive analysis can illuminate to any appreciable extent the causal relationship of these factors to fertility. The following statement of the levels and trends of crude birth rates and gross reproduction rates is intended merely to point out, in so far as these measures permit in the light of their definitions and reliability, the level of fertility, its recent course and how these differ among the regions and countries of the world.

A satisfactory basis exists for determining the levels and recent trends of the basic fertility indices, the crude birth rates and the gross reproduction rates for nearly all of the more developed countries, but information is sorely lacking for the vast majority of the less developed countries, owing both to the inadequacy or non-existence of vital registration statistics and to the poor quality or absence of data from population censuses.

Among the less developed countries, there are considerable differences in the quality and availability of data, and these differences, particularly as regards the validity of statistics, greatly affect international comparability. Apart from the fact that the values of the crude birth rates are influenced by age structure, impairing the validity of comparisons over long periods of time in any given country, as well as among countries, there is the additional disadvantage occasioned by differences in methods of estimating crude birth rates and gross reproduction rates.[1]

The estimated measures are less reliable than rates based upon complete vital registration data, good population census returns and sound intercensal population estimates. Consequently, comparisons of the gross reproduction rates, many of which are estimates, also require some caution. Another problem of comparability relates to improvements over time in vital registration data which, when significant and when the extent of change in completeness cannot be estimated, may mask certain features of the trends. In light of short-comings of the data, it is necessary that considerable caution be brought to bear in the interpretation of the levels and trends of these indices.

Among the less developed countries, the picture that can be drawn of fertility levels and trends is most reliable for those in the region of Latin America, including the Caribbean. In that region vital statistics registration is considered to be relatively complete in 17 of the 27 countries having a population of at least a quarter of a million. Brazil, by far the largest country, with about one third of the region's population, belongs to the group of 10 countries for which the data are not of reliable quality. In Asia, on the other hand, the data for determining fertility levels and trends are adequate, not counting developed Japan, for only seven small populations (those of Cyprus, Hong Kong, Israel, the Ryukyu Islands, Singapore, Sri Lanka and West Malaysia), so that knowledge of conditions among the vast majority of the region's inhabitants, including those in the most populous developing countries (China, India, Indonesia, Bangladesh and Pakistan) remains unsatisfactory. The picture for Africa is equally bleak, adequate data being available for only five countries (Algeria, Egypt, Mauritius, Réunion and Tunisia). Estimates of fertility levels in the remaining African countries have been derived from relatively weak survey and census data. For the most part, even those developing countries that have reliable statistics of recent vital events do not have a history of good vital statistics registration, so that reliable information on fertility trends is even more scanty than the rather meagre information available on levels of fertility.

Crude birth rates

In spite of the considerable progress made over the last two to three decades in the development of vital statistics and population census data, it is possible only to conjecture as to the level of world fertility. The best available estimates place the crude birth rate for the world as a whole for the period 1970–1975 at about 32 live births per 1,000 population (see annex table 74), but this average masks marked regional variations, from 15 per 1,000 for Northern and Western Europe to an estimated 49 per 1,000 in Western Africa. Of course, as noted earlier, comparability of rates is impaired not only by variations in the quality of data but, significantly, by important differences in age structure occasioned by sustained past differences in fertility levels and, to a lesser extent, in levels of mortality too. The data available are also inadequate for identifying trends in the crude birth rate for the world as a whole. However, the best estimates suggest a decrease of from about 36 live births per 1,000 population in 1950–1955 to around 32 in 1970–1975.

Such information as is at hand shows that, during these years, the difference in crude birth rates between

[1] The methods of estimation are described in notes to the relevant tables. These were based mainly on the stable population method, the Brass method and the "reverse survival" of census and survey age distributions.

the more developed and the less developed countries widened, inasmuch as the measure declined during this period by about 25 per cent in the more developed as compared with only roughly 11 per cent in the less developed regions. The declines were most marked in Northern America and the USSR, 34 and 32 per cent respectively, over the 20–25-year span, and least pronounced in Africa and South Asia, which had declines, respectively, of about 4 and 5 per cent.

The trends have not been uniformly downward, either in the more developed or in the less developed countries. The five-year averages, while masking certain important features of the trends, do provide an adequate summary of the movement of rates. Hence, it can be seen from annex table 74 that relative stability in some and rather modest declines in others have characterized birth-rate trends in the less developed regions. On the other hand, among the more developed countries, the trends have been sharply downward in some regions (Eastern Europe, the USSR and Northern America) and fluctuating in others (Northern and Western Europe).

Crude birth rates for the more developed countries converged during the decline from 1950–1954 to 1970–1974, so that the range among these countries is now somewhat more narrow, a margin of 10.8 points in 1970–1974, as compared with 15.4 points for the earlier period (1950–1954), when the birth rate in the countries at the top of the range[2] was more than double that for the country in which the lowest crude birth rate was recorded. In 1970–1974 the highest birth rate exceeded the lowest by just over 90 per cent. It is significant that, among these countries, the decreases over the 25-year period were sharpest where the levels had originally been highest (except for Australia and New Zealand).

A question of paramount importance in respect to the less developed regions is whether the decreases in crude birth rates observed for a few very small countries herald a general downward movement of important dimensions. Unfortunately, valid clues await the availability of more reliable statistics for these countries. Certainly the absence of reliably documented data for China, for which significant birth-rate declines are now assumed, as well as for the other large developing countries of Asia, and for Brazil and Nigeria, makes conjecture extremely hazardous.

The post-1960 declines in the crude birth rates of some less developed countries have been such that the countries of the world are no longer distributed bi-modally in respect to level of the crude birth rate. This alteration has rendered invalid the tenet that a birth rate of under 30 per 1,000 population systematically distinguishes the more developed from the less developed countries, as was clearly the case around 1960.[3] Indeed, crude birth rates are now slightly lower in several of the less developed countries than in one or two of the economically more advanced nations. These sometimes impressive changes reflect fertility reductions in about half a dozen Asian countries, as many in the Caribbean and five elsewhere, including Mauritius and Réunion off the coast of Africa. Furthermore, crude birth rates in several other less developed countries are approaching a level that, as little as a decade and a half ago, was found only among the economically more advanced nations. It is to be remembered, however, that the questionable validity of data for many countries and other reservations noted earlier necessitate caution in interpreting these data, particularly with respect to international comparisons.

The factors and conditions underlying these changes are numerous and their relationship to fertility complex, so that a simple and brief explanation of them is not feasible. However, some relevant factors are noted in the discussions below on birth rates for individual countries and regions.

Gross reproduction rates

The gross reproduction rate[4] is more suitable than the crude birth rate for measuring fertility and, apart from the effects of variations in the quality of data, it is also more satisfactory both for purposes of international comparison and for the study of trends, being unaffected by the age composition of the population or changes therein.

The latest available estimates of the gross reproduction rate for countries in which the necessary data for calculating it are available show that, for dates in the period 1970–1974 the measure varies from a low of 0.7 in the Federal Republic of Germany to 3.6 in Ethiopia (1970) and Honduras (1970–1972). A figure of 3.6 has also been estimated for Kuwait (1965). While the 0.7 rate recorded for the Federal Republic of Germany very probably represents the lowest fertility for any country, there may be countries for which the rate, if known, would exceed 3.6. This contention is based on the fact that accurate information is available for all low-fertility countries but that estimates are either rough or entirely lacking for some of the less developed countries where fertility is considered to be highest, particularly those in South-Western Asia and Western and Eastern Africa.

The gross reproduction rates generally confirm the trends observed in the crude birth rates for some regions, but not others. Where a conflict exists, it is due to the effect of the age structure on the crude birth rate, evidence of the weakness of that measure as an indicator of fertility level. In the vast majority of countries, however, the trend in the gross reproduction rate has been downward.

As with the crude birth rate, variations in the pace of decline in the gross reproduction rate have been such that its level no longer denotes a country's stage of eco-

[2] Excluding Albania.

[3] *Population Bulletin of the United Nations, No. 7–1963* (United Nations publication, Sales No. 64.XIII.2), p. 2.

[4] The number of live female births that a woman would have if, as she passed through the reproductive years (roughly ages 15–49), she had children at the same rates, i.e., had the same fertility schedule as that experienced by women during the year to which the gross reproduction rate relates. When doubled, the gross reproduction rate is roughly equal to completed family size.

nomic and social development. Whereas around 1960 a rate below 2.0 was found only for more developed countries, among both the more and the less developed countries for which a measure was available in 1973 or 1974 six of the more developed countries recorded gross reproduction rates above the lowest value found for a less developed country.

Africa

Levels of crude birth rates and gross reproduction rates

There is less reliable information available on fertility for Africa than for any other major region; complete vital registration statistics exist for only four countries, and these are not typical of Africa. Estimates of crude birth rates suggest that the range may be as wide as from around 25 births per 1,000 population in Mauritius (1972) to an estimated 53 for the Niger (1959–1960), where this level has probably been maintained (see annex table 101). Measures for Africa are, on the average, well above crude birth rates in other regions of the world. Within Africa, the estimated rates are higher in the eastern and western regions than in the remainder of the continent. Indeed, these two subregions may mark the world's belt of highest fertility. In the western region, the crude birth rates for seven countries equal or exceed the level of 50 per 1,000, the range for all countries in this subregion being from 40 to 53. The estimated gross reproduction rates vary in value from 2.6 to 3.5, with the level estimated at 3.0 or higher for 11 of the 15 countries.

In Eastern Africa the estimated crude birth rates ranged from 25 in Mauritius (1972) to 52 in Ethiopia (1970), and in 12 of the 15 countries that constitute this subregion the measure exceeds 46 per 1,000. The picture is confirmed by the gross reproduction rates, the extremes being 1.6 and 3.6 for the same countries; for all but three of them, the measures equal or exceed 3.0. The crude birth rates and gross reproduction rates for countries in Southern Africa are slightly below this level, ranging among the four countries from 38 and 2.4 in Lesotho (1966) to 50 and 3.2 in Swaziland (1966).

A majority of the 18 African countries classified by the United Nations as being among the least developed of the world are to be found in Eastern and Western Africa. Their crude birth rates vary from 40 in the Gambia to 52 in Ethiopia per 1,000 population and the gross reproduction rate ranges from 2.6 to 3.6 in the same countries. The low level of development in these countries is no doubt a factor that favours high fertility. Also, the excessively high mortality that has long characterized these and other African regions has very probably influenced attitudes towards childbearing; it is well known that among these countries norms for family size are high.

Similar conditions may be said to exist in the middle region of Africa, but the estimated crude birth rates and gross reproduction rates for these countries are generally much lower. The measures vary from 49 births per 1,000 population and a gross reproduction rate of 3.2 in Angola (1960) to 31 and 2.0, respectively, in Gabon (1960–1961). Even when account is taken of variations in the dates to which the measures relate and in the quality of data and methods of estimation, the figures for these countries would appear to indicate a comparatively low fertility belt in so far as Africa is concerned.

Scholars who have investigated this phenomenon more intensively have concluded that culture and conditions of health, including venereal disease and poor nutrition, affecting sterility and subfecundity, probably account for the lower fertility of this subregion and that these factors, along with marriage patterns and attitudes and behaviour in respect to sexual relations, may explain the wide range in fertility levels found for the African continent. It is prudent to acknowledge, however, that the truth is unknown and that for more certainty we must await better data and intensive research. It should be noted that some researchers have found evidence that fertility in Middle Africa is lower because it has already fallen. This evidence is that, in spite of the propensity for older women to forget births, in surveys conducted in the former Northern Cameroons and the Central African Empire they reported larger numbers than did younger women at the end of their reproductive period and proportionately fewer of the older women reported themselves as childless.[5]

In Northern Africa, at least in the larger cities, conditions of development are less favourable to high fertility than is the case with countries south of the Sahara desert. But the estimated crude birth rates nonetheless vary from moderate to high, ranging from 35 per 1,000 population for Egypt (1971) to 49 for the Sudan (1955–1956) and, except in regard to Egypt, for which no figure is available, the gross reproduction rates are uniformly high, exceeding 3.0. However, the measures are notably very weak for three of these countries and relate to different dates. But the measures may indeed reflect reality, for conditions that would facilitate a fertility decline among the more rural and therefore the majority of inhabitants, including the education of females, their employment outside the home in nonfamilial activities, as well as the use of modern contraceptive practice, are not yet widespread.[6]

Trends of crude birth rates and gross reproduction rates

Within Africa, there are only five countries—Algeria, Egypt, Mauritius, Réunion and Tunisia—for which statistics are of sufficient quality to describe trends in crude birth rates and gross reproduction rates. Annex table 102 provides data on trends in crude birth rates for four of these countries, i.e., excluding Algeria.[7] In each of these four countries, Tunisia excepted, the decline be-

[5] William Brass and others, *The Demography of Tropical Africa* (Princeton, New Jersey, Princeton University Press, 1968), pp. 346–347.

[6] *Population Bulletin of the United Nations, No. 7–1963*, p. 25.

[7] Birth rates for Algeria are available for the years 1953 and 1956–1967. The measures have fluctuated at a high level—from 42.6 (1953) to 52.1 (1963)—and no clear trend is discernible. The fluctuation may, in part at least, reflect the poor quality of available data.

tween the early 1950s and the early 1970s has indeed been appreciable, varying from 21 per cent in Egypt to 45 per cent in Mauritius. In the latter country the birth rate underwent a decrease of about 50 per cent from 1950–1954 to 1973, when it appears to have reached a temporary nadir, then moved upward again in 1974. Part of this increase was due to demographic factors. In addition, some aspects of development may have stimulated fertility, as frequently occurs. The policy instituted by the Government of Tunisia in the late 1960s, including the inauguration of a family planning programme and measures to improve the condition of women, appears to have supported a decline of fertility. The few gross reproduction rates in annex table 103 appear to support these findings.

The countries of Africa in which the declines have been greatest are comparatively small; they have effected improvements in health conditions, have undergone a decline in mortality, and have experienced other changes considered by scholars as prerequisites to a reduction of fertility. Although there is little, if any, reliable information on trends of birth rates and gross reproduction rates in the remaining countries of Africa, owing to a lack of appreciable change in social and economic conditions it can be assumed that, in the vast majority of them, fertility has remained comparatively stable for some time past.

In some countries, there may even have been a rise in fertility in response to better conditions of health and nutrition among women of reproductive age and to a breakdown in the structure of codes and practices that regulated fertility in the past, because these codes and practices were not compatible with the modernization and urbanization of the society.[8] However, this rise cannot be expected to persist. With declining mortality, families are likely to achieve the desired family size and, in particular, the number of sons, without any considerable child wastage and, consequently, to turn to modern and effective means of regulating family size. Gradual but continued improvements in levels of education, particularly among females, and increases in the proportions of women in economic activities that are not connected with family or home, in response to the international demands of women for wider participation in development, will also have a depressive effect upon fertility; and, as these changes occur, individuals will adopt efficient methods of fertility regulation, compatible with modernization, to replace those affected by the previous, more primitive social order. Thus, the fundamental question is not whether, but when, a decline will occur in the fertility of the African people.

[8] For a fuller discussion, see Gyorgy T. Acsádi, A. A. Igun and G. Z. Johnson, *Surveys of Fertility, Family and Family Planning in Nigeria*, Institute of Population and Manpower Studies Publication No. 2 (Ile-Ife, Nigeria, University of Ife, 1972), pp. 29–31; Gyorgy T. Acsádi, "Traditional birth control methods in Yorubaland", *Culture, Natality and Family Planning*, J. F. Marshall and S. Polgar, eds. (Chapel Hill, North Carolina, Carolina Population Center, 1976), p. 150; and R. W. Morgan, "Traditional contraceptive techniques in Nigeria", *Population in African Development*, P. Cantrelle and others, eds. (Liège, Ordina Editions, 1974), vol. 2, p. 114.

Asia

Among the Asian countries, satisfactory birth registration statistics exist only for Japan and six small countries (Cyprus, Hong Kong, Israel, Singapore, Sri Lanka and West Malaysia), which are in no way typical of nations of this continent. Measures for the remaining countries are estimates based on the best available data. Thus, the picture that can be drawn of Asian fertility is highly tenuous at best, for these countries contain less than 6 per cent of the continent's population.

Levels of crude birth rates and gross reproduction rates

According to the most recent estimates (see annex table 101), crude birth rates for countries of this region range from around 19 live births per 1,000 population in Hong Kong (1974), Japan (1974), and Singapore (1974) to 50–54 in Nepal (1965–1966) and 51 in Afghanistan (1972). The measures are generally lower in East Asia, although levels of 40 or more births per 1,000 population are estimated for Mongolia and the Democratic People's Republic of Korea. The estimate of 26.9 for China is very weak, owing to lack of any published vital registration data, survey or recent census data on which to develop a more reliable measure. It is useful to note that estimates of China's crude birth rate for 1970–1974 by various researchers place the measure at from 26.9 to 38.6.[9]

Many conditions in these societies support lower fertility, including the spread of education, and official government policy and programmes to achieve lower birth rates. Among three East Asian countries (Japan—which is more developed, Hong Kong and the Republic of Korea) for which gross reproduction rates could be calculated, the measures are similar in level to those found among more developed countries outside of Asia, being in the narrow range of 1.0 to 1.9 (see annex table 101).

Estimates for countries of Eastern South Asia place crude birth rates there in the range of 33.9 (Peninsular Malaysia, 1970) to 45.9 (Democratic Kampuchea, 1957–1962), if Singapore, whose birth rate reached a low 19.9 in 1974, is excluded. The gross reproduction rates vary from 1.1 in Singapore and 2.5 in West Malaysia to 3.5 for Democratic Kampuchea. There is no simple explanation for these variations; the values for several countries are for years that antedate much progress toward development, as well as the peak successes of the family planning programmes. But it must be acknowledged that there have been few or no intensive studies of the conditions of fertility in these countries and that knowledge is sorely lacking not only with respect to the levels of fertility but also to the factors affecting them.

The measures given in annex table 101 depicting moderately high fertility for Thailand are also out of date. However, statistics from a 1969–1970 longitudinal survey disclosed a high marital fertility rate of 256

[9] L. A. Orleans, "China's population figures: can the contradictions be resolved?", *Studies in Family Planning*, vol. 7, No. 2 (New York, The Population Council, 1976), pp. 54–55.

births per 1,000 married women aged 15 to 49 years, and indicated that in rural Thailand more than half of births were to women over 30 years of age.[10] The latter is indicative of the high fertility that is associated with childbearing over a very broad segment of the reproductive years.

Apart from Sri Lanka, where the crude birth rate and gross reproduction rate have reached 29.4 and 2.2, respectively, Middle South Asia is a region for which estimated fertility rates range from moderate to very high. India is estimated to have a crude birth rate of 37.0 per 1,000 population and a gross reproduction rate of 2.7. This suggests a completed family size of from five to six children, in spite of the Government's twenty-five year effort to induce couples to have smaller families. The data for Bangladesh and Pakistan are not for recent years, but it is not believed that declines of any significance from their high fertility levels have occurred.

Little is known of the crude birth rates and gross reproduction rates for the countries of Western South Asia, except for Cyprus and Israel, whose demographic statistics are reliable and relatively complete but atypical of the region. In 1974, the recorded crude birth rate for Cyprus[11] was merely 18.1 and the gross reproduction rate 1.1, measures representative of the lowest level of fertility in Asia. The 1974 rates for Israel are much higher, with a crude birth rate of 27.7 and a gross reproduction rate of 1.8, but are nonetheless well below what are estimated to be the levels in most countries of this region. A moderately high crude birth rate and gross reproduction rate have been estimated for Turkey, the figures being 40.0 and 2.6, respectively.

The relevant statistics for other Western South Asian countries, which represent the Arab cultures of Asia, are seriously inadequate both in terms of supply and quality. Such estimates as have been derived for them show a belt of high fertility. The birth rates of 45 to 50 per 1,000 and the sparse gross reproduction rates of 3.4 to 3.6 are, on the average, at least equal to, if not higher than, those of any other region of Asia. Unfortunately, the statistics needed for measuring the levels and trends of fertility and for in-depth analyses of the underlying factors are, for most of the countries, all but non-existent.

Trends of crude birth rates and gross reproduction rates

Annex tables 102 and 103 provide statistics of trends in crude birth rates and gross reproduction rates for Fiji and the seven Asian countries having satisfactory or reasonably reliable data. Clearly, fertility in these countries has undergone significant changes, from ranges in birth rates of 23.9–45.4 per 1,000 population in 1950–1954 to 18.6–34.3 in 1972. Comparison of the birth rates with the gross reproduction rates, which for most of these countries are now below the level of 2.0 once considered to be the dividing line between the fertility levels of more developed and less developed nations, shows that the decrease in crude birth rates did not necessarily reflect only real changes in fertility. In some cases birth rates decreased in response to changes in age structure or advances in age at marriage; in others a decline in marital fertility did actually occur.

In all the countries where marked decreases were recorded, changes occurred in the economy and in the social conditions that were supportive of lower fertility. These countries also had considerable investments in family planning programmes, and the economic and social changes are thought to be at least partially responsible for the success achieved in some of them.

Eight of the 28 least developed countries of the world are in Asia and, except for the Lao People's Democratic Republic, their fertility tends to be higher than that of most other Asian nations, excluding some of the Arab States. The range in crude birth rates among these eight countries is approximately from 42 per 1,000 population in the Lao People's Democratic Republic and 45–50 in Yemen to 51 for Afghanistan. Variations among these countries in the level of gross reproduction rates could not be ascertained, owing to lack of data.

Latin America

Levels of crude birth rates and gross reproduction rates

Data for calculating crude birth rates and gross reproduction rates are relatively more abundant for this region than for Asia and Africa. Among the 27 countries with populations of 250,000 or more, 17 have relatively complete vital registration statistics and, for the remaining 10, it has been possible to develop or obtain estimates from a variety of sources and methods.

There is a relatively wide range in the crude birth rates for countries of this region (see annex table 101) from a low of 20.9 for Uruguay in 1972 to 49.3 for Honduras in 1970–1972. The gross reproduction rates vary from 1.42 to 3.6, with the lowest and highest values also relating to Uruguay and Honduras.

Within Latin America, crude birth rates and gross reproduction rates are lowest for the more developed countries of Temperate South America (Argentina, Chile and Uruguay) and among countries of the Caribbean. However, these measures are no longer systematically lower in Temperate South America than elsewhere within the region, so that the birth rates and gross reproduction rates for some Caribbean countries are now below those recorded for Chile. In Argentina, Chile and Uruguay, the crude birth rates of 22.9, 28.5 and 20.9 per 1,000 population, respectively, are considerably above the rates recorded for the vast majority of more developed countries in other regions. But, because the crude birth rate is influenced by the age structure of the population, international comparisons based upon it can yield misleading results. The gross reproduction rates, which are not influenced by differences in age structure, confirm lower fertility in Puerto Rico and Trinidad and Tobago than in the more developed countries of Argentina and Chile, and they verify also that fertility in the countries of Temperate South America

[10] C. Suvanavajh and P. J. Donaldson, "Thailand—East Asia review, 1973", *Studies in Family Planning*, vol. 5, No. 5 (May 1974) p. 170.

[11] With Japan and Singapore.

exceeds the level observed for other more developed regions, excluding Oceania. But, while in the countries of this region the two-child-family norm has not yet fully emerged as it has in other more developed regions, the movement in that direction is clearly evident.

The comparatively moderate fertility levels observed for many of the Caribbean countries are a relatively recent phenomenon. According to estimates for the most recent year during the period 1970–1974 for which data are available, crude birth rates varied upward from 22.4 in Martinique to 46.4 in the Dominican Republic, though only the latter and Haiti, one of the 28 least developed countries of the world, had rates as high as 35 per 1,000 population. On the whole, observation of the gross reproduction rates, which ranged from 1.54 for Puerto Rico in 1972 to 3.5 for the Dominican Republic in 1970, indicates that fertility may be higher in some Caribbean countries than the crude birth rates suggest, owing to the fact that women of reproductive age constitute a relatively low percentage of the total populations. This applies particularly to Martinique and Guadeloupe, as well as to Jamaica, where emigration appears to have been age-selective,[12] leaving in the country comparatively fewer women of reproductive age, whose fertility is moderately high and yields a gross reproduction rate of 2.71.

Middle America, excluding Costa Rica and Panama, remains a region of moderately high fertility. But in these countries the crude birth rates of 28.5 and 31.2, respectively, already approximate levels that only a decade ago were not found among the less developed countries. The same is true with respect to their gross reproduction rates.

Among the remaining countries of Middle America the rates ranged from 40.3 for El Salvador in 1973 to 49.3 for Honduras in 1970–1972. The gross reproduction rates varied from 2.8 for Guatemala in 1973 to 3.6 for Honduras in 1970–1972. The crude birth rates and gross reproduction rates that have been recorded or estimated for the countries of Tropical South America lie well within the range of those derived for Middle American countries. This is compatible with the economic and social changes that have characterized some countries of this region in recent years, resulting in more moderate fertility. The more obvious examples, as shown in table 101, are Venezuela (1973), Suriname (1970) and Brazil (1970), where the crude birth rates are around 36 per 1,000 population and the gross reproduction rates range from 2.4 to 2.7.

Trends of crude birth rates and gross reproduction rates

Trends in these rates could be assessed for only 17 countries of Latin America (see annex tables 102 and 103). Although fertility remains relatively high in many countries of this region, including parts of the Caribbean, there is some evidence that in recent years more or less moderate over-all declines may have occurred in the majority of these countries. But in some countries, where a comparison of fertility levels between 1950 and 1970–1974 shows noteworthy decreases, there was in the interim a temporary rise in birth rates and/or gross reproduction rates. In Venezuela, for example, gross reproduction rates increased from 2.8 in 1950 to 3.3 in 1960, before declining to 2.6 in 1970. These measures, supplied in annex table 103, show a similar pattern for a number of other countries.

Information is lacking on the factors underlying these temporary increases, but it seems reasonable to assume that amelioration of health conditions, as well as improvements in other indicators of the level of living contributed to the upward trend in certain countries. The possibility that improved birth registration also contributed to the increases cannot be ruled out.

Among the six Caribbean countries with 250,000 and more inhabitants for which the data are adequate to assess trends in crude birth rates, there are two in which a rise appears to have occurred either in the late 1950s or early 1960s: Cuba and Jamaica. The five-year averages conceal a similar occurrence in Martinique and, to a lesser extent, Trinidad and Tobago also. The gross reproduction rates confirm this temporary upsurge in fertility, not only in these countries but in Guadeloupe as well.

The Middle American countries have exhibited divergent trends over the period under review. On the one hand, Costa Rica had a relatively weak rise during 1955–1959, followed by a decrease of approximately one third in the crude birth rate (1955–1959 to 1970–1973) and an even greater drop in the gross reproduction rate (1960–1970). Compared with this, the most marked fertility decrease in Latin America, Mexico's crude birth rate has remained remarkably steady over the past two decades, fluctuating slightly upward since 1970.

In two other Middle American countries where the data are adequate for an assessment of trends, El Salvador and Guatemala, crude birth rates in 1973 were somewhat above 40 per 1,000 population in spite of decreases of some 17 per cent over two decades. However, for both countries, as well as Panama, the gross reproduction rates depict a fertility trend similar to that described above for several Caribbean countries, in that the measures increased before declining during the 1960s; in the case of El Salvador and Guatemala, this is an indication that the crude birth rates have been influenced by changes in the proportions of women aged 15–49 years.

Crude birth rates for Argentina and Chile, in Temperate South America, have moved more or less steadily downward but, inasmuch as the rates in these relatively more developed countries were already at moderate to low levels in the early 1950s, the declines since then have not been very marked. Indeed, during 1955–1959 and 1960–1964 Uruguay experienced a temporary increase in the crude birth rate. Trend data for the gross reproduction rate are available for Argentina and Chile. The rates for Argentina merely fluctuated during the two decades of interest, while Chile appears to have had

[12] "Fertility trends in the world", *The Population Debate: Dimensions and Perspectives; Papers of the World Population Conference, Bucharest, 1974*, vol. I (United Nations publication, Sales No. E/F/S.75.XIII.4), p. 212.

a slight, temporary rise in fertility in the late 1950s and early 1960s.

Information on trends of fertility in countries of Tropical South America is very sparse. The crude birth rates for Guyana, Surinam and Venezuela have shown a moderate decline since 1950–1954. Venezuela's gross reproduction rate rose about 18 per cent between 1950 and 1960, followed by a 21 per cent decline over the succeeding decade. However, for a satisfactory appraisal of changes in this region, it will be necessary to await improvements in the supply and quality of relevant statistics for Brazil and other countries that are sufficiently representative of the region.

The patterns of fertility change in Latin America clearly reflect the widely varying social, economic and political conditions that characterize the region. Most of the countries experienced some decreases, however modest, between 1960 and 1970, while the opposite trend was rather common during the preceding decade. The fertility declines in many of the Caribbean countries may have been in response to rising aspirations on the one hand or to sometimes critical conditions of unemployment and marginal employment, on the other. Similarly, it is possible that in some countries the substantial emigration of women of reproductive age provided those who remained with greater opportunities to marry or to form other unions and that this, along with generally better health conditions, contributed to the rise, albeit temporary in some cases, of gross reproduction rates.

It would appear that national family planning programmes contributed to, but, with the possible exception of the programme in Barbados, did not precipitate, the fertility decreases in these countries and that, in some, such as Jamaica, the programme may have had little or no effect.[13] It has been implied that in this region the downward movement of fertility may have been a response also to the area's relatively great density of population. Among the countries with data suitable for the observation of trends, only Chile and Costa Rica, in the remaining regions, registered substantial declines in crude birth rates and gross reproduction rates. The considerable decreases in these countries have been attributed to the rising aspirations that accompany economic and social development and, in Chile, to increased political awareness and consequent altered aspirations of the masses.[14] Thus, by implication, it would appear that, in these countries also, the national family planning programmes provided the means but not necessarily the stimulus for fertility regulation.

The relative stability of fertility in much of Middle and Tropical South America requires explanation, but unfortunately information on that score is sorely lacking. Perhaps the stability is due to the comparatively more sparse settlement patterns, which may have generated a sense of well-being or perhaps, owing to the more or less sluggish movements of the development indicators, the threshold for change in attitudes and behaviour with respect to fertility and reproduction has not yet been achieved.

Such conjectures, of course, are no substitute for the data and analytical studies capable of establishing the nature and cause of changes in fertility levels. Instead, they merely point to the wide gaps in our knowledge.

Developed regions of Europe, Northern America and the USSR; Australia and New Zealand; Japan

Because vital registration statistics are complete and the results of reliable population censuses, taken at relatively short intervals for a long period of years, are available, crude birth rates and gross reproduction rates of adequate quality are known for 1950 and later years for virtually all of the economically more developed countries.

Levels of crude birth rates and gross reproduction rates

It is common knowledge that fertility is now uniformly low in the more developed countries and that, in contrast with the picture around 1950, crude birth rates as high as 20 per 1,000 population are no longer usual (see annex table 102). The range of crude birth rates in these countries remained wide in 1974, however, the highest and lowest measures being, respectively, 22.3 for Ireland and 10.1 for the Federal Republic of Germany. The gross reproduction rates confirm these low levels, varying for the same two countries from 1.9 to 0.7 (see annex table 103).

The crude birth rates do not vary systematically by region. In 1974, measures in excess of 16 per 1,000 population were found in all regions except Western Europe and Northern America. Gross reproduction rates of 1.0 and below are least common in Southern and Eastern Europe and Oceania, while they are more or less characteristic of Western and Northern European countries.

It is noteworthy that the level of these fertility measures is not associated with any particular form of government, nor, apparently, with any particular development indicators, e.g., *per capita* income or gross national product. Evidently, once the "threshold" level of development has been reached, these factors may not influence fertility. Desired family size and the pace at which couples and individuals prefer to achieve it apparently then become the more critical variables.

The level of the gross reproduction rates indicates that in most countries around 1974 the average family consisted of two children and that this had probably become the accepted standard among the economically more advanced nations.

Trends of crude birth rates and gross reproduction rates

The uniformly low crude birth rates and gross reproduction rates currently found for more developed countries were achieved after divergent past trends and variations in the timing of earlier changes. For these reasons, and because 1950 was a year of abnormally

[13] Among these countries, Barbados is the only one in which a national family planning programme antedated a fertility decline. See "Fertility trends in the world", *loc. cit.*, p. 214.

[14] "Fertility trends in the world", *loc. cit.*, p. 213.

high fertility for many countries owing to the "baby boom", it is not easy to assess the trends in these measures from 1950 onward.

In certain countries the pre-war nadir of the birth rate was reached in the 1930s; in others the lowest level achieved before the Second World War occurred just after the First World War, and in still others, the demographic transition had not been completed as late as 1950.[15] Countries in the first two categories generally experienced a "boom" in births that peaked around or just prior to 1950, so that, in many cases, the current (1974) levels followed upon a considerable decline in crude birth rates and gross reproduction rates. Among the third group of countries, the post-1950 trend was more or less a continuation of the downward secular trend. Ireland experienced a slight gain in the crude birth rate over the period under consideration, and in both Ireland and Spain there was an over-all increase in the gross reproduction rate.

Several features of the post-1950 fertility trend are noteworthy. The crude birth rates remained at relatively high levels from 1950 until approximately the mid 1960s in several countries, namely Australia, Canada, New Zealand, the USSR and the United States of America, before substantial declines got under way. But, except for the USSR, for which data are lacking, the gross reproduction rates increased after 1950. They remained stable in Canada and the United States from 1955 to 1960 but continued to increase in Australia and New Zealand during that time. This comparison between trends in the crude birth rates and gross reproduction rates indicates that changes in the distribution of women within the reproductive ages depressed the crude birth rate. After 1960 continuous declines ensued in these countries.

Social policy, including legislation favouring induced abortion and measures to improve the condition of women obviously had a depressing effect upon the post-1950 trends of crude birth rates and gross reproduction rates in countries of Eastern Europe, where the rates reached low levels in the 1960s and early 1970s before increasing in response to reversals of policy affecting fertility.

Among the countries of Northern and Western Europe, crude birth rates followed one of several courses from 1950 to the early 1960s before continuing to move almost uniformly downward. In a few countries, notably Finland, France and the Netherlands, the decrease in the five-year average rates was uninterrupted. Another group of countries, which included Austria, the Federal Republic of Germany, Switzerland and the United Kingdom, experienced a rise in the birth rates that peaked in the early 1960s and thereafter declined. In several others, Denmark, Norway and Sweden among them, relative stability or a slight decline in the five-year average crude birth rates preceded a temporary upsurge in the early or late 1960s, after which a decline occurred.

The movement of reproduction rates sometimes conforms to, and sometimes diverges from, the trend of the crude birth rates for the Northern and Western European countries. In all cases, except Ireland, where the increase in fertility is confirmed by the gross reproduction rate, the measures were lower at the end than at the beginning of the quarter-of-a-century span. In many of these countries, the gross reproduction rates indicate a temporary increase in births per woman some time during the early-to-middle 1960s. In others, increases in the proportion of women entering the reproductive age as a result of the earlier "baby boom" appears to have inflated the crude birth rate in the late 1960s.

Among the countries of Southern Europe, there was a nearly uniform, continuous decline in the number of births per 1,000 population throughout the 1950s and 1960s, followed by an apparent levelling off or mild upsurge early in the 1970s. Spain is an exception to this trend. Apart from Italy and Greece, where the rates fluctuated during this period, the gross reproduction rates confirm the continued decline of fertility in Southern Europe.

Industrialization and modernization, which distinguish these more developed countries, have brought improved health; the education of the masses; an alteration of family functions making large families a liability; the secularization of society; and the rise of individualism. These and other changes shaped the insights and aspirations that contributed to the desire for family limitation. Some gaps remain, however, in the knowledge of the mechanism by which these conditions influence decisions and behaviour with respect to reproduction. Because it is acknowledged in the vast majority of these countries that individuals have a right to obtain the means of regulating fertility and because these means are widely available and generally known to those wishing to apply them and, further, because in this sphere rational behaviour largely prevails, the main questions relate to desired family size and the factors that influence it. A discussion of desired, as well as actual, family size is included later in the chapter.

B. Differential fertility

The significance of fertility differentials

The study of differences in fertility that exist among various subgroups within national populations is widely recognized to be an important aspect of several types of demographic research. First, a knowledge of fertility differentials aids in estimating growth rates for various segments of the population and in gauging the changes in population composition to be expected in the future. More importantly, assessing the extent of differences among various groups in a population is often the first step in identifying important determinants of fertility behaviour. Information on fertility differentials also provides a basis for projecting changes in the over-all

[15] The first group included France, Belgium, Germany and Italy; the second group comprised Canada, Denmark, Czechoslovakia, Australia, New Zealand, Spain and the United States of America; and the third included, among others, Albania, Bulgaria, Portugal and Yugoslavia. See, *Recent Trends in Fertility in Industrialized Countries* (United Nations publication, Sales No. 57.XIII.2), pp. 4–7.

level of fertility that may be expected with shifting social and economic conditions. Finally, information about fertility differentials helps to explain, at least in part, the variation in birth rates observed from one country to another.[16] (For a multiple regression analysis of factors related to fertility, see section F of the present chapter.)

The aim here is to review the current evidence available concerning the variations in fertility observed within countries between rural and urban residents, and among individuals or couples with different levels of education.[17] The constraints of limited time and resources precluded the examination of other significant differentials such as the variations in fertility by the husband's occupation, household income and the woman's labour force status. An assessment of the current state of fertility differentials for various groups categorized by residence and education seems useful at this time, however, in view of the rapid urbanization and rising educational levels in many high-fertility countries and the widespread interest in the possible effects these changes may have on the general level of fertility in Africa, Asia and Latin America.

Quality of the data and limitations of the analysis

In most countries, especially areas of high fertility, the study of differential fertility suffers from a serious lack of data. Because relevant birth statistics are lacking for most less developed countries, studies of fertility differentials have relied heavily on measures of fertility derived from survey and census data, such as the child-woman ratio and the average number of children born alive to women of given ages. In view of the known deficiencies of the child-woman ratio as a measure of fertility, the present discussion omits this widely available indicator and instead uses data on parity and scattered estimates of current birth rates to document differences in fertility based on rural/urban residence and level of education.

Excluding, for the most part, low-fertility countries for which statistics are of adequate quality, questions asked about parity in surveys and censuses often produce underestimates of the lifetime average number of children "ever born", because of incomplete reporting of past births, especially by older and less educated women.[18] Another fairly common deficiency found in parity data is the "zero-error" that occurs when enumerators fail to make an entry for childless women.[19] Moreover, other measures of fertility available for high-fertility countries, such as survey estimates of current birth rates, are also usually biased because of the tendency of some women either to forget recent live births or to misreport the timing of past births.

While the errors suspected in parity reports undoubtedly affect the precise level of fertility indicated for rural and urban residents and women with varying degrees of education, the impact of these errors on the over-all pattern of fertility differentials is generally unknown. It seems likely, though, that many of the errors affect to a greater extent the parity reported by rural women and less educated women, and that the total effect is an underestimation of the range of differences found among women with differing residential and educational backgrounds. Because of the general uncertainty that exists about the reliability of data for many high-fertility countries, only the direction and general magnitude of the differentials are emphasized in this report.

In addition to the difficulties imposed by wide variations in the quality of data, the interpretation of parity measures of fertility presented in this section are subject to other limitations. One of the most useful measures derived from reports of past childbearing, the number of children "ever born" to women by the end of the reproductive period, for example, refers to the fertility of women over a long and indefinite period and thus is not a very useful index of more current levels of fertility. The parity of younger women, while relating to fertility in a more recent period, is more difficult to evaluate, since the measure reflects variations in the timing of births as well as differences in ultimate family size. Further, in the following analyses, it has been necessary, for want of uniform data, to use whatever acceptable measures were available for different countries.[20] As a result, international comparisons can be made in only a few instances and then only with much caution.

Fertility differentials in countries of Africa

Rural/urban differentials

In Northern Africa, approximations of current age-specific fertility rates are available for rural and urban women in Algeria, Egypt and Morocco (see annex table 104). The rates for Egypt, which are based on vital statistics data, and the survey estimates for the other coun-

[16] Of course, the advisability of using data on differential fertility for any of these types of analysis depends on the plausibility of underlying assumptions and the quality of the data available. For further discussion of this subject, see *Population Bulletin of the United Nations, No. 7–1963*, chap. VIII, which also contains a summary of the findings of studies on rural/urban and educational differences covering the early post-war period.

[17] For a recent discussion of the limitations of child-woman ratios, see Simon Kuznets, "Rural-urban differences in fertility: an international comparison". Proceedings of the American Philosophical Society, vol. 118, No. 1 (February 1974).

[18] The tendency for the number of children ever born to decline with age for women past the reproductive period is observed in many censuses and very likely results from this type of memory lapse.

[19] The substantial proportion of very young women listed in the category for unknown parity in many census tabulations is probably due to this error; indirect enumeration may also contribute to this problem; for a further discussion of measurement errors and methods of adjustment, see M. A. El-Badry, "Errors in parity data", *International Population Conference, Ottawa, 1963* (Liège, International Union for the Scientific Study of Population, 1964).

[20] In particular, differences in the age, marital duration and marital status of women covered by various fertility measures limit the comparisons that can be made of the differentials observed in particular countries. Equally significant are international discrepancies in the definition of residence and educational attainment. For a listing of recent rural/urban definitions in national census publications see *Demographic Yearbook, 1973* (United Nations publication, Sales No. E/F.74.XIII.1).

tries undoubtedly underestimate the level of fertility in both the rural and the urban population, but the measurement errors probably minimize, rather than exaggerate, the difference between the rural and urban sectors. In all the countries shown, urban fertility is slightly lower than rural fertility and differences are generally more pronounced among older women.

The pattern of lower urban fertility may be a recent one for countries in this region. Previous studies for Egypt, the only country with any adequate indicators of past rural/urban differentials, show little evidence of a rural/urban difference in fertility.[21] For Algeria, estimates of age-specific marital fertility rates for rural and urban areas indicate that a difference in marital composition explains at least part of the differential. Among younger women, the lower levels of age-specific fertility in urban areas are solely the result of the smaller proportion of married women, since the level of age-specific marital fertility in cities exceeds the rates for rural areas.[22]

In view of the great uncertainty that exists about the over-all level of fertility throughout tropical Africa, data concerning differentials must be interpreted cautiously. Most of the information concerning fertility levels comes from a series of surveys in the francophone countries of Western Africa undertaken in the late 1950s and early 1960s and from a number of more recent surveys and censuses in anglophone Africa.[23] Almost all the available survey and census data are affected by serious problems of age misstatement, underreporting of parity and inaccurate estimates of the number of births occurring in more recent periods. The study of differential fertility is further hampered by the fact that the techniques frequently used to adjust the data cannot easily be applied to the estimates of the fertility of various subgroups.

As a result of the uneven and generally poor quality of the fertility measures for tropical Africa, detailed data are considered for only two countries, Ghana and Sierra Leone. Even there, the information concerning fertility is probably distorted by many types of errors and in neither country can the prevailing patterns be thought of as typical or representative of Western Africa, let alone the whole of tropical Africa.

Smaller completed families appear to be a characteristic of urban women in all the major regions of Ghana, and a more pronounced differential is observed between women from the capital city of Accra and the surrounding rural area.[24] There is some evidence that the fertility of urban women may have been somewhat lower than rural fertility for at least half a century.[25] This should be a warning not to accept uncritically the assumption that the existence of a rural/urban fertility differential indicates the beginning of the transition to lower fertility. Since the practice of contraception is rare in tropical Africa, it is most likely that the difference between rural and urban residents reflects long-standing variations in such factors as age at marriage, marital stability, the prevalence of diseases affecting fecundity, and also differences in adherence to customs and taboos related to post-partum sexual behaviour and breast-feeding. In Ghana, differences in age at marriage appear to explain much of the rural/urban differential observed in recent estimates of age-specific fertility.[26]

In the case of Sierra Leone, the evidence also points to lower urban fertility. The gap in the average parity of urban and rural women is evident by age 35 and the difference is substantially greater among women at the end of the childbearing period, with the average number of children "ever born" to women aged 45 to 49 ranging from 5.3 in Freetown to 8.8 in rural Sierra Leone. While contraception appears to be more prevalent in urban areas, variations in the proportions of women who are sterile and differences in marital stability probably explain some of the differential.[27]

For the rest of tropical Africa comparable and reliable measures of fertility differentials are generally lacking. Estimates of the general fertility rate for Benin (1961), the Central African Empire (1959–1960), Guinea (1955), Liberia (1970), Mali (1957), Senegal (1960–1961) and Zaire (1955–1957) show lower urban fertility in all of these countries except Zaire.[28] Because of variations in the composition of the rural and urban populations by age and marital status, the direction and extent of the rural/urban fertility differential is difficult to discern from these measures. Differences in marital status composition, for instance, appear to explain about half of the differential between rural and urban fertility in Zaire.[29] Additional factors contributing to higher urban fertility in Zaire, and possibly other African countries too, may be better health conditions in cities and, more significantly, the relaxation of customs and taboos that formerly regulated post-partum sexual behaviour. A number of reports of higher fertility among women from major cities in Nigeria and several other countries of Western Africa also suggests the possibility that in many African countries departures from traditional sexual taboos, improvements in health, the decline of polygamy and the lower incidence of breast-

[21] M. A. El-Badry, "Trends in the components of population growth in the Arab countries of the Middle East: a survey of present information", *Demography*, vol. 2 (1965), pp. 140–186.

[22] Jacques Vallin, "Influence de divers facteurs économiques et sociaux sur la fécondité de l'Algérie", *Population*, vol. 28, No. 4–5 (July-October 1973), pp. 817–842.

[23] For a review of the studies, see John C. Caldwell, ed., *Population Growth and Socioeconomic Change in West Africa* (New York, Columbia University Press, 1975).

[24] See S. K. Gaisie, "Fertility trends and differentials", in John C. Caldwell, ed., *Population Growth and Socioeconomic Change in West Africa.*

[25] John C. Caldwell, "Fertility differentials as evidence of incipient fertility decline in a developing country: the case of Ghana", *Population Studies*, vol. XXI, No. 1 (July 1967).

[26] Hilary Page, "Fertility levels: patterns and trends", in John C. Caldwell, ed., *Population Growth and Socioeconomic Change in West Africa.*

[27] Thomas E. Dow, Jr., "Fertility and family planning in Sierra Leone", *Studies in Family Planning*, vol. 2, No. 8 (August 1971), pp. 153–165.

[28] Economic Commission for Africa, *Demographic Handbook for Africa* (Addis Ababa, 1975), table 18.

[29] H. Page, *loc. cit.*

feeding may lead to a rise in fertility during the early phases of urbanization and modernization.[30]

Educational differentials

The available data on educational differentials for the countries of Northern Africa generally show little variation between women with no education and those with only a few years of schooling. In Egypt, for example, among urban women the difference between the completed family size of illiterates and literate women with little or no schooling is very slight (see annex table 105). Noticeably lower fertility is found only among women who have finished primary school at least. The pattern among rural women from Lower Egypt shows a positive relationship between literacy and fertility. While a similar positive relationship between cumulative fertility and the lower levels of education was found in earlier studies of Egyptian fertility,[31] the likelihood of greater deficiencies in the reporting by illiterates makes it uncertain whether real differences in fertility exist among these groups of women.

Among older Algerian women, completed family size is negatively related to the education of both the woman and her spouse, but the fertility differential tends to be somewhat wider when women are classified by their own level of education (see annex table 106). The data for urban women in Tunisia and rural women in Morocco also show a weak negative association between the husband's education and cumulative fertility. Among urban Moroccan women, the expected pattern is found only among younger women.

The few studies of educational differentials in tropical Africa have generally shown lower fertility among more educated women, especially the small group of women who have had more than a primary school education.[32] In Ghana, little difference is observed in the parity of women 45 years and older between the unschooled and those with some primary education, but lower fertility appears to characterize those with advanced education. In the case of Sierra Leone, the completed family size of women with one year or more of formal education is noticeably lower than the parity of unschooled women, 5.4 in contrast with 7.6, but the differential appears to be largely a reflection of the differences observed in the fertility of rural and urban women.[33]

Fertility differentials in countries of Asia

Rural/urban differentials

Because there is little consistency in the type of fertility measures available and because the quality of the data varies widely, rural/urban and educational differences in fertility are reviewed separately for each of the major areas or regions of Asia: the area of East Asia and, within the area of South Asia, the regions of Eastern South Asia, Middle South Asia and Western South Asia.

In contrast with the rest of Asia, the data available for East Asia cover countries known to have relatively complete and accurate censuses (Japan, the Republic of Korea and Hong Kong). Unfortunately, these countries represent only a fraction of the total population of this area and cannot be considered representative of the other countries of East Asia, in view of the higher level of economic development and lower fertility that characterize Japan, Hong Kong and the Republic of Korea.

In both Japan and the Republic of Korea, the cumulative fertility of rural women exceeds urban levels, especially at the older ages (see annex table 107). Like the more developed, low-fertility countries in the west, the current differential in the completed family size of rural and urban Japanese women is relatively small. Data from censuses and vital statistics covering earlier periods reveal a larger differential during the transition to lower fertility, and a convergence in the levels of rural and urban fertility in the post-war period. The data for the Republic of Korea also show a pattern of fertility decline occurring first among urban women. During the early 1960s the crude birth rate fell at a faster rate in urban areas, but from 1966 to 1970 the rate of decline was more rapid in rural areas.[34]

The evidence for Eastern South Asia generally indicates that fertility is lower among urban women (see annex table 108). In Thailand, the completed family size of Bangkok residents is about 1.5 children below the level reported by rural women, with the fertility of provisional urban residents falling between these extremes. The average number of children ever born to currently married women in rural areas, small towns and large cities of Peninsular Malaysia follows a similar pattern.

The somewhat less reliable estimates of age-specific fertility rates derived from the 1962 census of Democratic Kampuchea show a total fertility rate of about 5 for Phnom Penh and 7 for the whole country.[35] The rural/urban total fertility rates calculated from data on "own" children under 5 years of age from the 1971 In-

[30] For a review of the evidence concerning higher urban fertility, see J.-M. Cohen, "Fécondité: facteurs", in Institut national de la statistique et des études économiques, *Afrique noire, Madagascar, Comores: démographie comparée* (Paris, 1967); Robert W. Morgan and P. O. Ohadike, "Fertility levels and fertility change", in John C. Caldwell, ed., *Growth and Socioeconomic Change in West Africa*, part 2, "Nigeria"; and Gyorgy T. Acsádi, "Traditional birth control methods in Yorubaland", in J. F. Marshall and S. Polgar, eds., *Culture, Natality and Family Planning* (Chapel Hill, North Carolina, Carolina Population Center, 1976), chap. 7.

[31] See M. A. El-Badry, "Trends in the components of population growth in the Arab countries of the Middle East: a survey of present information", *loc. cit.*

[32] For an additional review of the evidence on educational differentials, see John C. Caldwell, ed., *Population Growth and Socioeconomic Change in West Africa*, chaps. 9 and 16.

[33] For additional details, see Thomas E. Dow, Jr., "Fertility and family planning in Sierra Leone", *loc. cit.*

[34] Lee-Jay Cho, *The Demographic Situation in the Republic of Korea*, Papers of the East-West Population Institute, No. 29 (Honolulu, Hawaii, East-West Center, 1973).

[35] George S. Siampos, "The population of Cambodia 1945–1980", *The Milbank Memorial Fund Quarterly*, vol. XLVIII, No. 3 (July 1970), pp. 317–353.

donesian census also indicates slightly lower fertility in urban areas.[36]

Exceptions to this general pattern are evident in the results of the demographic survey carried out in the Philippines in 1968, which found somewhat higher rural fertility among women in the "ever married" category aged 35–44, but no difference among women aged 45–54. Moreover, the lower over-all level of current fertility in Philippine cities appears to be almost entirely the result of the later marrying age of urban women.[37]

In Middle South Asia, the only countries where there is any significant difference in the parity reported by older rural and urban women are Bangladesh and Sri Lanka (see annex table 109). Neither completed family size nor estimates of recent fertility levels in India and Pakistan indicate a substantial difference in the fertility of rural and urban women. Moreover, an analysis of the estimated age-specific general and marital fertility rates for India in 1964–1965 revealed that the major portion of the rural/urban differential in the over-all birth rate was due to differences in the age-sex-marital-status composition of the rural and urban population.[38] One important factor affecting the difference in birth rates seems to be the later marrying age of urban women.

Only fragmentary evidence is available for the rest of Middle South Asia. For Iran national estimates of rural and urban fertility are not available, but a 1965–1966 survey of women at Teheran and in four rural areas estimated the average number of children born to currently married women aged 45–49 to be 6.0 at Teheran and 7.6 in the rural districts.[39] It is probable, though, that the difference in the fertility of metropolitan and rural women overstates the gap in the completed family size of women from all urban areas and rural women.

Caution is also called for in interpreting the results of a recent demographic survey (1972–1973) of the settled population of Afghanistan.[40] The unadjusted estimates of the rural and urban total fertility rates (7.1 and 5.9) indicate slightly lower urban fertility, but a comparison of total fertility rates adjusted by the Brass technique reveal little difference between the rural and urban areas in the level of current fertility. While significantly lower urban fertility would not be expected in a less developed, high-fertility country like Afghanistan, both the unadjusted and adjusted data must be considered as very tentative estimates in view of the problems of under-reporting and age misstatement encountered in this survey.

Relatively little is known about the over-all level of fertility for most of the countries in Western South Asia, and the meagre data that exist on fertility differentials come from a variety of sources. Although the differing measures of fertility make comparisons difficult, the pattern of rural/urban differences appears to vary considerably. In Jordan, for example, the age-standardized number of children ever born reported in the National Fertility Survey undertaken in 1972 was 5.0 for urban women in the "ever married" category, 5.3 for residents of semi-urban areas and 5.2 for rural women.[41] Similarly, a detailed analysis of the 1961 Israeli census showed little systematic variation in the cumulative fertility of currently married non-Jewish women in different types of settlements.[42] A weak pattern of rural/urban differentiation is found in the completed family size reported by Syrian women. The average number of children born to women in the "ever married" category aged 45–49 years, as reported in the 1970 census, was 7.7 for urban residents and only slightly higher (8.1) for the rural population.

For Lebanon and Turkey, two of the more economically advanced countries of the region, the evidence points to substantially lower fertility in urban areas, especially in the major cities. The 1970 survey of the economically active population in Lebanon reported a lower level of current fertility for Beirut than for the rest of the country.[43] An earlier study, however, found that the rural/urban difference in completed family size differed for Christians and Moslems.[44] Among Christians the average family size ranged from 4.7 for urban dwellers to 6.8 for rural women, in contrast to levels of 7.2 and 7.5 for Moslems. In the case of Turkey, a significant difference has also been found to exist in the completed family size of rural and urban women. The differential, which is especially systematic and pronounced between rural women and women from metropolitan centres, is illustrated by the following figures on the average number of live births (standardized for marital duration) reported in the 1968 Population Survey: 4.2 for communities with less than 2,000 residents; 3.8 for places with 2,000–14,999 inhabitants; 3.4 for cities with a population of 15,000 and over; and 2.7 for metropolitan centres.[45]

[36] Geoffrey McNicoll and Si Gde Made Mamas, *The Demographic Situation in Indonesia,* Papers of the East-West Population Institute, No. 28 (Honolulu, Hawaii, East-West Center, 1973).

[37] Thomas W. Pullum, "Differentials in marital fertility", in Wilhelm Fleiger and Peter C. Smith, *A Demographic Path to Modernity: Patterns of Early Transition in the Philippines* (Quezon City, University of the Philippines Press, 1975).

[38] For India, see J. R. Rele, "Trends in fertility and family planning", in Ashish Bose and others, *Population in India's Development 1947–2000* (Delhi, Vikas Publishing, 1974), pp. 346–349; for Pakistan, see Ministry of Finance, Planning and Development, Statistical Division, *Population Growth Survey, 1971* (Karachi, 1974).

[39] J.-C. Chasteland, "Essai d'évaluation du niveau de la natalité et de la fécondité en Iran", in International Union for the Scientific Study of Population, *Contributed Papers, Sydney Conference, Australia, 21–25 August 1967* (Liège), pp. 348–354.

[40] *National Demographic and Family Guidance Survey of the Settled Population of Afghanistan,* vol. I, *Demography,* sponsored by the Government of Afghanistan and the Agency for International Development of the United States of America (Kabul, 1975).

[41] Hanna Rizk, "National fertility sample surveys for Jordan, 1972: the study and some findings", *Population Bulletin of the United Nations, Economic and Social Office in Beirut,* No. 5 (July, 1973), pp. 14–31.

[42] J. Matras, *Families in Israel,* part II. Population and Housing Census, 1961, Publication No. 39 (Jerusalem, Central Bureau of Statistics, 1968).

[43] Youssef Courbage and Philippe Fargues, *La situation démographique au Liban,* vols. I and II (Beirut, Publications de l'Université libanaise, 1973).

[44] David Yaukey, *Fertility Differences in a Modernizing Country, a Survey of Lebanese Couples* (Princeton, New Jersey, Princeton University Press, 1961).

[45] Serim Timur, "Components of growth. Section A—Fertility", in Haluk Cillor and others, *The Population of Turkey,* CICRED Monograph Series, World Population Year 1974 (Ankara, Hacettepe University, Institute of Population Studies, 1974).

Educational differentials

Much less information is available on educational differentials, but the pattern exhibited by various fertility measures is generally one of negative association between education and fertility. In each of the East Asian countries shown in annex table 110, education is a very important factor influencing the fertility of women in the "ever married" category. As would be expected with the over-all low level of fertility and the wide use of contraception in all sectors of the Japanese population, the difference in completed family size between the least and most educated women is noticeably smaller in Japan than the variation observed among women in Hong Kong and the Republic of Korea.

For the countries representing Eastern South Asia (Peninsular Malaysia, the Philippines, Singapore and Thailand), education appears to have a very significant impact on the number of children a woman bears (see annex table 111). Among older currently-married women in both Peninsular Malaysia and Singapore, completed fertility is significantly lower for those women with more than a primary education.

In Thailand and the Philippines, the average parity of "ever married" women is, on the whole, inversely related to education in both rural and urban areas. However, in both of these countries, as in Peninsular Malaysia, the completed fertility of women with a few years of primary education tends to exceed the number reported by women with no schooling. This pattern, which is found in several other high-fertility countries, may be the result of measurement error or of differences in fecundity and miscarriage rates. Another interesting point in the data for Thailand and the Philippines is the divergent pattern of rural/urban differences that emerges after education has been controlled in the analysis. Within educational categories rural fertility is consistently higher in Thailand, whereas in the Philippines in most cases it is lower.

The data for Middle South Asia further confirm the pattern of a weak negative or positive effect of low levels of education on fertility, with a strong negative effect apparent only at the higher levels. In both Sri Lanka and the urban areas of India a substantial drop in fertility is first noticed among women going beyond primary school (see annex table 112). Moreover, the Indian data show that the education of both the husband and the wife are negatively associated with family size, but that advanced education for the wife appears to have a greater impact. The scant evidence covering the other countries in this region includes the finding of a weak negative relationship between fertility and the husband's education for a sample of rural couples in Bangladesh,[46] and almost no difference in the current marital fertility of rural Iranian women with literate husbands and those with illiterate spouses.[47]

[46] John Stoeckel and Moqbul A. Choudhury, "Differential fertility in a rural area of East Pakistan", *The Milbank Memorial Fund Quarterly*, vol. XLVII, No. 2 (April 1969).

[47] J.-C. Chasteland and others, *Etude sur la fécondité et quelques caractéristiques démographiques des femmes mariées dans quatre zones rurales d'Iran* (Teheran, Université de Teheran, Institut d'Etudes et recherches sociales, 1968).

The surveys of women in Western South Asia also illustrate the depressive effect of education on fertility (see annex table 113). Among older currently married non-Jewish Israeli women, lower fertility is observed for women with at least a primary education, while a big drop in family size is observed for "ever married" Jordanian women with more than a primary education. After standardizing for marital duration, the average parity reported by currently married Turkish women shows a steady decline at each successive level of education.

Fertility differentials in countries of Latin America and the Caribbean

The number of live births reported in censuses and national surveys is the major source of information about differential fertility in the area of Latin America, including the Caribbean. One advantage associated with this source of data is the uniformity in the questions used by countries in this area to elicit data about parity and other population characteristics. However, most of the measurement errors previously discussed can be identified in the reports of parity by Latin American women. A problem of considerable importance is the sizable proportion of women, particularly at the younger ages, shown in many censuses as not reporting their parity.

Rural/urban differentials

Despite variations in the definition of rural and urban places in various countries, the number of live births reported by rural women are almost uniformly higher than the level recorded for urban women, with the differences being most pronounced among older women (see annex tables 114 and 115). The pattern of sharp residential differentials coincides with the findings of previous studies covering the early post-war period, which reported generally lower child-woman ratios and lower levels of average parity among urban women in Latin America and the Caribbean.[48]

For most countries, the trend in the rural/urban differential is not known. Information from earlier censuses in Argentina and Uruguay suggests a pattern of increasing differentials during the period of declining fertility and then a contraction during the phase of relatively low fertility.[49] For Mexico, on the other hand, there is some indication that the over-all level of fertility in urban areas may recently have risen somewhat, although still remaining lower than rural fertility.[50] Since most of the measures of current and past differentials are based either on the average parity of all women or on child-woman ra-

[48] Robert O. Carleton, "Fertility trends and differentials in Latin America", *The Milbank Memorial Fund Quarterly*, vol. XLIII, No. 4 (October 1965), part 2, pp. 15–35.

[49] A. M. Rothman, "Evaluation of fertility in Argentina and Uruguay", in International Union for the Scientific Study of Population, *International Population Conference, London, 1969* (Liège, 1971), vol. I, pp. 712–731.

[50] A. O. Zárate, "Fertility in urban areas of Mexico—Implications for the theory of the demographic transition", *Demography*, vol. 4, No. 1 (1967), pp. 363–373.

tios, differences in the incidence of marriage and age at marriage, as well as variations in marital stability, may account for rural/urban differences.

Because of the discrepancies in the marital status of the women covered by the measures in annex tables 114 and 115 and differences in the level of non-response in various censuses, it is hazardous to compare either the levels of fertility in urban and rural areas or the size of the differentials of particular countries. Another factor that may influence the contrast between rural and urban fertility in various parts of Latin America is the proportion of the urban populations in different countries that is composed of rural migrants. A wide variety of surveys throughout the area have found the parity of rural migrants to be generally higher than the level reported by other urban residents.[51]

Educational differentials

A factor that accounts for at least part of the variation in the fertility of rural and urban women in Latin America and the Caribbean is the substantial difference in fertility associated with various levels of schooling. As in the case of residence, there is a wide uniformity in the over-all pattern of the differentials. The cumulative fertility of women is negatively related to their level of education, regardless of whether all women, women in the "ever married" category or just currently married women are included, but comparisons of the range of differentials and the differences among women in the various educational categories are greatly complicated by variations in the fertility measures and in the classification of education. The absence of controls for age in many cases also obscures the underlying pattern of fertility differences resulting from the big differences in both the level of schooling and the fertility of younger and older women.

The classification of parity data by age and level of education for women in Argentina, Paraguay and Panama reveals a strong inverse relationship between education and fertility for women of all ages (see annex table 116). When women near the end of their childbearing years only are considered, the levels of education that have a strongly depressive effect on fertility vary from one country to another, but education at the secondary level, especially when secondary school is completed, is associated with much lower fertility (see annex tables 116 and 117). In Argentina, Jamaica, Panama, Puerto Rico and Trinidad and Tobago there is also a substantial difference in ultimate family size between the women who have completed primary school and the group with little or no education.

The data on educational differentials available for several other Latin American countries (see annex table 118) are much less useful, since no information is available on the age composition of women in the various educational and residential categories. Limited as they are, these parity reports do show that education differentiates the cumulative fertility of both urban and rural women. Additional information concerning educational differentials among urban women is provided by the metropolitan surveys sponsored by the Latin American Demographic Centre (CELADE). Among currently married women aged 45–49 years, completed family size is negatively related to the level of school last attended by wife and the level of education completed by her husband. Furthermore, there is a significant difference between the average family size of women with some secondary schooling and women whose husbands have completed primary school, and the completed fertility of their less educated counterparts (see annex table 119).

Fertility differentials in the more developed countries

Rural/urban differentials

For Northern and Western Europe and the more developed countries of North America and Oceania, the available evidence suggests that during the transition to lower fertility rural fertility was almost always higher than urban fertility and, in most cases, the rural/urban differential widened owing to more rapid declines in urban birth rates.[52] During the post-war period, though, the trend appears to have been one of a narrowing of rural/urban differences in many more developed countries overseas and in Western Europe. In Australia and the United States of America, for example, the over-all contraction of the rural/urban differential since the Second World War has primarily been due to the more rapid rise of urban fertility during the "baby boom" period.[53] For several countries of Western Europe, more rapid declines in rural fertility seem to have been the factor behind the post-war trend towards greater similarity in rural and urban fertility.[54] In Southern and Eastern Europe, changes in the rural/urban differential since the Second World War have generally followed a different pattern. For the USSR and several of the countries of Eastern Europe, rural/urban differences in fertility appear to have increased throughout most of

[51] For a recent analysis of the effect of residential background on fertility, see Centro Latinoamericano de Demografía and Community and Family Study Center of the University of Chicago, *Fertility and Family Planning in Metropolitan Latin America* (Chicago, University of Chicago Press, 1972).

[52] For reviews of differential fertility in Europe before and after the Second World War, see Gwendolyn Z. Johnson, "Differential fertility in European countries", in Ansley J. Coale, ed., *Demographic and Economic Change in Developed Countries* (Princeton, New Jersey, Princeton University Press, 1960), pp. 36–76; and D. V. Glass, "Fertility trends in Europe since the Second World War", *Population Studies*, vol. XXII, No. 1 (March 1968), pp. 103–146.

[53] For Australia, see *Population and Australia: A Demographic Analysis and Projection: First Report of the National Population Inquiry*, vol. I (Canberra, 1975); for the United States of America, see Ronald A. Rindfuss and James A. Sweet, "Rural fertility trends and differentials", *Family Planning Perspectives*, vol. 7, No. 6 (November/December 1975), pp. 264–277.

[54] See *Population Bulletin of the United Nations, No. 7–1963* (United Nations publication, Sales No. E.64.XIII.2), chap. VIII; and H. Gille, "Summary review of fertility differentials in developed countries", in International Union for the Scientific Study of Population, *International Population Conference, London 1969* (Liège, 1971), vol. III, pp. 2011–2025.

the post-war period because of more rapid declines in urban fertility.[55]

Recent urban and rural crude birth rates provide a rough indication of the current situation (see annex table 120). Generally, these measures show little difference between rural and urban areas in Northern and Western Europe, and a pattern of somewhat lower urban fertility for most of Southern and Eastern Europe and the more developed countries outside of Europe. In many countries, however, the actual differences in fertility are masked by significant variations in the age structure and marital composition of the rural and urban populations.

The lower rural birth rates for Greece and Bulgaria, for instance, are mainly the result of distortions in the age structure due to the heavy out-migration of young adults from rural communities. For most of the other countries in Southern and Eastern Europe, the gap between the crude birth rates of rural and urban areas tends to underestimate the difference in the current level of fertility, which is illustrated by the more pronounced differential in rural and urban age-specific fertility rates (see annex table 121). The age-specific birth rates of rural and urban women in Bulgaria, Poland, Romania and the USSR indicate higher rural birth rates at all ages and relatively much greater fertility at the older ages.

Another indicator of generally higher rural fertility is the differences in the average number of children ever born reported by currently married rural and urban women in a number of recent surveys undertaken in Europe and the United States of America[56] (see annex table 122). At most durations of marriage the parity of rural women is higher, the differences in rural and urban childbearing in several cases being more pronounced for women near the end of the reproductive period. The generally larger rural/urban differential among women married in earlier periods may reflect the fact that in the early stages of marriage rural and urban women bear children at a similar rate but urban women end childbearing sooner than rural women. The smaller differential among more recently married women probably also indicates that as time passes the completed family sizes of rural and urban women are becoming more alike.

Educational differentials

Traditionally, a pronounced negative relationship has existed between education and the number of children ever born to married women in Europe and the other low-fertility countries. Recent studies, however, indicate that the differences among educational groups are contracting.[57] The results of the Economic Commission of Europe Comparative Fertility Study (see annex table 123) generally show that within a fairly narrow range the education of both the woman and her spouse is inversely related to the fertility achieved, which in this case is measured by the average number of children born to currently married women, standardized by marital duration.

Because of the relatively small size of a number of the samples and variations in the categorization of education, the data from the surveys displayed in annex table 123 provide only an approximate measure of the differentials. Differences between the least educated women and other women tend to be large, but only a small proportion of women fall in the lowest educational category. At the other extreme, differences among the two highest educational categories are often small and, in many cases, not significant.

Studies of differential fertility based on other surveys or census data generally confirm the fairly sharp inverse relationship between schooling and parity in Southern and Eastern Europe and Northern America. The 1961 population census in Israel found average parity of European and American-born women at the end of the childbearing years (45–49 years of age) to range from 4.0 for the least educated to 1.9 for women with post-secondary education. On the other hand, additional evidence from censuses and other surveys in Western Europe shows the emergence of a U-shaped pattern of fertility differences in several countries, the highest fertility being found among the least and the most educated women.[58] A recent analysis of data from the 1966 Australian census also indicates that the average number of children ever born to women near the end of the childbearing period is lower among women who have completed high school than among women whose educational attainment was above or below that level.[59]

A final aspect of educational differentials in fertility, which is of particular interest in countries characterized by substantial rural/urban differences in fertility, is the variation in educational differentials among rural and urban women (see annex table 123). In Poland, Hungary and Yugoslavia, the average number of children varies inversely with education among rural and urban women, thus revealing that the over-all educational differences are not merely a reflection of rural/urban differences. Findings from the 1961 Canadian census follow the same pattern and also show that, especially at the lower levels

[55] A detailed analysis is given in Jerzy Berent, "Causes of fertility decline in Eastern Europe and the Soviet Union: part II, Economic and social factors; part III, Family planning and population policies", *Population Studies*, vol. XXIV, No. 2 (July 1970), pp. 247–292.

[56] The results of the surveys are taken from *Fertility and Family Planning in Europe around 1970: A Comparative Study of Twelve National Surveys* (United Nations publication, Sales No. E.76.XIII.2); for a detailed description of the surveys, see *ibid.*, chaps. I and II.

[57] See *Economic Survey of Europe in 1974*, part II, *Post-War Demographic Trends in Europe and the Outlook until the Year 2000* (United Nations publication, Sales No. E.75.II.E.16), chap. V; and Léon Tabah, "Rapport sur les relations entre la fécondité et la condition sociale et économique de la famille en Europe", *Council of Europe Official Documents, Second European Demographic Conference, Strasbourg, 31 August–7 September 1971*, vol. III, chap. IV.

[58] For recent data, see Léon Tabah, "Rapport sur les relations entre la fécondité et la condition sociale et économique de la famille en Europe", *loc.cit.*

[59] See *Population and Australia, A Demographic Analysis and Projection: First Report of the National Population Inquiry*, vol. I (Canberra, 1975).

of education, rural women have considerably higher fertility than urban women.[60]

Needed data and research

First on the agenda for additional research is the need for better measures of the fertility of various subgroups in less developed countries, especially in Africa and Asia. Many of the errors observed in parity data from censuses and surveys, particularly the "zero error", could be reduced by better training and supervision of enumerators.[61] The addition of specific questions on the number of children who have died, or the number not living with the mother or the number born before marriage or from prior unions might also minimize the understatement of parity. In some cases, maternity histories may be the only way to elicit fairly accurate data on past live births. Because of the great difficulties in eliminating measurement errors, the gathering of additional information about the type and extent of errors commonly found in parity data would seem advisable.

The review of current measures of differential fertility also suggests some possible changes in the items used to describe residential status and educational background. The heterogeneity of the rural and urban populations in many countries minimizes the usefulness of this distinction. One obvious refinement that might be added to further studies of differential fertility, especially in Africa and Asia, is a classification of urban dwellers by birthplace or length of residence in an urban area. The study of educational differentials would also benefit from the wider tabulation of parity data by the woman's education, and the more precise classification of respondents by the type of school last attended and the last grade or level completed. Moreover, future studies using more comparable fertility data and more uniform educational categories may be able to identify the critical points at which education has a significant effect on fertility in various countries, and explore the reasons why the impact of education varies in different societies.

Finally, and of particular importance, there is the need for further studies of high-fertility countries that will identify the independent effects of factors such as education and rural/urban residence and bring into clearer view the intermediate variables that explain the association observed between fertility and various status characteristics. Part of this research will certainly lead to the analysis of other fertility differentials. One factor that may prove to be of considerable importance is the participation of women in the labour force before and after marriage.[62] In the more developed countries, the paid employment of married women is almost universally associated with lower fertility.[63] While there is evidence indicating more labour force activity among childless women, even among women with at least one child paid work outside the home is negatively correlated with fertility. In marked contrast, studies in less developed countries have not always found the fertility of working women to be lower. The discrepant findings may, in part, be due to the lack of widely available, effective contraception, and the relative compatibility of rearing children and working for many women in less developed countries.[64] More extensive studies of this topic in developed countries, though, have also shown that variations in the definition of female employment can be quite significant, which further suggests the need to explore this aspect of women's status in future studies of differential fertility.[65] This is a topic on which intensive research is sorely needed.

C. Ideal, desired and expected family size

The average "ideal" or desired family size is of interest to national officials concerned with policy making in respect to population and other aspects of social and economic development. It is, after all, the modification of "desired" as well as "achieved" family size that is the principal objective of national family planning programmes. Attitudes towards family size are of interest also to demographers for their predictive value in the formulation of fertility assumptions in population estimates and projections. However, the concepts of "ideal", "desired" and "expected" family size explain fertility behaviour and allow assumptions as to future fertility mainly for the low-fertility countries, in which childbearing is, for the most part, elective. Populations of the high-fertility, less developed countries, where fertility regulation is practiced by only a small part of the population, have not generally harboured such concepts. Often, it is only after persistent probing by interviewers that the respondent is able to reply. Even where women understand the concepts and are able to provide the information, the response is frequently: "It is up to God", or "As God wills". This attitude is also attributable in part to the fact that, because of high mortality, many children must be borne to ensure a family of moderate size, and partly to the preference for large families.

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[60] Jacques Henripin, *Trends and Factors of Fertility in Canada*, 1961 Census Monograph (Ottawa, 1972).

[61] This is not to suggest that unknowns should not be recorded as valid responses. El-Badry, for example, found that the elimination of the "parity unknown" category in the 1960 Egyptian census apparently resulted in the allocation of true "unknowns" to the zero parity category. For further discussion see M. A. El-Badry, "Errors in parity data", in International Union for the Scientific Study of Population, *International Population Conference, Ottawa, 1963* (Liège, 1964), pp. 121–129.

[62] Like education, work before marriage may mean that first marriage will be entered into at a later age and may ultimately result in lower marital fertility.

[63] For a review of European studies, see *Economic Survey of Europe in 1974*, part II, *Post-War Demographic Trends in Europe and the Outlook until the Year 2000* (United Nations publication, Sales No. E.75.II.E.16, chap. V); for a more general review, see Karen O. Mason and Abraham S. David, *Social and Economic Correlates of Family Fertility: A Survey of the Evidence*, Triangle Research Institute, Carolina Research Center (Chapel Hill, North Carolina, University of North Carolina, 1971).

[64] J. Mayone Stycos and Robert H. Weller, "Female working roles and fertility", *Demography*, vol. 4, No. 1 (1967), pp. 210–217.

[65] For example, the inclusion or exclusion of part-time workers or women who work for family enterprises may alter the results.

Availability, quality and international comparability of data

While data on desired family size from surveys have been available for some more developed countries since the late 1930s and early 1940s,[66] such measures became more generally available only over the past decade and a half and even more recently for the less developed countries. Unfortunately, many of these surveys have been limited to one or more cities or towns, or to a special population group, and in only a few of them did the sample cover the entire population of the country.

Problems of incomparability arise from the terms used in referring to family-size preferences. Depending on the wording of the questions, responses on family-size preferences in various surveys have generally pertained either to "ideal" or "desired" numbers of children but, in some surveys, these two terms have been used interchangeably. In respect to the "ideal" number of children, the reference is either to the personal view of the interviewed couple or to a more abstract concept of the general views prevailing in the country. Even in the relatively sophisticated surveys conducted in the United States of America, there is considerable overlap in individual responses to questions designed to distinguish ideal from desired family size. In some of the more developed countries "preference" refers to the number of children "intended", or "planned", as well as the number "wanted" or "desired". Another concept commonly applied in the more developed countries is "expected" number of children. Many surveys ask the interviewed couples about the number of children they expect to have, regardless of the number of children preferred. The results of these surveys are frequently used as an aid in determining the future course of fertility in the more developed countries, but such information is not generally available for the less developed countries. In addition to the problems of incomparability arising from the terms used to elicit family-size preferences, other features of this type of survey affect the validity of international comparisons. These features include such characteristics as the geographic area and population represented in the survey.

The results of these surveys are usually presented as averages for all women of reproductive age, so that where there is age misstatement, as is common in many less developed countries, it is mainly women in the 15–19 and 45–49 age groups that would be affected, but especially the latter. In a country where norms for family size are declining, understatement of age by older women would have the effect of increasing the average desired or ideal family size, since the norms could be expected to vary positively with age. If women overstated their age, the reverse would be true.

There tends to be a lack of agreement on the reliability of answers to questions on preferences or expectations regarding family size obtained from women in the less developed countries. It is generally considered that more research is needed on this topic. The correct interpretation of the replies to these questions also presents problems.

Levels and trends

Information on average "ideal", "desired" and "expected" number of children is given in annex table 124 for various countries at the most recent dates for which data are available. The most impressive aspect of the measures in annex table 124 is that, taking into account the wide dissimilarities among people in these countries, the range in what women or couples consider to be the ideal number of children is not very great. Among 40 less developed and more developed countries representing all the major regions of the world, the ideal number of children per family ranges from only 6.1 (Sierra Leone, 1969–1970) to 2.4 (Hungary, 1966); excluding Sierra Leone, the range is from 5.4 (Philippines, 1968) to 2.4.

As expected, individuals in the more developed countries tend to consider fewer children to be ideal than is the case in the less developed countries. In the European countries, the United States of America (1970), the USSR and Japan, the average "ideal" number of children is less than 3, ranging from 2.4 to 2.9 and indicating that among the economically more advanced nations the small-family ideal is widely shared. Conversely, in most of the less developed countries, women and couples tend to consider between 3.5 and 6.1 children as an ideal family and only in two of them, namely Brazil and Singapore, did the respondents indicate a preferred family size of around three or fewer children. It may be concluded that the majority of people in the less developed countries probably do not yet share the idea of the small family, but that they do not want very large families either. Families of moderate size clearly have the widest appeal, especially in the high-fertility countries.

A comparison of ideal, desired and expected family size would provide valuable information, particularly regarding population policy. In the few developing countries for which data could be examined (see annex table 124), expected family size exceeded what the woman or couple considered to be either ideal or desirable. Conversely, in the economically more advanced nations, expected family size tended to be smaller than what was considered ideal. The two exceptions were the United States of America (1970) and Yugoslavia (1970), where expected family size was greater than the ideal, despite the fact that in both countries the knowledge and means for family limitation are widespread.[67]

Owing to lack of data, trends can be observed for only two countries, namely the Republic of Korea and the Philippines. As shown in table 124, in the Republic of Korea, the "ideal" number of children reported in the 1965, 1966 and 1968 knowledge, attitude and prac-

[66] Judith Blake, "Demographic science and the redirection of population policy", in *Public Health and Population Change*, M. C. Sheps and J. C. Ridley, eds. (Pittsburgh, University of Pittsburgh Press, 1965), p. 50, table 1.

[67] For an analysis of this phenomenon, see *Fertility and Family Planning in Europe around 1970: A Comparative Study of Twelve National Surveys* (United Nations publication, Sales No. E.76.XIII.2), chap. V.

tice (KAP) surveys remained almost constant at 3.9. However, the results of two more recent surveys revealed the average "ideal" number of children to have declined somewhat, from 3.6 at the 1970–1971 KAP survey to 3.1 at the 1973 National Family Planning and Fertility Survey.

In the Philippines, there is evidence that "ideal" family size has also decreased, from a mean of 5.4 children in 1968 to 4.3 in 1972. Correspondingly, the expressed "desired" family size dropped from 5.1 to 3.9 children during the same period. The "expected" number of children also declined slightly.

The difference between the number of children that a woman or a couple considers to constitute a family of ideal size and the number of children living provides additional information for policy-making with respect to population. Where family planning programmes have been established for the purpose of regulating fertility, the appropriate analysis of the data on ideal numbers and numbers of children living should provide valuable information for programme strategies. However, an even more important factor usually missing in this comparison is the number of children desired, for this measure, when compared with the number of living children, affords an appraisal of the success of women in achieving their goals as far as family size is concerned.

The statistics in annex table 125 are not internationally comparable in respect to the population covered by the surveys. As shown in the table, they differ considerably with respect to dates, area covered and age and marital status of the woman. Except for Peninsular Malaysia and the Philippines (1968), whose figures cover all adult women, the measures are averages for all women of reproductive age. Consequently the age distribution of women in the sample affects the average number of living children. One fact that can be gleaned from these data is that the excess of average ideal over average family size, i.e., living children, is not very large, rarely exceeding one child. The more notable exceptions are in Nigeria and Sierra Leone, where large families are highly valued. And while fertility is estimated to be high in these two countries (with gross reproduction rates of around 3.3 and 2.9 or higher, respectively), infant and childhood mortality are also high, so that it could be expected that a woman of about 30–35 years of age or older would have fewer living children than she considered ideal. Sharper differences of two or more between ideal and actual numbers of living children are found for Peninsular Malaysia and the Philippines (1968), but these samples include women who have passed the childbearing ages, whose "ideals" reflect those of earlier generations of women, and whose young children were subjected to more unfavourable mortality conditions.

Thus, with few exceptions, women or couples in the less developed countries have, on the average, fewer living children than, in their view, represent the ideal. In the three more developed countries for which data are shown in annex table 125, i.e., Japan, the USSR and the United States of America, the average number of living children also fell short of the number considered ideal. In Japan and the USSR, women had, on the average, one child fewer than the ideal number; among women in the United States, the difference was about 0.5 children. It appears that, in these countries, the number of living children conforms more nearly to ideal family size, possibly owing to small-family ideals, low infant and childhood mortality, and the wide prevalence of contraceptive use.

Needed data and research

There is in general a paucity of data on these subjects for the less developed countries, as well as for many that are more advanced. Not only is there a need for surveys yielding such information, but it is essential that the survey and other research tools be sharpened to make the data meaningful. A series of successive surveys would permit valid comparisons of trends over a period of time, an area of analysis that cannot at present be explored for most less developed countries. Follow-up or "longitudinal" surveys, in which the same samples of women are reinterviewed would be particularly useful, in that they would permit an analysis of change over time in ideal, desired, expected and achieved family size. There is obviously a need for as much comparability as possible among the various surveys. Moreover, it is important that all necessary measures be taken to ensure that the data are processed and made available to interested technicians and policy makers far sooner after completion of the field work than is now commonly the case.

D. Nuptiality

The rate at which marital unions are formed and dissolved and the way in which they are dissolved, along with the age of individuals at the occurrence of these events, influence levels and trends of fertility and the need for accommodations and services. They also influence and are influenced by past conditions of fertility, mortality and migration and the ability of society to supply certain goods, services and opportunities. The following discussion of levels and trends of nuptiality and age at marriage is intended to provide a background for interpreting other related demographic phenomena, but particularly fertility levels and trends.

Availability and quality of data

The information available for assessing the frequency of marriage and trends in the rates, along with age at marriage, civil status and their trends, consists of census data on marital status by age, and vital registration data concerning the annual numbers of marriages and divorces, as well as the age of spouses at marriage. Annex tables 126 and 127 present the percentage distribution of the population by marital status for the 20–24 and 45–49 age groups. The proportion "ever" married at the younger ages is generally taken as an index of the timing of marriage, whereas the combined proportion classified as married, widowed and divorced at the older ages is a useful indicator of the lifetime propensity to marry (although it must be recognized that the propor-

tion of persons married at advanced ages does not necessarily indicate whether younger individuals will marry to the same degree). In addition, it has been possible to derive from official data crude marriage rates (see annex table 128) for 50 countries and crude divorce rates (see annex table 129) for 43 countries having statistics considered to be reliable. Annex table 130 presents the median age of women at first marriage for 35 countries. As even a cursory examination of these tables reveals, however, the availability of information by region varies appreciably. Moreover, there are important differences in data quality. Such variations, in conjunction with differences in the manner in which events are defined and recorded, variations in social and religious practices, and the diversity of legal provisions governing marriage and divorce, seriously affect international comparison.[68] Insofar as the data presented here are concerned, fairly complete and adequate information is available for Europe, Northern America and Oceania. Coverage is less complete for Latin America and, in general, less adequate. In the case of Asia, useful data exist for only seven countries, while information on nuptiality in Africa is limited to three countries.

Africa

Reliable official information concerning African marriage patterns is virtually non-existent and cannot provide an indication of conditions in this major region. For this report, information is available for Mauritius, Réunion and Tunisia only, though for Tunisia only crude rates of marriage and divorce can be reported.

Judging by census information, Mauritius and Réunion present somewhat contrasting patterns of age at marriage. Annex table 126 shows that in the former the proportion of females married at ages 20–24 fell sharply between 1952 and 1972. In Réunion, the corresponding percentage was already relatively low in 1954 and appears to have undergone a slight increase. Annex table 130, however, indicates that median age at marriage in Réunion has, if anything, declined somewhat between 1952 and 1970. This discrepancy may be due to the non-registration of consensual marriages, but it is likely that many such unions go unreported in census returns as well, as is indicated by the relatively high proportions single at both young and advanced ages. As a result, little can be said with certainty regarding trends in age at marriage in Réunion. In both countries widowhood, though declining, has played a substantial role in marital dissolution. The incidence of divorce has not been a major factor in Mauritius, but appears to be on the increase in Réunion. In the absence of additional data, little can be said concerning the significance of the crude rates of marriage and divorce for Tunisia.

[68] For a more complete statement of limitations concerning nuptiality data, see *Demographic Yearbook, 1968* (United Nations publication, Sales No. E/F.69/XIII.1), chap. II, pp. 6–39.

Asia and Oceania

It is lamentable that for Asia, the region containing most of the world's population, so little official statistical information should be available on the incidence and patterns of marriage. Information on marital status for two age groups is presented in annex table 127 for seven Asian countries only. Because of such limited coverage, and because these countries are not representative of the regions within which they are contained, the description that follows should be interpreted as pertaining to the individual countries, and not as suggestive of regional patterns or differentials.

Judging from the population aged 20–24 enumerated as "ever married" (i.e., currently married, widowed and divorced), age at marriage in Japan, which is a more developed country, has tended to be relatively late among both males and females throughout the period 1950–1970. The percentage ever married in 1970 for females aged 20–24 was 28.4 compared, for example, with 56.5 for Canadian women of comparable age in 1971. This is corroborated by the data in annex table 130, which show the median age at marriage of Japanese women to have varied between 22.6 and 23.7 throughout the years 1950 to 1970. On the other hand, by ages 45–49 a very high, but declining proportion of women was recorded as "ever married" in 1970. The proportion of women currently married at these ages is now particularly low because marriage conditions for them were significantly affected by the Second World War, as is evidenced by the high percentage of widows. The proportion of females divorced at these ages has been increasing and is now relatively high, although it must be noted that trends in the proportions of divorced women among those aged 30–44 years (not shown) have been in the opposite direction, making the over-all trend unclear. Crude rates of divorce shed little light on the situation, as they appear to have remained relatively stable at about 1 per 1,000 between 1950 and 1972. There has been a slight tendency for age at marriage to rise among women (see annex table 130) and among males it has been quite stable. Both of these observations imply that the rising crude rates of marriage shown in annex table 128 are a result of changes in age structure or other factors rather than a genuine increase in the annual incidence of marriage.

As is to be expected, the remaining Asian countries for which information is available show quite different marriage patterns from those of Japan. Around 1960, women in these countries married at much younger ages. In Peninsular Malaysia and Singapore for example, the proportion of females married at ages 20–24 was twice as high as that in Japan. Since around 1960, at least, age at marriage in Singapore has increased and Singaporean women now have a median age at marriage of about 23 years (see annex table 130). These countries share with Japan, however, the tendency for a relatively high proportion of both males and females to marry eventually. Furthermore, where comparisons are possible, it is seen that these percentages appear to have undergone a modest increase.

For Hong Kong, Singapore and Sri Lanka, the results of at least two censuses are available, and these data show that, while age at marriage during the 1950s was relatively low, there has been a clear tendency for it to rise. In Singapore, in less than a decade and a half, the proportion married at ages 20–24 declined from 66 to 35 per cent. Just as significant are the marked reductions in teen-age marriage (i.e., at ages 15–19) in that country from nearly 20 per cent in 1957 to less than 5 per cent in 1970. However, median age at marriage appears to have increased only slightly, from 22.9 in 1959 to 23.2 in 1973 (see annex table 130).

The proportions enumerated as married at ages 45–49 years have undergone significant increases as the result of sharp reductions in widowhood. On the other hand, no generalization is possible concerning divorce. At ages 45–49, the proportions of females divorced are significant in Israel and Peninsular Malaysia, whereas in the remaining countries they are much lower. Trends, where observable, do not appear to be well established.

Although the proportion enumerated as currently married at ages 45–49 among both males and females in Fiji increased somewhat because of moderate declines in proportions widowed and slight declines in proportions single at these ages, the single comparison that can be made (between 1956 and 1966) shows substantial reductions in the proportion married at ages 20–24 (see annex table 127). (Little is known concerning the incidence of consensual unions, but in view of the marked fertility decline in Fiji, it seems highly probable that these figures reflect an increase in age at marriage, rather than an increase in the formation of non-legal unions.)

Latin America and the Caribbean

Deficiencies in official statistics and problems of comparability are acute in the area comprising Latin America and the Caribbean region. In particular, data on proportions of single people are not completely reliable because they include many persons who are actually consensually united. So true is this for men that data concerning their marital status are not presented in annex table 126. The misreporting of age is also a significant factor in the area. A third factor that must be taken into account is that information in annex tables 128 and 129, although regarded as "complete", refers only to legal marriages. As a result, in countries where consensual unions are common, vital registration data do not reflect accurately the actual incidence of changes in marital status.

In most of Latin America, two types of unions are recognized that have a different legal status. The first, the civil marriage, represents a legally binding contract between spouses. The second, the consensual union, is not legally recognized, so that information concerning this type of union is available only where census practices provide for its collection. It should be pointed out, however, that consensual unions in many instances are considered just as binding in the moral sense as are legal unions and do not necessarily imply marital instability. In much of the Caribbean, and parts of neighbouring Latin American countries, yet a third form of union exists. This is the visiting union, not reported in official statistics, which is distinguished from the consensual union in that the partners do not share a common residence.

The proportion of women who begin and spend their years of highest reproductivity (20–29) in legal as against consensual unions varies widely. It has been possible to calculate for all countries except Guadeloupe and Martinique, on the basis of census data, the proportion of all unions at these ages that were of a legal nature. Around 1960, the proportion exceeded 90 per cent in Argentina, Brazil, Chile and Uruguay. At the other extreme, legal unions comprised less than 40 per cent of all unions at ages 20–29 in the Dominican Republic, Guatemala, Jamaica, and Panama. In the remaining 12 countries, between 50 and 90 per cent of all unions at these ages were legal. Where comparisons can be made, it is interesting to note that the proportion of legal unions has increased in Chile, Guatemala, Puerto Rico and Venezuela, declined slightly in Argentina, and remained the same in Costa Rica, Ecuador and Mexico.

At ages 45–49, the proportion of people in the "ever married" category has increased everywhere as a result of the universal decline in widowhood. Around 1950, the proportion of women recorded as "ever married" seems rarely to have exceeded 80 per cent. By the latest date for which data are available, the proportion is frequently as much as 85 per cent and in several instances (Argentina, Colombia, Cuba, Ecuador, Mexico and Puerto Rico) approximates or surpasses 90 per cent. Where this figure falls below 90 per cent, it may be assumed that the percentage is an underestimate, in view of the tendency of consensually married women to report themselves as single (never married) upon the death of their partners.

Trends in age at marriage are more difficult to interpret because of the doubtful accuracy of the reporting on marital status and because of the small number of censuses taken. In Costa Rica, Chile, Guadeloupe and Martinique, the proportions of persons married at ages 20–24 increased during the 1950s. In Guadeloupe and Martinique the proportion continued to increase during the 1960s as well, whereas in Costa Rica and Chile, as elsewhere, it declined during the 1960s. The declines in the proportions of people married at ages 20–24, when taken as an index of rising age at marriage, are consistent with the fairly widespread declines in fertility that took place in this region during the 1960s.

As has been suggested, little can be inferred with confidence from the crude rates of marriage and divorce presented for Latin American and the Caribbean countries in tables 128 and 129. Furthermore, in the case of divorce, financial, legal, and religious factors make the dissolution of legal unions particularly difficult in Latin America. However, statistics for women aged 45–49 (see annex table 126) suggest that in Argentina, Cuba and the Dominican Republic divorce has become an important factor in recent years, while in Puerto Rico the fig-

ure of 6.5 per cent for 1970 even exceeds that of the United States of America.

The more developed countries of Europe, Northern America and Oceania, and the USSR

Europe

In 1972 the number of marriages per 1,000 population varied among European countries from 4.9 for Sweden to 9.4 in Hungary. Excluding Sweden, where the incidence of legal marriage is apparently very low, the rates showed much greater uniformity, ranging from 6.2 to 9.4.

The trends in the incidence of marriage manifested by the rates in annex table 128 have been highly diverse. Being crude rates, they are affected by changes in age structure that have varied from country to country. In broad terms, however, the crude marriage rates indicate a downward trend in the incidence of marriages in countries of Eastern Europe until about 1964, followed in most of these countries by another upward trend extending into the 1970s. The countries of Northern Europe (with the exception of Ireland and the United Kingdom) tended to show a decline to about 1960, then a rise until about 1969, after which rates again tended to fall. The United Kingdom and Ireland have exhibited a steady rise extending into the 1970s. In Western Europe, moderate declines or stability appear to characterize the period between 1950 and 1964, but since then rates have risen in Belgium, France and the Netherlands, while tending to fall in the remaining countries of the region, particularly in the Federal Republic of Germany. Marriage patterns in the Southern European countries have also been variable. Since 1965–1969, however, most of these countries have experienced a rising trend in the proportions of women married at younger ages.

The result of the various changes in European crude marriage rates has been a significant narrowing in regional differences in the incidence of marriage. In 1950–1954 rates close to or in excess of 10 per 1,000 were recorded in most of Eastern Europe, Albania, the Federal Republic of Germany and Yugoslavia, while those of the rest of Europe (particularly parts of Northern and Southern Europe) were considerably lower, with that of Ireland being slightly over 5 per 1,000. By 1972, the rates of only four countries (Czechoslovakia, Hungary, Malta, and Poland) exceeded 9.0 and those of all but Sweden were close to 7 per 1,000.

No generalization is appropriate for Europe as a whole, for marriage patterns have altered and continue to change rapidly in some regions, while remaining stable in others. The data upon which this report is based, however, leave no doubt as to several fundamental changes that have taken place in most of Europe since the Second World War. Before 1940, it was characteristic of European populations, with the exception of Eastern Europe and the USSR, that among females, age at marriage was relatively high and that large proportions of them never married. In the immediate post-war years and continuing into the 1950s, all of Europe except France experienced a "marriage boom" similar to and closely associated with the "baby boom". This phenomenon consisted of both larger proportions of females married (see annex table 127) and at earlier ages (see annex table 130). The latter aspect of this change is clearly reflected in the increasing proportions reported as married at ages 20–24 (see annex table 127). These changes were especially marked in Northern and Western Europe. They took place in Eastern Europe as well, but to a lesser extent, for in most countries of that region the early and widespread marriage of women had long prevailed. In the countries of Southern Europe (except Malta) for which comparisons are possible, changes appear to have taken place more gradually. Significant increases in the proportions of married persons among young people of both sexes did not occur until the 1960s. In Yugoslavia such increases occurred only among females and in Malta decreases in the proportions of persons married at ages 20–24 indicated a rise in age at marriage. The crude marriage rates presented in annex table 128 do not reflect these changes, partly because the major increases took place before 1950, and partly because of changes in age composition.[69]

In most of Europe the trend towards earlier and more universal marriage continued through the 1960s and, although the trend has been less clear in more recent years, earlier marriage persists in most European countries. The course at the beginning of the 1970s has been less precise (see annex table 130), first because the pace of the trend towards higher proportions of married women slackened considerably in much of Northern and Eastern Europe, and secondly because the proportions of women married at ages 20–24 in these regions and parts of other regions either remained relatively unchanged or declined, suggesting stable or rising age at marriage. On the other hand, in most of Western Europe and Ireland, where proportions married at younger ages had been abnormally low, the percentage of women married at ages 20–24 years continued to increase considerably.

In Denmark and Sweden, however, the decline in proportions of females married at ages 20–24 was not necessarily related to an increase in the age at which conjugal unions are formed (see annex table 130); there is evidence that a considerable number of young people have begun to initiate conjugal life in consensual unions. These unions are not recorded in any official statistics, hence the decline in proportions legally married at younger ages in these countries (and perhaps in some other countries of Northern and Western Europe) may not reflect accurately the extent to which age at marriage has risen, if at all.

The proportion of persons "ever" and currently married at ages 45–49, suggested here as an indicator of the lifetime prevalence of marriage, must be interpreted

[69] For a more detailed examination of the influence of this factor, see *Economic Survey of Europe in 1974*, part II, *Post-War Demographic Trends in Europe and the Outlook until the Year 2000* (United Nations publication, Sales No. E.75.II.E.16), pp. 63–68.

with caution. It does not in all countries necessarily reflect the eventual behaviour of younger people. This is particularly true of those marrying after 1960, for it is still unclear whether the instances of lower proportions enumerated as married while in their early twenties represent a delay, or whether they will eventually lead to an increased avoidance of marriage. In addition, in certain countries that incurred severe population losses as a result of the Second World War and its aftermath, the cohorts most affected by that conflict are only now entering their late forties. Nonetheless, changes have taken place at these ages that signal a significant reduction in regional differentials. On the whole, the median age of Eastern European females at marriage declined up to about 1960, and thereafter tended to rise (see annex table 130).

The highest proportions of both men and women reported as "ever married" by ages 45–49 have been consistently recorded in Eastern Europe, Albania, Yugoslavia and the USSR. There have been relatively few changes in this pattern since the 1950s (with the notable exceptions of the German Democratic Republic and the USSR). Around 1950, close to 95 per cent of the female population was recorded as ever married in these countries, whereas in the rest of Europe proportions of 80–85 per cent were common. By the 1970s, however, the differences had narrowed considerably and a majority of the remaining countries of Europe now register figures approximating 90 per cent. Ireland continues to be the outstanding exception to any generalization concerning nuptiality. In 1971, while the proportions married at ages 45–49 had increased somewhat, more than 18 and 28 per cent of females and males, respectively, were reported as single at these ages.

While the proportion of women ever married at ages 45–49 reflects the over-all tendency to marry eventually, the proportions currently married may be heavily influenced by the incidence of widowhood and divorce, as well as the extent to which some never marry at all. There are several significant observations that may be made on the basis of annex table 127. At the beginning of the period under study there were no marked regional differences in the proportions currently married at ages 45–49. The figure for Bulgarian females (89.5 per cent in 1956) was exceptionally high, and proportions in Finland, Ireland, Malta and Northern Ireland were relatively low (less than 70 per cent). In the remainder of Europe, the percentage of women in this age group who were currently married varied between 70 and 80. Between the early 1950s and the latest date for which information is available, proportions currently married have increased everywhere by about 10 percentage points and the lack of clear-cut regional differentials has persisted, so that, for most European countries, proportions currently married at ages 45–49 among both males and females now vary between 80 and 90 per cent.

Two factors have contributed to the increase in the proportions of currently married women and a third factor has tended to have the opposite effect. Widowhood decreased significantly in Europe during the period under study and this decline was generally the major contributor to the growth in the proportions currently married. There was at the same time, an increase in the propensity to marry. On the other hand, particularly after 1960, the proportions of divorced women increased everywhere where comparisons are possible, except in France, the German Democratic Republic, Portugal and the United Kingdom. This is particularly evident from the civil status data for women. The prevalence of men who have been divorced is masked by their greater tendency to re-marry. The crude rates of divorce presented in annex table 129 show substantially the same pattern as that described by the census data. In addition, and most significantly, rates for the years 1970–1972 indicate no slackening of the tendency for the frequency of divorces to increase. Indeed, they appear to have increased at a faster pace in recent years.

Northern America

Although Canada and the United States of America have close cultural ties with Northern and Western Europe, their marriage patterns around 1950 more closely resembled those of Eastern Europe in terms of age at marriage and proportions eventually marrying (see annex table 127). However, the amount of increase in these proportions during the 1950s was smaller.

In the United States of America, these increases occurred primarily among the population aged 20–29, while proportions currently married among teen-aged girls fell relatively sharply, indicating a tendency for couples to marry during a fairly limited portion of the life span. However, from 1955 onward, median age at first marriage has remained more or less stable (see annex table 130). In Canada, on the other hand, there was a modest increase in the proportion of married teenagers, and a more sizeable increase in the proportion of individuals of both sexes married at ages 20–29 compared with that in the United States of America, although median age at first marriage is higher in Canada. Crude rates of marriage reflect essentially similar patterns in both countries, with declines between 1950–1954 and 1960–1964. A rise to relatively high levels has subsequently occurred in both countries. It must be recalled, however, that during the years 1965–1972 the girls born during the "baby boom" were reaching marriageable age and the resulting modification in the age structure of both countries is likely to have accounted for much of the increase. That the actual trend was probably a downward one tends to be borne out by the figures in annex table 127, showing declining proportions of married women among females at ages 20–24 in both Canada and the United States.

In Canada and the United States of America, the tendency for women to marry has always been relatively high compared with most of Europe. In the United States census of 1950, about 92 per cent of females aged 45–49 were "ever married", and this figure rose moderately to about 95 per cent in 1970. At the outset of this period, the comparable figure for Canada was slightly lower (88 per cent) and, owing to a more

rapid decline in the proportion remaining single, the relative number of women ever married increased at a somewhat greater pace; by 1971 the proportion of ever married females in this age group was only slightly lower (about 93 per cent) than that of the United States. In both countries widowhood declined, and the proportion of divorced women increased, but the change in the United States was more pronounced. In fact, it would appear that the significantly higher proportion of divorced women in the United States than in Canada largely accounts for the higher proportion of currently married women in the latter than in the former. No recent crude rates of divorce are available for Canada, but those for the United States in recent years have risen sharply and represent the highest reliably recorded for any developed country (see annex table 129).

Oceania

Trends in Australia and New Zealand are quite similar to the general patterns already described for Canada and the United States of America, except that in 1960–1970 the proportions married at ages 20–24 continued to increase. The proportions of females enumerated as married at the younger ages, however, are only slightly different from those of Northern America. At ages 45–49 the proportions ever married and widowed are also close to those of Northern America. On the other hand, the proportions divorced resemble those of Canada much more than those of the United States, and this is reflected in the levels and trends of crude rates of divorce shown in annex table 129.

Needed data and research

The primary requisites for determining the incidence and patterns of nuptiality are the complete registration of statistics of marriage and divorce, appropriately classified by age and other characteristics, and the availability of population census and survey data on civil status similarly tabulated. In addition, information is needed for national and subnational areas from special surveys concerning (*a*) marital histories (that permit the separate tabulation of those whose civil status has changed more than once and those married, divorced etc. for the first time); (*b*) the nature, frequency, and place in the life-cycle of consensual unions, in both the more and the less developed countries; and (*c*) the interrelationships of these phenomena with social, economic and cultural conditions.

The reasons behind the rising divorce rates present a further interesting problem. These reasons are still not fully understood and the factors underlying the trend, as well as the consequences for the family and other social institutions of the increasing incidence of divorce, are questions that warrant investigation. The trend towards later marriage also merits close attention. It is important to find out whether this trend represents a postponement or an avoidance of marriage and to what extent unreported consensual unions bias classifications of marriage by age. Closely related to the foregoing is the need to study further the factors underlying the timing of marriage, particularly in relation to other critical events in the life-cycle. The extent to which conditions vary for men and women should be taken into account.

Lastly, additional types of nuptiality analysis may be necessary, one of the most important being cohort analysis. The fundamental changes that have been observed in marriage patterns obviously reflect intergenerational differences and the behaviour of women whose marital careers are largely completed may be quite different from that of women on the threshold of marriage.

E. Fertility regulation*

Starting in the early 1950s in Asia, and at an accelerating pace in all developing regions, many countries have adopted policies and programmes aimed, among others, at fertility regulation. The present section attempts to assess the demographic aspects of such regulation, as reported in national family planning programmes that were initiated, supported and/or sponsored by national Governments. The activities under review may have been serviced by or through public health facilities, private clinics, government structure established expressly to facilitate family planning activities or other channels, provided that the services were dispensed under government auspices. The family planning programmes were generally strengthened by ongoing innovations in contraceptive technology. Annex table 131 provides summary information on family planning programme objectives and the main methods used to achieve them in 57 countries.

The demographic aspects of family planning programmes include the following: sex, age, parity, marital composition, residence and socio-economic status of the individuals for whom the programmes are, or should be, designed, i.e. the target population; the proportion of the target group that is actually reached; and, once that group has been reached, what the programme has achieved in the way of fertility decline, decreased sterility and subfecundity, and so on, depending upon programme goals. The first two aspects are mainly descriptive. Estimates of the target population are derived from census, survey and vital registration data on population composition and on levels and patterns of fertility among different population subgroups described in terms of rural-urban residence, literacy and/or level of education, age and other characteristics. Estimates of the proportion reached are derived from follow-up surveys and from the statistics produced by the programmes themselves, i.e. service statistics. The third aspect is concerned with the evaluation of programme impact in the light of stated goals, using analytical procedures that involve highly technical methodologies and sophisticated data. For a variety of reasons, including problems of data availability and the vast effort that a satisfactory evaluation of programme impact in all countries with family planning programmes would entail, the latter aspect is considered to be beyond the scope of this report.

* Prepared in collaboration with the World Health Organization.

For practical purposes, the achievements of family planning programmes may also be assessed in terms of the number and characteristics of acceptors, and it is this information that is discussed here. Given the limitations of the definition of "acceptor" discussed below, data on acceptors may be taken as a summary index of achievements in all aspects of the programme (i.e. management, information and motivation activities, services and so on), or they may serve in combination with other statistics as predictive indicators of programme impact on the fertility of the population served by the programme. However, acceptors can denote probable future change in fertility only if their continued use of contraceptives and the effectiveness of the contraceptives (use effectiveness) can be taken into account. These aspects are not discussed here.

Definitions and concepts

The term "acceptor" is roughly comparable to incidence, wherein new cases are counted over a certain time period. It is generally applied only to those who accept services from a programme operated, sponsored or supported by the Government and hence excludes private-programme or non-programme users.[70] In practice, the use of the term differs from one programme to another. It may refer to a "programme acceptor," i.e. a person who adopts any methods of birth control from the national programme for the first time, or a "method acceptor," wherein a person accepts a particular method from the national programme for the first time, even if that person had been using some other method previously within the same programme. Although the transfer of a person from one service area to another under the same national programme should not be considered as a new acceptance, faulty record-keeping may often result in the classification of such a person as a new acceptor.[71]

The term "user" has the connotation of prevalence, as opposed to incidence, by implying any utilization of family planning practices. The term "drop-out" refers to anyone who has dropped out from the clinic services, from the programme, or from a specific method. "Continuation rate" is defined as the proportion of an original group of adopters of a service who were continuing use of the service at a given subsequent time without any intervening lapse in such use.

Target-setting

To be operational, a programme's objectives and goals with respect to fertility reductions, as well as its other aims, have to be defined in terms of either simple and broad targets, such as the number of persons to be covered by the programme, or more complex measures such as the numbers of births averted. Targets may be set for attaining specific goals[72] under certain assumptions and estimates obtained from census and vital registration data, and from studies and surveys on the demographic characteristics of the population. The surveys may yield information on knowledge and attitudes towards family planning, and on the prevalence of family planning practice. Once the target population has been defined, the required personnel, clinics and supplies must be estimated on the basis of estimates of the average number of clinic visits per user per year, the number of clients who can be seen by a physician per unit of time etc.

An alternative approach would be to start with the most realistic assumptions concerning the numbers of medical and paramedical staff, the facilities and the supplies that can be allocated to the programme, and to estimate from these the number of users who can be serviced by the programme. This so-called feasibility approach cannot be strictly termed target-setting.

Quality of data

Statistics on acceptors and their characteristics are obtained from routine family planning service statistics, or from the reports forwarded by local family planning clinics and other service outlets to the central office. It cannot be too strongly emphasized that these statistics need to be used and interpreted with the greatest caution. No known standards are applied systematically in the data definitions and concepts, reporting, recording, processing or other procedures common in the collection, maintenance, processing and tabulation of statistical data. Because such standards are not applied and

[70] E. Grebenik and A. Hill apply the term to acceptors of both government and private programmes, rather than of the former alone. See their *International Demographic Terminology: Fertility, Family Planning and Nuptiality* (Liège, IUSSP, 1974), p. 27.

[71] This occurs when a rigorous definition of the concept of acceptor, is not applied in the service statistics, or when the service statistics system is not organized to deal systematically with this type of error. For instance, someone reinserting an intra-uterine device (IUD) should not be counted as a "new acceptor"; in the recording procedure of many service outlets, cognizance is taken of this and when the reinsertion is made in the same clinic and not too long after discontinuation, such acceptances are registered correctly. If the former acceptor has already been classified as a drop-out, or if she moves and obtains reinsertion in another family planning centre, her previous status is often not taken into consideration. Unless the circumstances of record-keeping permit careful attention to this and other important distinctions between acceptors, drop-outs and continuing users, the statistics extracted from the records will necessarily be faulty. The inclusion in the definition of acceptor of the "intent" to use a method may also be a cause of overestimating the number of new acceptors. This applies to all methods other than sterilization, abortions and IUD insertion and may, in certain countries, affect particularly acceptors of pill cycles, the rhythm method and condom use. A thorough discussion of the concept of "acceptor" is beyond the scope of this paper. For further information, see *Report of the Expert Group on Assessment of Acceptance and Use—Effectiveness of Family Planning Methods*, Asian Population Studies, Series No. 4 (United Nations publication, Sales No. E.69.II.F.15), pp. 6–9.

[72] Methodologies ranging from the fairly simple to the sophisticated have been used in setting targets for specific demographic goals. See United Nations Economic and Social Commission for Asia and the Pacific, *Some Techniques for Measuring the Impact of Contraception*, Asian Population Studies Series, No. 18 (United Nations publication, E.CN.11/1119); Gyorgy T. Acsádi, "Selected bibliography on measures, indices and methods of evaluating family planning programmes" (mimeographed document of the World Health Organization—DSI/74.55); J. A. Ross, "Acceptor targets" in International Union for the Scientific Study of Population, *Measuring the Effect of Family Planning Programs on Fertility*, C. Chandrasekaran and Albert I. Hermalin, eds. (Dolhain, Ordina Editions, 1975), chap. 3.

personnel are not trained particularly in interviewing and recording for statistical purposes, misreporting is common; underreporting or the failure of some service outlets to report on time, or at all, to the central agency is a problem, too. Omissions are also occasioned by the fact that acceptors of certain types of methods, such as the rhythm method, are difficult to count. But the most common source of error is overreporting in service statistics, due to the registering of the same person as an acceptor two or more times, as previously discussed. The extent of deficiency in service statistics varies markedly from one country to the next and from one service outlet to another within the same country. Analyses of service statistics returns from some countries have disclosed a duplication of acceptors estimated at as high as 30 per cent.[73] The extent of these deficiencies in data and of their variation by country is not known, and lack of such information diminishes confidence in analyses of acceptor data.

Availability of data

Annex tables 132 and 136 provide data on female acceptors of methods dispensed by a family planning programme or on the wives of male acceptors (such as wives of sterilized men), by year of acceptance and five-year age groups for recent years. Age is the most readily available characteristic of acceptors. Statistics classifying acceptors by number of living children are also available for some countries (see annex table 138). The countries reviewed have thus been selected from among those having family planning programmes on the basis of the availability of these two types of data. Data on other characteristics of acceptors, such as urban/rural residence or level of education, are included only if readily accessible.

Obviously, data on absolute numbers of acceptors alone would not, in most cases, provide an adequate index either of the extent of programme activities or of the impact of the activities upon fertility. The significance of the number of acceptors depends upon the size of the "eligible" population, as defined below. For the assessment of programme performance, use is made of ratios of female acceptors or wives of male acceptors to all married women in the same age groups. Unfortunately, the census data required for a calculation of acceptance rates for periods around 1970 are available for only a few countries. Another indicator of programme performance that relates acceptors to married women is the ratio of the former to the net one-year gain in the number of married women of reproductive age.[74]

Interpretation of data

It is not easy to determine what segment of the population is eligible to accept methods and service dispensed in a programme. Eligible persons consist of those at risk of pregnancy,[75] excluding those who wish to have a child at the time, and this group is by no means equivalent to the total number of married and consensually mated women of reproductive age who, when data are available, constitute the base commonly used for calculating acceptance rates.

Variations in acceptance are caused by many factors, and changes in the rates must be evaluated in the light of these factors, as well as from the standpoint of quality of the measures. Such variations may reflect changes in the age composition of married women due to alterations in age at marriage and the proportion marrying. Changes in mortality of married men or women, in divorce rates, and other factors, all of which are independent of the family planning programme,[76] affect the population eligible for programme service. Furthermore, the number of eligible women that have already accepted and continue to use a method could depress subsequent acceptance rates, without reflecting negatively upon programme performance.

A number of countries have reported large numbers of acceptors annually during the years 1970–1974 (see annex table 132). The importance of these numbers, however, is evident only when related to the population at risk, estimates of which are not available. An increase in the numbers of acceptors over a period of time might reflect either higher returns for programme investments or annually rising numbers of women at risk with the same ratio of acceptors to exposed women. For most countries the statistics in annex table 132 do not reveal a continuous increase in the numbers of acceptors, but rather annual fluctuations in these numbers. This lack of a consistent upward trend may be taken to reflect either variability of programme performance, i.e. erratic acceptance rates, or a decline in the population at risk and/or not using a method. Obviously, the former is the case in countries where the programmes are fairly new and comparatively small numbers of acceptors have been recruited, but in which the annual numbers of acceptors decline nonetheless. However, it is evident that in most of the countries the proportion of women of reproductive age who accept a method annually must have increased markedly over the years 1970–1974. The pace of the increase in acceptors in a majority of the countries far surpasses the increases that could occur in the proportion of married women aged 15–44 years.[77] In the absence of more refined data on women at risk, the married or mated female population of reproductive age serves as an approximation. It may be observed from the data in annex table 133 that, apart from women in Costa Rica (1973) and two countries of Asia,

[73] Thailand—10 per cent; Philippines—20 per cent; Iran—30 per cent. For further information, see W. B. Watson and R. J. Lapham, "Family planning programs: world review 1974", *Studies in Family Planning*, vol. 6, No. 8 (August 1975), pp. 216–217.

[74] This indicator has been proposed by R. J. Lapham and W. Parker Mauldin, "National family planning programs: review and evaluation", *Studies in Family Planning*, vol. 3, No. 3 (March 1972), p. 30.

[75] Eligible women are those mated and of reproductive age, but who are not sterile, pregnant, lactating or in a post-partum period and who do not wish an additional child at that time.

[76] Unless, of course, one of the aims of the programme is to advance the age of women at marriage.

[77] See, for example, the data in annex table 142.

there was only a small percentage of married (or mated) women aged 15–44 years among the acceptors.

The differences among countries in the acceptance rates reflect many factors, including the quality of the programme statistics and census data, so that the figures must be treated with the utmost caution. Statistics of acceptors may be misleading, even where they are of adequate quality or when, as in the following example, data on annual numbers of acceptors have not been corrected for duplication and substitution, and when continuation of use is low. In the Republic of Korea the total (uncorrected) number of acceptors for the period 1970–1974 was about 2,980,000.[78] The 1970 census of the Republic of Korea enumerated about 4,000,000 married women 15–44 years of age.[79] Assuming that nuptiality remained constant, and changes in age structure were slight, this figure would mean that about 75 per cent of the married population accepted some protection during this five-year period. At such a rate, the entire population of married females would have accepted some method in a very short time. However, it is also reported that, at the end of 1974, there were an estimated 1,120,000 active users.[80] Very probably these data reflect substantial numbers of women who were counted more than once as programme acceptors, or were included more than once because they switched methods, in addition to a large number of drop-outs; thus, the acceptance rate shown in annex table 133 for the Republic of Korea is probably an overstatement. This example also shows that a better index of programme performance would be the ratio of the annual number of active users of a method taken from the family planning programme to all married (or mated) women 15 to 44 years of age.[81]

From annex table 133, it will be seen that, among the 16 countries for which data on acceptors are available, there are marked differences in the proportion of married women of reproductive age who accept a method from the family planning programme. As noted above, however, this is due not necessarily to programme performance but, *inter alia,* to the duration of the programme, the number that have already accepted, their continuation rates, the numbers marrying annually, the definition of acceptor, and so on. From the evidence in annex table 133 it can be seen that the proportion of married women aged 15–44 years who accepted in a specified year ranged from less than 0.5 per cent in Mexico and Panama to over 16 per cent in Costa Rica.

Characteristics of acceptors

The demographic characteristics of acceptors have an important bearing on the success of a family planning programme. If one of the aims of the programme is fertility reduction, it is important to recruit women who are young and of relatively low parity. A knowledge of other characteristics of acceptors, such as literacy status, educational attainment and place of residence, is also helpful in identifying the groups who avail themselves of the programme's services as well as the groups toward whom additional recruitment efforts should be directed.

Age of acceptors

A helpful assessment of programme achievement may be obtained from a comparison of the proportion of acceptors below age 30 with the proportion of women at risk who are under 30 years of age. Married women in the relevant age groups are taken as an approximation for women at risk. The underlying assumption is that the impact on fertility will be greatest if women regulate fertility when they are in the peak reproductive ages.

The comparison just mentioned focuses upon the extent to which the programmes reach women who have not advanced beyond the most fertile ages. It has been possible to tabulate these figures for 10 countries and the results are presented in annex table 134. In six of the countries, the percentage of acceptors under 30 years of age is greater than the proportion of married women at risk who are under 30 years of age. This means that younger women are acceptors to an extent beyond their share of the population. In the remaining four countries, the programmes have attracted a disproportionate share of women who have passed their most fertile years and among whom birth regulation will have a less marked impact on aggregate fertility. The value of these percentages as indicators of the extent to which programmes have succeeded in attracting younger women depends, of course, upon the quality of the underlying data.

It should be noted that the proportion of acceptors under 30 is a function of several main factors, among the more important of which is age at marriage. If many women marry late, they cannot enter the programme in large numbers before age 30. Another factor is the level of continuation. If a large proportion of acceptors below age 30 continue to be current users, new acceptors will tend to be older than 30, and the percentage of young acceptors will be low precisely because the programme is successful among younger women. On the other hand, women who have accepted in the past may often discontinue and, when re-entering the programme, be counted as "new" acceptors.

Additional evidence that, during 1970–1974, women who accepted service from a family planning programme tended to be young, i.e. under 30 years of age,

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[78] Dorothy Nortman, *Population and Family Planning Programs: A Factbook,* Reports on Population/Family Planning, No. 2, 7th ed. (New York, The Population Council, 1975).

[79] *Demographic Yearbook, 1973* (United Nations publication, Sales No. E/F.74.XIII.1), table 26.

[80] United States of America, Agency for International Development, *Family Planning Service Statistics: Annual Report 1974* (Washington, D.C., 1975), p. 13.

[81] Where continuation rates are high, the standard acceptance rates underestimate the annual accomplishments of the programme, unless the denominator is corrected for acceptors who are continuing users and are thus excluded from the eligible population. Where continuation rates are low, the returns of the programme are overestimated. The most common errors affecting data on acceptors are over-reporting and duplication, and these types of errors also contribute to the overestimation of the acceptance rates. Other indicators are available to assess the programme but all are affected by the dubious reliability of the data on acceptors.

rather than older, is provided in annex table 135. There are striking differences, among the countries shown, in the percentage of women acceptors or wives of acceptors who were under age 30 at the time of acceptance. On the whole, however, the data show the women to be young. If the age data are reasonably accurate, it would also appear that, in many of the countries, the proportions under 30 have been increasing in recent years. However, the figures are not entirely comparable, as some relate only to one or more methods (e.g., pill or IUD), while others relate to all methods, and it has been observed that the age of the women and the choice of method may be related.

Early studies of some of the older family planning programmes found that acceptors were largely older women who had more children than they desired and who wished to curtail reproduction. However, according to the data in annex table 135, the average woman is in or barely over the peak reproductive age, so that in many of the programmes, owing to the younger ages of the women, spacing may now be the principal reason for fertility regulation by programme acceptors. It may be noted that the median age of the acceptors does not appear to be related to the length of duration of the family planning programme, a relationship that might well be expected if the early acceptors desired to limit births and later acceptors wished primarily to space them. There is a need for more reliable information on acceptors by age and nuptiality patterns, inasmuch as a combination of early marriage and young age structure may account for some of the high proportions of young acceptors.

Interesting regional variations in reported age patterns of acceptance are evident in annex table 135. Accordingly, acceptance at older ages (i.e. less than 40 per cent under age 30), characterizes the response to the programmes of the Republic of Korea and India. In most of the Asian and African countries represented in the table, 40 to 60 per cent of acceptors are below 30 years of age. Of these countries, only Kenya, Hong Kong and Singapore have an early acceptance pattern. But among the Latin American countries for which statistics are at hand, acceptance at a relatively early age is most widespread, more than 60 per cent of all acceptors being under age 30.

Data on median age at acceptance provided in annex table 135, offer additional information on the regional variations in age patterns of acceptance of a method from a family planning programme. It is evident, insofar as these data may be taken as accurate, that women in Latin America have sought family planning services on the average at a much earlier age than women in other regions. In these countries, except for Mexico, the median age of acceptance of a method for the first time was below 27 years, while it was somewhat higher in Asian countries, the majority accepting between ages 27 and 30 years. For the few African countries having data, median age at acceptance of a method is the late twenties or early thirties. This pattern is compatible with the large family ideal in that region. Obviously, these data are insufficient for generalizations, first because of their questionable quality, and second because for Africa and Latin America, at least, the cases are too few to be representative of the regions. It is suggested that the young age of women at acceptance in the Latin American countries for which data are available may reflect relatively high motivation for the spacing of children soon after marriage. Given the rather large average family size in many of these countries, the young age pattern of acceptance has considerable potential for declining fertility.[82] The median age at acceptance in the Dominican Republic in 1973, for example, was 23.8 for the pill.

The age at which women tend to accept specific methods of fertility regulation has programmatic as well as demographic significance. With very few exceptions, programmes report that higher percentages of younger women take the pill, while more women 30 years of age and over seem to prefer the IUD, which is simpler to apply and usually requires motivation on one occasion only (see annex table 136). Younger women are evidently more concerned with spacing than with limitation of completed family size. Hence, only relatively small percentages of those under 30 years of age are among the group in which the woman or her husband has accepted sterilization.

Family size at acceptance

A basic factor motivating couples to regulate fertility is the number of living children (effective fertility), although in some cultures the number of living sons may be a more important indicator than the total number of living children. Thus, if effective fertility at the time of acceptance of, say, the IUD or sterilization is below the average family size for the country or smaller than what is considered to be the desired family size, this may be taken as evidence of a change in desired family size, possibly as a result of programme activities. It may also suggest a weighting of the desire for children against other aspirations.

At the time at which women in the countries shown in annex table 137 first accepted a method from a family planning programme, relatively large percentages of them had three or fewer children. In a few cases—Indonesia, Turkey and Sri Lanka, for example—there appears to have been a trend toward increasingly larger proportions of acceptors with small families. The figures in annex table 137 also show that some countries have apparently not experienced a trend, but the erratic behaviour of these data may be as much an indication of their quality as a sign of a change in the fertility category from which the majority of acceptors are drawn.

A finding of particular interest is that women who accept the pill are not only younger, as noted above, but have smaller families at the time of acceptance. Those who take the IUD, whose husbands are sterilized or who themselves may accept sterilization generally have

[82] In the Dominican Republic, for example, the effective fertility of women aged 45-49 years is 4.9. In El Salvador women aged 40-44 have on the average 4.8 living children.

larger numbers of living children (see annex table 138). It is of interest, too, particularly in the countries considered to have had a good measure of success with their family planning programme, that modal family size at acceptance ranged from no children to one child, as was the case, for example, in Singapore, where more than 90 per cent had three children or less (see annex tables 139 and 140).

In several of the Latin American countries for which data are available on total acceptors, among pill takers in Ecuador and the Dominican Republic, Peninsular Malaysia and Thailand, and in Mauritius, it is estimated that between 50 and 90 per cent of acceptors had three or fewer children at the time when they first accepted a method. In this group also the modal family size ranged from zero to one child. Significantly, however, none of the African countries, except Mauritius, is included among those in which more than 50 per cent of acceptors had three children or less at the time of acceptance (see annex table 139). On the contrary, the modal family size of acceptors in these countries was six children or more (see annex table 140).

It would have been illuminating indeed to have data for additional countries that would permit a more careful appraisal of average family size and modal family size of acceptors. It is important in interpreting these data to bear in mind that the programmes are of different durations; age at marriage in these countries varies; and age at marriage may not necessarily be synonymous with age at which the union was formed. Therefore, as noted earlier, the data are not comparable, with respect either to quality or to coverage. The variations in family size at acceptance do, however, raise a number of questions. For example, have the values changed with respect to large family norms in those countries of Africa south of the Sahara in which family planning programmes are in operation and where large numbers of acceptors are reported annually? This would seem not to be the case, since the acceptors are by and large older women who may have more children than they desire. At any rate, the modal family size of six or more children at the time of acceptance would suggest that the norms have not changed greatly, if at all.

Another factor of interest is that among the Latin American countries the median age at acceptance is lower on the whole than in other regions; and larger proportions of women have three or fewer children at acceptance. It is in the Latin American region, however, that the majority of programmes are operated for health reasons and not purportedly for the purpose of limiting or otherwise regulating fertility. Whether this influences the average age and average family size of acceptors is not known, and results of micro-level research on this topic would provide many family planning programme administrators with valuable ingredients for alternative programme strategies.

Among these countries, age of the woman and family size at acceptance appear to be highly correlated. This finding merely validates the data as being of reasonable quality, for such a relationship between age and family size would be expected in light of the close association of the two variables with mating and marriage duration. Where family planning is not widely practised, many women who seek service and information from a family planning programme no doubt considered themselves incapable of regulating fertility effectively without such assistance. This would suggest absence among a large proportion of acceptors of effective control prior to contact with the programme.

Literacy status and educational attainment

Annex table 141 gives the percentage distributions of family planning acceptors and women in the population by literacy status or educational attainment for four countries: Malaysia, Nepal, the Philippines and Turkey. For all countries except Malaysia, the percentage of illiterate women or women with no schooling was substantially lower among acceptors than within the total female population. In Nepal, for example, 98 per cent of all women 15 years and over were illiterate, but among female family planning acceptors in 1970–1971 the percentage was 72.9 for pill acceptors and 75.5 for those who chose the IUD. Among acceptors of all methods in the Philippines, only 1.5 per cent had no schooling, compared with 18 per cent for the female population aged 10 years and over. The data for Turkey show that among all women aged 15–49, 21.7 per cent had less than a primary school education, compared with only 12.8 per cent among IUD acceptors. The fact that illiterate women or women with no schooling tend to be underrepresented among acceptors of a family planning programme suggests that, *inter alia*, they may not receive sufficient information to be recruited into such programmes.

Regarding the relationship between literacy and education status and the acceptance of different methods, no clear pattern emerges from the data in annex table 141. Among the illiterate women and women with education below the primary level, the most accepted method is the IUD in Nepal and the Philippines and sterilization in Malaysia. Among women with high education levels, the most accepted method is the pill in Nepal, the IUD in Malaysia, and rhythm in the Philippines. A significantly larger number of highly educated men in Malaysia find the condom more acceptable than vasectomy. These differences may reflect the emphasis given to specific methods in individual programmes.

Place of residence

Data on the distribution of acceptors by place of residence, presented for the Republic of Korea, Peninsular Malaysia, the Philippines and Turkey in table 21, show that programme acceptance is higher in urban than in rural areas, the maximum being in the metropolitan areas. The degree of acceptance depends partly upon relative programme efforts in the rural and urban areas, such as the number and location of clinics and aftercare services. The Republic of Korea, for example, which has a strong programme operating in the rural areas, shows the smallest difference between urban and

rural areas in the "acceptance index" (defined in footnote *a* to table 21). In Pakistan, for which figures are not shown, IUD acceptance was in proportion to the respective urban and rural populations.

TABLE 21. ACCEPTANCE INDEX OF FAMILY PLANNING ACCEPTORS, BY PLACE OF RESIDENCE

Country	Year	Acceptance index		
		Metropolitan area	*Other urban areas*	*Rural areas*
Republic of Korea				
IUD	1966..		110	95
Peninsular Malaysia				
All methods	1967–1968..	200	120	78
Philippines				
All methods	1969–1970..	223	115	56
Turkey				
All methods	1967–1968..	275	189	42

Sources: United States of America, Bureau of the Census, International Statistical Program Center, Washington, D.C.; *Demographic Yearbook, 1970* (United Nations publication, Sales No. E/F.71.XIII.1); *Demographic Yearbook, 1971* (United Nations publication, Sales No. E/F.72.XIII.1); J. A. Ross and others, *Findings from Family Planning Research,* Reports on Population/Family Planning, No. 12 (New York, The Population Council, 1972).

[a] Computed by dividing the percentage of total acceptors in each of the three residence categories by the percentage of married women in those categories, and multiplying by 100.

Trends in acceptance

For the present assessment of levels and trends of fertility and human reproduction, it has been possible to assemble information on demographic aspects of family planning only for the years 1970–1974. In the appraisal of change over such a brief time span, many hazards are encountered, not the least important of which is the inability to gauge the change or lack of it in the light of earlier and usually highly relevant factors. Recently inaugurated programmes may recruit more acceptors annually than do programmes that have existed for a decade or more, first, because it has proved easier to gain as acceptors women who are already highly motivated to regulate fertility (leaving as a hard core those relatively unmotivated) and, secondly, because the pool of women not protected from the risk of pregnancy necessarily declines with any marked programme success unless, of course, new marriage cohorts are far greater in size than earlier cohorts. In addition, cultural conditions, programme performance, the quality of accounting and reporting numbers of acceptors and definitions of acceptors, even the number of "current users", as in the Republic of Korea, influence the rates of change.

Annex table 142 shows the exceedingly marked variation among countries in the annual increase or decrease in numbers of acceptors. The rates range from an annual average percentage growth in numbers of acceptors of + 55.0 for Indonesia, which has a relatively new and highly successful programme, to – 25.0 for Pakistan, where, owing to political and socio-economic upheaval, less resources have been available in recent years for family planning work. In general, explanations for the position of individual countries within this range are not readily forthcoming and, while the quality of the basic figures may be partially responsible, other factors are clearly exerting an influence, and research is needed to throw some light on the nature of these factors and how they operate.

As has already been mentioned, the age of women at acceptance appears to have been declining, and increasingly larger proportions of acceptors are under 30 years of age. Similarly, though the evidence is modest, acceptors have tended to an increasing extent to be of lower parity.

Measuring the demographic impact of programme acceptance

Although, as already mentioned, no attempt at programme evaluation will be made here, it may be useful to indicate the types of data and measures needed for such an undertaking.

The major sources for assessing the effect of family planning programmes are vital registration statistics and censuses, family planning service statistics, and field sample surveys. Subject to the availability and accuracy of data, the first two provide the annual numbers of births and population size needed to assess the trend in the birth rate as an indicator of programme impact, the third provides data on acceptors or users, and the last provides data for determining changes in the knowledge of, attitude towards, and prevalence of contraception.

Trends in the birth rates are one indicator of the impact of the programme. However, the total change in the level of the birth rate cannot be attributed solely to the programme, since several non-programme variables, such as age composition, age at marriage, incidence of induced abortions, and extra-programme contraceptive practice may also affect the birth rate. In the Republic of Korea in 1960–1968, for example, it was estimated that of the 30 per cent reduction in the level of the birth rate, one third could be attributed to programme impact, a little over one third to a rise in age at marriage, and the remainder to induced abortions.[83]

Family planning service statistics, along with demographic sources, can be converted to such programme indices as the proportion of persons or couples protected at any given point of time, couple-years of protection and births averted. The first measure, the proportion protected among a target group, is an indicator of programme coverage, and all three measures can help to account for reductions in the birth rate. The measure for couple-years of protection was developed to provide a common denominator of programme output.[84] This index uses data on cohorts of acceptors by various programme years and their continuation rates, and has also been used to estimate the number of births averted.

Different approaches have been adopted to estimate the numbers of births averted from the numbers of ac-

[83] H. Y. Lee and C. K. Kim, *The Family Planning Program—Korea: Retrospect and Prospects* (Seoul National University, n.d.).

[84] Samuel N. Wishik and Kwan-Hwa Chen, *Couple-Years of Protection: A Measure of Family Planning Program Output,* Manuals for Evaluation of Family Planning and Population Programs, No. 7 (New York, International Institute for the Study of Human Reproduction, 1973).

ceptors. For example, an acceptor of sterilization is considered to be protected for a larger average number of years than is an IUD acceptor, for which a period of two years is used. The demographic impact of each method of acceptance, including pills and conventional methods, has to be calculated on the assumption of age distributions, continuation rates, and the fertility levels of the acceptors.

Technological developments in methods of fertility regulation

During the quarter of a century from 1950 to 1975, modern methods of fertility regulation were gradually developed and included in government programmes of family planning. The former reliance on the traditional barrier types of contraception (e.g., condoms and spermicides) was replaced in the 1960s by increasing acceptance of the IUD and the pill, and family planning programmes have increasingly adopted the method-mix approach. The pill gained in popularity at the expense of the IUD, and became more commonly used by the 1970s.

A striking change in the last decade has been the increase in the number of voluntary surgical sterilizations among both males and females. A further change since 1950 has been the liberalization of abortion legislation in a number of countries. By the 1970s the proportion of the world's population living in countries with liberal abortion laws had risen to about 60 per cent, and 36 per cent of the population now lives in countries where abortion is available upon request (without specifying reasons), for at least some categories of women.[85]

Improvements in the technology of traditional methods have been minor in the period under review. Although the medical side-effects of these methods are non-existent or negligible, failure rates are higher than those of the newer methods. Limitations of modern contraceptive technology continue in terms of efficacy, safety and acceptability—factors which are crucial for prevalence and continuity of use. The technological development of methods of fertility regulation has thus constituted an important area of research during the past 15–20 years.

The purpose of such research is to develop highly effective methods that will eliminate or minimize side-effects and will lend themselves to widespread use. Two main approaches are followed: the improvement of existing methods and the development of new technology. Research on existing methods focuses on making them safer, more acceptable and suitable for use in different populations. With regard to the IUD, changes in its structure and the addition of chemical substances etc. have been designed to diminish expulsion, pain and bleeding. Alterations in the formulation of the hormonal contraceptives primarily consist in lowering steroid levels sufficiently to reduce harmful side-effects while maintaining efficacy. Current research has also been directed towards the simplification of methods of service delivery, for example by developing three-monthly or six-monthly injectables or a vaccine against pregnancy that could be provided at the service level for primary health care. Additional objectives of contraceptive research include the search for chemical methods of birth control for use by males and post-coital pills for women who have infrequent intercourse.

Developments in female surgical sterilization have been mainly in the use of endoscopic techniques (i.e. using the vaginal route). In research on abortion, emphasis has been placed on ascertaining the safety of different procedures in terms of their short-term and long-term mental and physical sequelae, and on developing simpler and safer methods. Methods have been developed for very early termination of pregnancy, and research continues on the use of prostaglandin methods. For both surgical sterilization and abortion, studies are designed to assess different approaches for performing the procedures in different field conditions, comparing in-patient and out-patient situations. The aim is to ensure that the procedures are carried out safely and in the least complicated setting possible, in order to meet the demands of coverage targets.

Needed data and research

Data of higher quality are needed on the numbers and characteristics of female acceptors and wives of male acceptors, defined as those taking a method from the programme for the first time. Duplication of acceptors should be avoided and more stringent measures should be taken to ensure complete reporting. Acceptors should be reported by all methods adopted, and not only by those on which statistics are more easily compiled, such as IUDs or sterilization. Detailed data on the characteristics of acceptors of each family planning method for complete calendar years are needed both in order to understand acceptance patterns and to study trends in patterns. These characteristics include age at acceptance, age at marriage, duration of marriage, number of living children by sex, and rural-urban residence. Where pertinent and possible, age at entry into sexual unions should be recorded as a substitute for age at marriage. Information on the education of woman and spouse or partner, ethnic identity where applicable, and religion and economic status, is highly valuable for analytical purposes, but tends to overburden family planning record-keeping systems. Such data should be obtained on a sample basis.

One area in which research is needed is the definition of the concept of "eligible population" in order to provide a satisfactory denominator for calculating rates of acceptance. Studies of how the eligible population is affected by users who have previously accepted a method from the programme would be especially important in this connexion. The study of the effects of previous acceptance patterns upon later patterns is also important for the study of trends. Finally, it should be emphasized that the relationships between such variables as accept-

[85] Christopher Tietze and Marjorie Cooper Murstein, *Induced Abortion: 1975 Factbook*, Reports on Population/Family Planning, No. 14 (2) (New York, The Population Council, 1975).

ance and patterns and norms of family size, ethnicity in certain cases, breast-feeding, the patterns of entrance into conjugal or sexual union and other relevant cultural phenomena related to acceptance represent a particular gap in our knowledge of conditions and factors relative to acceptance, and that appropriate studies should be included in programmes of research in this field.

F. A MULTIPLE REGRESSION ANALYSIS OF FACTORS RELATED TO FERTILITY

In connexion with the monitoring of population trends, an exploratory study was initiated to identify, among some selected economic, social, demographic, and family planning programme indicators, a few key elements which might be considered significant, in statistical terms, in their effects on recent fertility levels and changes, if any, in the less developed countries.

The economic, social, and demographic variables were as follows: the proportion of married women, including the consensually married, of reproductive age (15–44 years) in the population; the infant mortality rate; the proportion of population living in cities of 100,000 or more inhabitants; the proportion of females among salaried employees and wage earners; the number of radio receivers per person; the proportion of literate persons among adult females; the proportion of physicians in the population; and the gross domestic product per economically active person. Family planning programme variables included the budget *per capita* allocated for family planning, and the respective proportions of first-time acceptors and current users of family planning among married women of reproductive age. The fertility indicators were the gross reproduction rates in 1970 and 1975 and the proportional decline during the period. Except for the last two items, the variables related to 1970 or thereabouts.

The 25 countries included in the study were those with national family planning programmes for which data and estimates of reasonable accuracy were available. Together, these countries had 1,254 million persons in 1975, comprising 31.6 per cent of total world population and 44.2 per cent of the population in the developing countries.

The first step in the analysis was to compute the simple linear correlation between the variables taken two by two. This procedure established some linear relationships, such as between the proportion of literate persons among adult females and the proportional decline in fertility, but it did not indicate the joint or residual effects on the fertility level and change.

The next step in the analysis was to calculate the multiple regressions of the 11 independent (but obviously interdependent) variables separately on the three dependent variables, i.e. the fertility levels in 1970 and 1975, and the proportional decline in fertility. The three multiple regressions were all statistically significant at either the 5 per cent or 1 per cent probability level.

A subsequent test was undertaken to determine the additional contribution of each of the independent variables when the other 10 had already been included in the multiple regression. The results were not statistically significant, meaning that when any 10 variables had been included in a multiple regression, the eleventh variable did not make an additional significant contribution to the regression.

A further analysis was adopted using the hierarchical regression method, where the variables were added in a multiple regression equation in an order predetermined by the implicitly conceptualized approach. That is, instead of determining the marginal contribution of each variable by assuming that it was added last, the hierarchical method required the specification of the order of inclusion. Two orders were adopted for the hierarchical decomposition method. The first started with the indicators of social and economic development, the family planning programme variables being added last; the second started with the latter variables, with the economic and social variables being placed at the end.

The results are shown in tables 22 and 23, along with the probability levels. For the proportional decline in fertility, for example, the sum of squares attributable to the gross domestic product per labour force includes not only that portion due to the direct influence of the gross domestic product on fertility decline but also the portion acting through the other variables; the portion of the sum of squares attributable to infant mortality reflects the direct influence of infant mortality plus its indirect influence through the succeeding variables but excluding the gross domestic product per labour force that precedes it; the portion of the sum of squares attributable to the proportion of urban population reflects the direct influence of that segment of the population plus its indirect influence through the succeeding variables, but excluding the gross domestic product per labour force and infant mortality rate. And similarly for the family planning programme variables, which come first in the hierarchical order in table 23.

For the proportional fertility declines it can be seen from table 22 that the three variables—gross domestic product per labour force, infant mortality rate, and proportion of urban population—were significant at the 5 or 0.5 per cent probability level. On the other hand, it appears from table 23 that the three programmatic variables—*per capita* budget for family planning, and family planning acceptor and user rates were significant at least at the 1 per cent probability level; the other variables do not make any significant residual contribution, except for the infant mortality rate.

There is no paradox involved here. The analysis merely states that the three variables which are key indicators of the development process—gross domestic product per labour force, infant mortality rate, and proportion of urban population—give as good a fit to the data on fertility decline as do the three programmatic variables when the fourth variable of infant mortality rate is added to them. The same independent variables are similarly related to the fertility levels in 1970 and 1975.

TABLE 22. TEST OF INCREMENTAL PROPORTION OF VARIABILITY OF THE DEPENDENT VARIABLES ATTRIBUTABLE TO MULTIPLE REGRESSION ACCORDING TO A SPECIFIED HIERARCHICAL ORDER, BEGINNING WITH INDICATORS OF SOCIAL AND ECONOMIC DEVELOPMENT

	Dependent variable		
Independent variables in hierarchical order	*Gross reproduction rate 1970*	*Gross reproduction rate 1975*	*Proportional decline*
Gross domestic product per labour force	[a]	[a]	[a]
Infant mortality rate	[a]	[a]	[a]
Proportion of urban population	[b]	[b]	[b]
Proportion of female salaried employees	—	—	—
Proportion of literate females	—	—	—
Proportion of physicians	—	—	—
Radio receivers per person	—	—	—
Proportion of married women	—	—	—
Per capita budget for family planning	—	—	—
Family planning acceptor rate	—	—	—
Family planning user rate	—	—	—

[a] Significant at the 0.5 per cent probability level.
[b] Significant at the 5 per cent probability level. Remainder not significant at the 5 per cent probability level.

TABLE 23. TEST OF INCREMENTAL PROPORTION OF VARIABILITY OF THE DEPENDENT VARIABLES ATTRIBUTABLE TO MULTIPLE REGRESSION ACCORDING TO A SPECIFIED HIERARCHICAL ORDER, BEGINNING WITH FAMILY PLANNING PROGRAMME VARIABLES

	Dependent variable		
Independent variables in hierarchical order	*Gross reproduction rate 1970*	*Gross reproduction rate 1975*	*Proportional decline*
Per capita budget for family planning	—	—	[a]
Family planning acceptor rate	[b]	[b]	[b]
Family planning user rate	[c]	[a]	[b]
Proportion of physicians	—	—	—
Radio receivers per person	—	—	—
Proportion of married women	—	—	—
Infant mortality rate	—	—	[c]
Gross domestic product per labour force	—	—	—
Proportion of female salaried employees	—	—	—
Proportion of literate females	—	—	—
Proportion of urban population	—	—	—

[a] Significant at the 1 per cent probability level.
[b] Significant at the 0.5 per cent probability level.
[c] Significant at the 5 per cent probability level. Remainder not significant at the 5 per cent probability level.

Chapter IV

INTERNATIONAL MIGRATION*

Since 1950 important changes have occurred in the character of the main currents of international migration. The resettlement of refugees from the Second World War and others uprooted as a result of political changes occurring in the early post-war period carried over into the 1950s. There was also a continuation of the traditional migration from Europe, which had resumed following the war, to such overseas destinations as North and South America and Oceania, on the part of individuals seeking economic betterment. With the economic recovery of Western Europe and the rapid growth of the economies of countries in that region in the 1960s, several new migratory streams made their appearance, while some traditional currents abated. Formerly the main migratory streams were from Europe to the New World, but the direction has shifted, and the main currents are now toward the industrialized countries from the less developed countries. These recent trends are largely a product of differential economic and demographic conditions between the more developed and less developed nations.

Statistics of international migration are of far less satisfactory quality than those relating to the other two components of population growth, fertility and mortality. The present review is based on data from a variety of sources. These include, *inter alia,* statistics of immigrants and emigrants collected at border control points, data from population registers or registers of aliens, and census data pertaining to the foreign-born population or that of foreign citizenship. For countries in the more developed regions it has been possible to calculate indirect measures of net migration from population census counts and the balance of registered births and deaths in the interval between censuses. The available data on migration are often not comparable from country to country and can at best provide only the approximate magnitude of the principal migrations in the contemporary world. Statistics for countries in the developing regions are much less satisfactory than those for the more developed regions, so that information on the new migration from the developing countries is usually available only from the statistics of the latter.

Although concepts and definitions of migration vary, the concern of this review is with long-term migration, defined for international purposes as that lasting for more than one year. No effort is made to examine seasonal or other short-term movements, though for some countries the only statistical series available include short-term, as well as long-term migrants.

The shortcomings of the available statistics must be borne in mind in the following summary of some of the main findings of the present review. It is estimated that in mid 1974 there were about 9.5 million immigrants from the world's less developed regions—Africa, Asia (excluding Japan) and Latin America—living in the industrialized countries of Northern and Western Europe, Northern America and Oceania.[1] In 1960 there were only about 3.2 million, attesting to the rapid acceleration of this type of migration in recent years.

Somewhat more than half (about 5.3 million) of the migrants from less developed countries to industrialized countries reside in the New World countries of Northern America and Oceania. While the immigrant populations of these countries are still predominantly European, reflecting the character of past migrations, among recent immigrants the proportions from the developing countries have been rising. This trend has been more evident in Canada and the United States of America than in Australia and New Zealand. In the United States, which has continued to admit more immigrants than any other country in the world (in absolute numbers), most migrants now come from Latin America and Asia, rather than from Europe. In 1970–1974, 70 per cent of the immigrants to the United States came from the less developed regions and in Canada the figure was nearly 40 per cent. This change in migration patterns has been facilitated by a weakening of racial barriers, and an emphasis on needed skills rather than on national origins.

Within Europe, a large volume of short-distance, and to some extent, temporary migration has developed, in which countries of Southern Europe have been exporting their surplus labour to the more industrialized Western and Northern European countries, where labour shortages have been the rule. An estimated 5.5 million immigrants from Southern Europe were living in Northern and Western Europe in 1974, among them 3.1 million workers. The attraction of employment opportunities in the latter two regions of Europe also drew

* Prepared by the Population Division of the United Nations Secretariat, with contributions from the International Labour Office.

[1] Countries included are Australia, Austria, Belgium, Canada, France, the Federal Republic of Germany, Luxembourg, the Netherlands, New Zealand, Sweden, Switzerland, the United Kingdom and the United States of America. The estimate cited includes Puerto Rican migrants to the United States and Surinamese migrants to the Netherlands, although they are citizens of the respective countries of immigration. It also includes migrants from countries of Temperate South America, which in other chapters is considered to belong to the more developed regions.

migrants from beyond the confines of the continent; the numbers from the less developed regions were estimated to have reached 4.2 million by 1974. These migrants came mainly from nearby Turkey and Northern Africa, though more than 1 million living in the United Kingdom originated in the New Commonwealth countries. The migration into Northern and Western Europe from Southern Europe and other continents is mostly of recent occurrence; estimates for 1960 show that there were then only about 2 million immigrants from Southern Europe and one million from the developing regions, almost all of them in France and the United Kingdom. By 1974 migrant workers made up about one quarter of the labour force in Luxembourg and Switzerland, 9 per cent in France and the Federal Republic of Germany and 5 to 7 per cent in Austria, Belgium, the Netherlands and Sweden.

As a result of a diminished outflow of migrants overseas and the attraction of large numbers of migrants from less developed countries, Europe relinquished its traditional role as a significant net exporter of population after 1960. Whereas net emigration from Europe had amounted to about 3 million in the decade of the 1950s, the outward balance was virtually eliminated in the 1960s and by the early 1970s the statistical evidence suggests that the migration balance had become positive. During the 1960s the balance was affected by the repatriation of around 1 million Europeans, when former colonies in Africa and Asia gained their independence.[2]

A reversal in the opposite direction took place in Latin America, traditionally a region of net immigration, most of it from Southern Europe. During the 1950s immigration from Southern Europe totalled about 1.5 million, of whom about 1 million remained. In the 1960s the outward flow from Europe was curtailed to about 400,000, and a strong return movement may have caused the balance to shift in Europe's favour. At the same time, there was out-migration from the former British West Indies to the United Kingdom and a rapidly rising outflow from the whole Latin American region to Northern America. Canada and the United States, which together received about 600,000 migrants from Latin America during the 1950s, took in more than 2 million from that region during the period between 1960 and 1974. Although some of these migrants returned, it is clear that by the 1960s Latin America had become a region of substantial net emigration.

In Africa, only the region of Northern Africa has sent substantial numbers of migrants abroad, most of them going to the industrialized countries of Western Europe. In 1974 there were estimated to be about 1.4 million immigrants from Algeria, Morocco and Tunisia in Western Europe, compared with less than 400,000 in 1960. Of much greater significance for the African continent as a whole are the intraregional migration patterns, which had their origins in the colonial period. Although these movements are difficult to measure owing to a lack of relevant statistics, it is known that their volume has been somewhat reduced as newly independent States have sought to impose controls designed to preserve limited employment opportunities for their own nationals. Nevertheless, a high intensity of migration in parts of Southern and Eastern Africa is indicated by recent census data, which suggest that in such countries as Botswana, Lesotho, Malawi and Swaziland, roughly between one fifth and two fifths of adult males were working abroad. Most of the absentees were migrant workers in neighbouring countries, particularly South Africa. In Western Africa, emigration on a similar scale occurs in Togo and Upper Volta, the main poles of attraction being Ghana and the Ivory Coast.

The scale of recent intercontinental emigration from Asia can be judged from the estimated 3.7 million immigrants from Asia (excluding Japan) who were living in more developed countries in 1974, compared with less than 1 million in 1960. Around 2 million of the Asian immigrants were in Europe, and the remainder in Northern America and Oceania. Despite its substantial rise in volume, emigration abroad has reached a significant level in relation to population size only in a few countries, such as Turkey and the small population of Cyprus. While refugee movements on a large scale have occurred in parts of East and South Asia, there has been little economically oriented intra-regional migration during the period under review, except in Western South Asia. There the newly prosperous oil-producing countries have been attracting migrant labour. Statistical data on these movements are poor. Rough estimates for Saudi Arabia and census data for Bahrain and Kuwait suggest that around 1970 one third or more of the labour force in these countries was composed of foreign nationals.

Recent developments stemming from the world energy crisis have slowed or reversed the migration streams in Europe, which came into being in the 1960s. Several countries of Western Europe, among them Belgium, France, the Federal Republic of Germany, the Netherlands and Switzerland, imposed stricter controls on immigration in 1973 and 1974. The effects of these controls were already beginning to be reflected in the statistics of immigrants and emigrants for the most recent years of the period under review. In 1974 the number of emigrants from the Federal Republic of Germany exceeded the number of immigrants for the first time since the recession year of 1967, and in France and Switzerland the numbers of new immigrants were sharply reduced in 1974 compared with the preceding year. Some leading countries of emigration in Southern Europe experienced a reversal of normal migration trends; in Italy the migration balance had already become positive by 1973 and in Greece the number of return migrants equalled the new emigrants in 1974. Because of the curbs being introduced on immigrant workers, a high proportion of new immigrants arriving in Western European countries in 1974 were dependants of workers previously admitted.

The probable trend of international migration in the future is difficult to predict. If efforts are successful to promote a new international economic order and thus

[2] This migration, which was of a political nature, is excluded from the estimates of the numbers of migrants from developing to developed regions, mentioned above.

to narrow the development gap, inducements to migrate from the developing to the industrialized countries may diminish. However, even under the most favourable progress foreseeable, large economic disparities are likely to remain for the rest of the present century.

Given the low levels of fertility now prevailing in many of the industrialized countries of Europe, labour shortages are likely to be felt in the 1980s and beyond, thus creating a sustained demand for migrant workers. The situation may, of course, be different if economic growth has to be curtailed because of world energy shortages. The members of the Organization of Petroleum Exporting Countries (OPEC) appear to be emerging as an attractive region for migrants, although, as a capital-intensive industry, oil has a limited potential for migrant labour absorption. In the southern part of Africa, economic realities would seem to call for continued immigration from the less developed to the more developed countries of the region, but political realities may restrict these movements.

The estimated 9.5 million migrants from developing regions who were in industrialized countries in 1974 constituted less than 0.5 per cent of the populations of the sending countries. Even if the demand for migrants should intensify in the future instead of abating, it is certain that, owing to the vast size of the populations of the developing countries, and the magnitude of the annual increments to their numbers, migration can offer little help in alleviating their demographic problems.

A. More developed regions

Northern America and Oceania

Immigration from other regions

Between 1950 and 1974 net immigration totalled about 8.3 million in the United States of America, 2.2 million in Canada, 1.9 million in Australia and 200,000 in New Zealand. These countries have long been the principal receiving areas for European emigrants. Recently they have also been attracting growing numbers of migrants from the less developed regions.

Net immigration during 1970–1974 is estimated to have averaged 350,000 persons annually in the United States of America, 100,000 in Canada, 60,000 in Australia and just over 15,000 in New Zealand. Thus, recent levels appear to approximate average intakes during the 1950–1974 period as a whole for the United States and Canada, though they are currently considerably lower in Australia, and higher in New Zealand, than the average levels for the period under review. In relation to their population size, Canada, Australia and New Zealand all have rather similar migration rates of between 4.4 and 5.6 per 1,000 population annually, which are well above the United States rate of 1.7 per 1,000. The net migration estimates given in annex table 143 for three periods, 1950–1960, 1960–1970 and 1970–1974, have been derived by subtracting natural increase from total population change between the specified dates.

In the United States of America, the net immigration rate was much the same at the end of the period under review as it had been at the beginning. In contrast, net immigration rates in Canada and Australia were considerably lower in the early 1970s than they had been, on average, in the 1950s.

The relative importance of past immigration in the four countries is also seen in the percentages of foreign-born persons in their populations. Data from censuses taken around 1970 show that in Australia one in every five persons was foreign-born; in Canada and New Zealand, the ratio was about one in seven, and in the United States one in 20 (see annex table 145).

The gross intake of immigrants by the four countries combined during 1950–1974 amounted to more than 16 million. The volume of immigration has generally risen during the period under review. However, in the two countries that collect statistics of emigration—Australia and New Zealand—the numbers of emigrants have risen even more, so that there has been a rise in the ratio of emigrants to immigrants (see annex table 144).[3] Explanations that have been advanced for the rising ratios of emigrants to immigrants in Australia[4] probably apply more generally to the other countries of overseas settlement as well. They include the fact that in the early 1950s refugees and displaced persons from the Second World War, who did not have the option of returning home, formed an important segment of total immigration. Cheaper air fares and prosperous conditions in Europe in the late 1960s and early 1970s undoubtedly facilitated return movements.

Each of the major immigration countries of Northern America and Oceania has given considerable attention to immigration policy. During the 1950s Australia sought to increase its population by 1 per cent annually through immigration—a target that was nearly achieved. This level of immigration came under criticism as being too high, and a variable target has since been adopted.[5] In New Zealand the Government's target was a net intake of 15,000 immigrants annually[6] or about 0.5 per cent of the total population. Actual immigration rose well above this level in 1972–1974. Some economic difficulties were felt to be associated with the high level of immigration, and stricter controls were in-

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[3] The figures of net immigration derived as the excess of immigrants over emigrants, given in annex table 144, are not identical with the net immigration estimates in annex table 143. Aside from differences in the time-reference period, the figures in table 143 have been obtained by a different method and are believed to represent a better estimate of net migration as a component of population change.

[4] Charles A. Price, *Australian Immigration; a Review of the Demographic Effects of Post-War Immigration on the Australian Population* (Canberra, Australian Government Publishing Service, 1973).

[5] *Ibid.*, pp. 4–5.

[6] C. J. O'Neill, "Migration policy and population growth in New Zealand", *International Migration*, vol. XIII, No. 4 (Geneva, 1975), p. 185.

troduced in 1974,[7] and further strengthened by the new Government, which took office in late 1975.[8]

As a result of deteriorating economic conditions, Canada in 1974 imposed more stringent controls on the admission of immigrants, and in 1975 issued a "Green Paper", which provided a factual background for the consideration of new legislation on immigration.[9] A new immigration law was enacted in the United States of America in 1976. While maintaining the same overall immigration ceilings, the new law seeks to eliminate certain inequities regarding the admission of immigrants from the eastern and western hemispheres.[10]

The Governments of each of the four countries took measures during the post-war period which removed or modified immigration restrictions based on national origin. Partly as a result of these policy changes, the European component of total immigration in all these countries has been undergoing a steady and steep decline. In Canada and the United States of America even the absolute numbers of European immigrants, particularly those from the more prosperous countries of Western and Northern Europe, have fallen. Meanwhile, there has been a strongly rising trend in the number of immigrants from the developing regions (see annex tables 146 and 147).

In the 25-year period under review the United States of America has admitted for permanent residence more than 2.5 million immigrants from Latin America[11] and more than 1 million from Asia (see annex table 146). The elimination in 1965 of legislative provisions that had discriminated against Asians led to a sharp increase in immigration from that continent. Whereas Asians had constituted only 3 per cent of all immigrants to the United States of America in 1950–1954, their proportion rose to 29 per cent in 1970–1974. By the late 1960s Latin America had surpassed Europe as the region supplying the largest numbers of immigrants to the United States, but the proportion from Latin America stopped rising, and in fact declined slightly in the 1970s. In addition to the legal immigration described in this report, illegal immigration to the United States has reached substantial proportions in recent years. According to estimates of the United States Immigration and Naturalization Service, there are currently between 6 and 8 million illegal immigrants in the country.

In Canada immigration regulations that virtually eliminated all preference of race and national origin, and emphasized education, training and skills as selection criteria, went into effect in 1962. Before this, very few immigrants had come from the developing regions. In fact, the 1961 census count showed only about 67,000 persons born in Asia and 12,000 born in the former British West Indies. This situation changed rapidly, and in the 10-year period from 1965 to 1974 about 250,000 immigrants were received from Asia and about 170,000 from Latin America, most of them from the former British West Indies.

Modifications were gradually introduced in Australia's immigration regulations, which made it easier for non-Europeans to settle permanently. It was not until the 1970s, however, under a Labour Government, that all discrimination in terms of race, colour or creed was abolished in immigration policy.[12] These policy changes led to an increase in the numbers arriving from the developing regions. Altogether, more than 100,000 immigrants intending permanent settlement came from Asian countries in the nine-year period from 1965 to 1973.[13]

The impact of new legislation stressing skills is seen in the sharp rise in the proportion of professional, technical and kindred workers among immigrants to Australia, Canada and the United States of America who declared an occupation, as shown in table 24.

TABLE 24. PERCENTAGE OF PROFESSIONAL, TECHNICAL AND KINDRED WORKERS AMONG IMMIGRANTS DECLARING AN OCCUPATION

	1960–1964	*1970–1974*
Australia[a]	8.8[b]	15.7[b]
Canada	19.4	23.7
United States of America	19.0[b]	28.4[b]

Source: National statistical publications.

[a] Data are for permanent settlers only.

[b] For years running from July to June.

Among recent immigrants from Asia to the United States of America, roughly three out of five of those with occupations were professional or technical workers, while among those from Latin America the ratio was only one in 10. Thus, a large element of the immigration from Asia is clearly part of the "brain drain" phenomenon. This is less the case with the immigration from Latin America, although the proportion of professional or technical workers has been fairly high among economically active immigrants from particular countries, especially in South America. For example, one fifth or more of those born in Argentina, Brazil, Chile, Guyana, Peru and Venezuela belonged to the professional category.

Between the early 1960s and 1972, over 170,000 scientists, engineers, physicians and teachers migrated from

[7] New Zealand, *Review of Immigration Policy: Policy Announcements, 2 October 1973 to 7 May 1974, Presented to the House of Representatives by Leave* (Wellington, Government Printer, 1974), pp. 14–15.

[8] *Manchester Guardian Weekly*, 21 December 1975, p. 8.

[9] Anthony H. Richmond, "Canadian immigration: recent developments and future prospects", *International Migration*, vol. XIII, No. 4 (Geneva, 1975), pp. 174–175.

[10] *The New York Times*, 24 October 1976.

[11] Puerto Ricans, who, as United States citizens, can enter the mainland freely, are not included in the figures given in table 146. Net immigration from Puerto Rico was estimated at about 455,000 in the 1950s and 180,000 in the 1960s. In 1970–1974 the balance had become negative, and amounted to 60,000.

[12] The Parliament of the Commonwealth of Australia, *Population and Australia, a Demographic Analysis and Projection, First Report of the National Population Inquiry*, 1975 Parliamentary Paper No. 7, vol. II (Canberra, 1975), p. 731; Charles Price, "Beyond white Australia; the Whitlam Government's immigration record", *The Round Table*, No. 260, (London, October 1975), p. 372.

[13] The higher figures shown in annex table 146 result from the inclusion of students and other persons intending to remain for one year or more, though not permanently.

developing countries to the United States of America, Canada, and the United Kingdom (see annex table 148). If immigration to the industrialized countries of continental Western Europe and Australia is added, the total number of such migrants is probably over 250,000.

About 75,000 of these highly skilled professionals went to the United States of America, a relatively large proportion of them in the early 1970s. Indian scientists and engineers (13,000) and scientists, engineers and physicians from the Philippines (11,000) together accounted for one third of the intake. About half of the 38,000 qualified immigrants to Canada came from Asia (especially from India and the Philippines), and a large portion of the 60,000 going to the United Kingdom came from India and Pakistan. Immigrants from developing countries provided between 25 and 50 per cent of the annual increase in physicians and surgeons in the United States, 15–25 per cent of the annual increase in engineers and about 10 per cent of the annual increase in scientists.

Migration within Northern America

In the 1970s a reversal occurred in the long-term migration trend between Canada and the United States of America. Whereas the number of immigrants admitted to the United States from Canada has generally exceeded by a considerable margin the numbers migrating from the United States to Canada, by 1971 the pattern had changed and the balance was in Canada's favour for the first time since the 1930s.[14] During 1970–1974 there were about 123,000 immigrants to Canada from the United States, compared with 95,000 immigrants to the United States from Canada. More than 40 per cent of the latter were persons who had previously immigrated to Canada from other countries. Only 54,000 Canadian-born persons immigrated to the United States during this period, while nearly twice as many (105,000) American-born immigrated to Canada. Return migration can be estimated only on the basis of census data since neither country keeps statistics of emigration. Based on data from censuses taken around 1960 and 1970 in the two countries, return migration during the 1960s appears to have been substantial on both sides, but particularly so in the case of Canadian-born immigrants in the United States.

Migration within Oceania

There has been a growing two-way movement of population between Australia and New Zealand, though over the long-term Australia has exerted a greater attraction for New Zealanders than has New Zealand for Australians. According to the 1971 censuses taken in the two countries, there were 80,000 New Zealand-born persons in Australia, while only 44,000 Australian-born persons were enumerated in New Zealand. The numbers of permanent and long-term migrants between the two countries show a marked upward trend since 1950. In the early 1950s only a few thousand persons migrated annually in each direction but by 1973 Australia and New Zealand each received approximately 20,000 permanent and long-term immigrants from the other country. Annual movements appear to be sensitive to relative economic conditions in the two countries. For example, there was a substantial surplus of migrants in Australia's favour during 1967–1969, but signs of a reversal appeared in 1972–1973, a period of prosperity in New Zealand, bringing the migratory exchange to a near balance.

Migration from the less developed islands of Oceania to Australia and New Zealand has been growing. At the 1971 censuses, Australia and New Zealand had, respectively, 17,000 and 31,000 residents who were born in other parts of Oceania, and several thousands have been added in recent years. The most important of these migrations in relation to the population size of the sending and receiving countries is that to New Zealand from the Cook Islands and Niue. In 1967–1972 there was a net immigration to New Zealand of over 4,000 from these islands, whose inhabitants hold New Zealand citizenship. Considering that their population amounts to only about 26,000, it is evident that the rate of emigration to New Zealand is very high. Regulations designed to reduce emigration from the islands were announced by the Government of New Zealand early in 1976.[15]

Other migration

Exchanges of migrants between the countries of Northern America, on the one hand, and Oceania, on the other, have resulted in only small net balances. There was an upsurge in the number of long-term immigrants from the United States of America to Australia during the late 1960s and early 1970s, but this movement included a large proportion of professionally qualified personnel, few of whom were likely to settle permanently.

Europe

In contrast to the high negative migration balances that Europe had sustained in earlier periods, during the quarter of a century just ended net emigration for the region as a whole is estimated to have amounted to only about 2.2 million. All of the loss was concentrated in the 1950s, when normal movements from Europe to overseas destinations had resumed following the dislocations of wartime and the immediate post-war period. As shown in annex table 143, the estimated net migration balance for Europe in 1950–1960 was -3.0 million.

During the 1960s, immigrants from developing regions, together with more than 1 million repatriates from former colonial Territories and other returning migrants, were sufficiently numerous to offset the number of Europeans who migrated overseas. As a result, the

[14] L. W. St. John-Jones, "The exchange of population between the United States of America and Canada in the 1960s", *International Migration*, vol. XI, No. 1/2 (Geneva, 1973), p. 35.

[15] *New Zealand Evening Post*, 12 February 1976.

balance of migration during this period was probably of negligible magnitude. The increasing inflow from Turkey and North Africa and a high return rate among European emigrants appears to have led to a net immigration for the continent in the period from mid 1970 to mid 1974, before immigration was slowed by the effects of the world energy crisis.[16]

While international migration within Europe is not new, it has assumed a larger volume and taken on different patterns since the Second World War and particularly since the beginning of the 1960s. Whereas in the interwar period movements were mainly in a westward direction, since the 1960s they have become mainly northward from Southern European countries, where the labour force was often in excess of the absorptive capacity of the economy, to the centres of industrial expansion in Western and Northern Europe.[17] In annex table 143, Western Europe is seen to have had a net immigration of 3.7 million in 1950–1960, 4.9 million in 1960–1970 and 2.2 million in 1970–1974. During the same periods, Southern Europe experienced net migration losses of 3.5, 3.7 and 1.1 millions, respectively. Eastern and Northern Europe had net emigration, which was substantial only for Eastern Europe in the 1950s.

Western Europe

Since 1960 all of the major countries of Western Europe have had a positive migration balance (see annex table 143). The Federal Republic of Germany and France had by far the largest net intake of migrants in absolute numbers, 6.0 and 3.8 million, respectively, between 1950 and 1974. In relation to population size, however, immigration was of greater importance in Switzerland until after 1970, and in Luxembourg since 1960. The very high net immigration rate for Luxembourg in 1970–1974, averaging 11.5 per 1,000 population annually, is particularly striking.

Not all of the migration to Western Europe was economically motivated. The Federal Republic of Germany began to attract foreign workers in large numbers only towards the end of the 1950s, when full employment was achieved. The large net immigration of 2.5 million during 1950–1960 came mainly from the German Democratic Republic. This migration, which was to a large extent political in character, was virtually halted in 1961. France's high immigration rate in the 1960s was also partly due to political transfers. Nearly 1 million of the 2.2 million net migration into France during 1960–1970 was accounted for by the return of French nationals from former overseas territories, mainly from Algeria.

The effect of the world-wide economic recession is seen in the annual statistics of immigration and emigration presented in annex table 144.[18] In France, the Federal Republic of Germany and Switzerland, the number of new immigrants in 1974 dropped by roughly one third from the preceding year. Statistics of emigration, which are available for the Federal Republic of Germany, though not for France and Switzerland, show a rising trend since 1968, and in 1974 for the first time since 1967 (another recession year), emigrants were more numerous than immigrants.

Foreign workers began to be drawn to the Federal Republic of Germany in significant numbers in 1957 and their numbers grew rapidly. At the June 1961 census about 690,000 foreign nationals were enumerated, and by the time the next census was taken in May 1970 the number had grown to 2.6 million. At first the migrants came mostly from Southern Europe, Italy being the leading sending country, but by 1970–1974 Turks accounted for 39 per cent of net immigration.

Responding to fear of economic recession stemming from the oil crisis, the Government of the Federal Republic of Germany passed a resolution in November 1973 which prohibited further recruitment of workers abroad. Some occupations, where labour supply still fell short of demand, were excluded from this restriction, but its impact is seen in the fact that only 40 per cent of foreign immigrants in 1974 were workers, the remainder being family members joining workers who had arrived earlier. In contrast, 74 per cent of immigrants arriving in 1970 were workers.

While Governments of several European countries, among them the Federal Republic of Germany, have looked upon migrants as guest workers who would help to ease temporary labour shortages but later return home, French policy has viewed immigrants more as permanent settlers who would help to compensate for the low rate of natural increase and for losses incurred in the war. The numbers of immigrant workers and their dependants have shown a strongly rising trend in the period under review—from only about 120,000 in 1950–1954 to almost 1 million in 1970–1974 (see annex table 144). It is remarkable that the repatriation of nearly 1 million French nationals from North Africa in the early 1960s did not lead to a restriction of foreign immigration, but rather stimulated it, by creating a demand for unskilled labour to meet housing needs.[19] Italian migrants were first to come, followed by Spanish, North African and Portuguese, among others. By 1974 Algerian and Portuguese were the largest immigrant groups, each numbering around 0.8 million.

[16] Estimates for 1970–1974 are less reliable than those for the decennial periods 1950–1960 and 1960–1970, since they depend in part on the accuracy of total population estimates for 1974, a year for which no censuses are available for European countries. From past observation it is known that intercensal population estimates often show an upward bias owing to the failure to take full account of the numbers of emigrants.

[17] *Economic Survey of Europe in 1974*, part II, *Post-War Demographic Trends in Europe and the Outlook until the Year 2000* (United Nations publication, Sales No. 75.II.E.16), chap. VI.

[18] These statistics, collected at points of entry and departure, or from various registers, may exaggerate the net positive balance of migration for some countries, often because they understate the numbers of emigrants. Despite their shortcomings for determining net migration, these data are useful for indicating short-term trends, and for providing information on the characteristics of migrants, including their origins and intended destinations.

[19] Georges Photios Tapinos, *L'immigration étrangère en France 1946–1973*, Institut national d'études démographiques, Cahier no. 71 (Paris, Presses Universitaires de France, 1975).

Following demonstrations in France against the Algerian community, the Government of Algeria in September 1973 suspended all migration to France.[20] Reflecting this development, the net balance of Algerian migration to France fell from 41,000 in 1973 to under 6,000 the following year, nearly all of the latter consisting of family members joining earlier immigrants. In July 1974 the French Government suspended foreign immigration with certain exceptions, thus bringing about the sharp reduction in the number of immigrants already noted above. Slightly less than half of the foreign immigrants admitted in 1974 were workers, as compared with more than two thirds of those who entered in 1970.

Like France, Belgium has favoured permanent settlement and integration of immigrants as a means of improving the demographic situation.[21] About 8 per cent of the total population enumerated in the 1970 census were foreign-born (see annex table 145). When unemployment rose in 1967 and 1968, stricter immigration controls were enforced, but a subsequent improvement in the labour market was accompanied by increased immigration. However, a new turn-around in the economy, which began in mid 1974, moved the Government, in August of that year, to halt immigration except for persons from the European Economic Community, who are guaranteed freedom of movement among member States.

After the Second World War the Netherlands, a country of very high population density, encouraged the emigration of its nationals. By the late 1950s, however, labour shortages had developed, and in the 1960s the number of immigrants, admitted to relieve these shortages, exceeded the number of nationals of the Netherlands who emigrated. Insignificant before the mid 1960s, a large immigration has developed from Surinam; the net intake from this source amounted to nearly 20,000 in 1965–1969 and more than doubled during 1970–1974. Between January and November 1975, when Surinam became independent, additional large numbers emigrated to the Netherlands. As a result of the large influx of migrants, ethnic tensions were said to be causing the Government of the Netherlands to consider ending its "open door" policy. [22] Altogether, immigrant workers were estimated to constitute nearly 5 per cent of the labour force in 1974 (see annex table 149).

Switzerland had already begun to take in large numbers of foreign workers in the 1950s, owing in part to the low rate of natural increase before the war and low rates of female labour force participation.[23] A peak in immigration was reached in 1960–1964, when more than 800,000 residence permits were issued to foreigners authorized to work (see annex table 144). Concern about the high rate of immigration on social, more than on economic grounds, led the Government to impose a series of restrictions beginning in 1963. The number of residence permits issued to new workers is seen to have turned sharply downward beginning in the late 1960s. For the first time in 1974 the migration balance was negative. Recent cutbacks in employment are expected to facilitate implementation of the Government's policy to reduce progressively the number of foreigners living in the country.

In Austria foreign workers began to be recruited in 1962. Of the 218,000 foreign workers reported in 1974, 166,000 were from Yugoslavia and 30,000 from Turkey (see annex table 149). The rapid intake of foreign workers continued until Austria's post-war boom ended in 1974 under the influence of world-wide recession.[24]

With the exception of Austria and Switzerland, the other countries of Western Europe belong to the European Economic Community, which has since 1968 permitted free movement of workers within the Community. While there had been a considerable amount of migration among these countries before then, there is no evidence that the agreement stimulated further migration. In fact, the relative increase in the number of migrants from non-member States has been greater than that from member States, including Italy, since the new rules went into effect in 1968.[25]

Of an estimated total of just over 11 million foreign residents in seven countries of Western and Northern Europe in 1974, migrant workers numbered 5.9 million. The Federal Republic of Germany had 2.3 million, France 2.0 million and Switzerland 700,000 *(ibid.)*. These three countries accounted for 85 per cent of all migrant workers in the seven countries combined. In France and the Federal Republic of Germany migrant workers made up about 9 per cent of the labour force, as compared with 30 per cent in Luxembourg (not included in the table) and 24 per cent in Switzerland. The table shows that 1.0 million of the workers came from Italy, 0.8 million from Yugoslavia, 0.7 million from Turkey and 0.5 million each from Algeria and Portugal.

Information on the level of skills of migrant workers and their distribution by industry in selected countries is given in annex tables 150 and 151.

Southern Europe

Until very recently, Southern Europe, compared with the rest of Europe, has had relatively high rates of natural population increase, resulting in a labour supply in excess of domestic demand. Large numbers of migrants have accordingly left the region in search of better opportunities. At first they went mainly to overseas areas of settlement, but towards the end of the 1950s, they started to migrate in increasing numbers to the industrialized countries of Western and Northern Europe.

[20] Catherine Gokalp, "Chronique de l'immigration", *Population*, vol. XXIX, No. 4–5 (Paris, 1974), pp. 899–907; and *Population*, vol. XXX, No. 4–5 (Paris, 1975), pp. 889–896.

[21] Heinz Werner, "Migration and free movement of workers in western Europe", *International Migration*, vol. XII, No. 4 (Geneva, 1974), p. 312.

[22] Sheila Patterson, "International migration", *1976 Britannica Book of the Year* (Chicago, Helen Hemingway Benton, Publisher, 1976), p. 513.

[23] J.-E. Neury, *La population de la Suisse de 1966 à 1975: bref aperçu*, Bureau fédéral de statistique, section "Mouvement de la population" (Berne, décembre 1975).

[24] Organization for Economic Co-operation and Development, *Economic Surveys, Austria* (June 1975), pp. 5 and 13.

[25] Heinz Werner, *loc. cit.*, p. 325.

It can be seen from annex table 141 that each of the six countries of the region has had net emigration in each of the three periods examined. Net emigration during 1950–1974 totalled 2.2 million in Portugal, 2.0 million in Italy, 1.7 million in Spain and 1.6 million in Yugoslavia. In relation to population size, Portugal's annual net emigration rate of 14 per 1,000 population in the 1960s was the highest. Tiny Malta also had a rate in the same range in the 1950s, though it has since fallen. Despite the large totals in absolute terms, annual rates of net emigration in Italy and Spain were only 2.4 and 2.8 respectively in the 1950s and have since declined. Although the reliability of the estimates for Yugoslavia is somewhat uncertain, the data indicate a rising emigration trend during the period surveyed.

Annual immigration and emigration statistics are less complete for the countries of Southern Europe than for the countries of Western and Northern Europe. Data for recent years (see annex table 144) show a declining trend in the numbers of emigrants from Greece, Italy, Portugal and Spain. By 1974 a positive migration balance had developed in Italy and near equality in the numbers of emigrants and immigrants in Greece. In Portugal, owing to the large-scale return of population from the African territories, the migration balance had also become positive. Based on statistics kept by the main countries employing Yugoslav workers, it appears that the return movement to Yugoslavia exceeded the outward movement in 1974.

The Italians were the first to respond on a large scale to the employment opportunities offered in Western Europe, and of the more than 1 million emigrants from Italy during 1950–1954, about 570,000 went to other European countries, while about 680,000 went overseas. In the next two quinquennia, a strong shift was apparent in the direction of Italian migration and the proportion of intercontinental migrants declined to only 16 per cent in 1960–1964.

During the 1950s about half of the intercontinental emigrants from Italy went to Latin America—a total of 600,000 for the decade (see annex table 152). This migration stream decreased in the early 1960s and had nearly died out by the late 1960s. Moreover, in 1970–1974 more Italians returned from Latin America than migrated to the region.

Except for Italy, the countries of Southern Europe were not very much involved in intracontinental migration before the late 1950s. During the decade 1950–1959, overseas emigration took precedence over migration within Europe. Spain sent about 565,000 emigrants to Latin America, and Portugal 290,000 *(ibid.)*. This pattern changed in the 1960s, and of the 1.1 million reported emigrants from Greece, Portugal and Spain combined during 1966–1969, more than two thirds went to other European countries as compared with less than one third who went overseas. The numbers of Portuguese migrants to Brazil (their main destination in the 1950s) had trickled off to less than 1,000 annually, according to statistics for the years 1973–1974. More recently, however, thousands of skilled and professional workers who left Portugal fearing political instability are reported to have gone to Brazil, as job opportunities in the Federal Republic of Germany and France declined.

The rather steady net emigration to the Portuguese overseas territories (mainly to Angola and Mozambique) that occurred during the 1950s and 1960s was reversed in 1973, and in 1974, the year when political changes in Portugal brought prospects of early independence for the African territories, there was a net immigration from the territories of about 80,000 (see annex table 144). Meanwhile, emigration to other European countries fell in 1974 to the lowest level since the early 1960s. By early 1976 when the independence of the former African territories had become a fact, some newspaper reports placed the number of Portuguese repatriated from Angola and Mozambique as high as half a million.[26]

Both the European and overseas components of Greek emigration fell off greatly after 1970, in line with an improvement in domestic employment opportunities, as well as a downturn in the economics of countries employing Greek labour. The strength of the returning numbers, in combination with declining numbers of emigrants, resulted in a near balance of the two in 1974.

The emigration from Yugoslavia of workers seeking higher earnings began to involve significant numbers by the early 1960s, and soon afterwards the Yugoslav Government formally approved the practice as a means of easing domestic socio-economic problems.[27] Government estimates showed 672,000 nationals as temporarily abroad in 1971. By 1974 it was estimated that the number of Yugoslavs abroad had risen to 960,000. Economic activity in Yugoslavia in the last few years has run counter to the trends in most of the European countries that have drawn on Yugoslav labour, being relatively weak from 1971 to early 1973, but improving in the latter part of 1973 and in 1974. In 1975, employment in Yugoslavia was being projected to increase at 3 per cent annually, a rate sufficient to absorb new entries to the labour force as well as some expected net return flow of workers from abroad.[28]

In Malta, difficulties in providing productive employment for the growing labour force after the Second World War caused the Government to encourage emigration on a sufficient scale to reduce and maintain the population at a calculated optimum level.[29] Very high emigration rates have been attained, as shown in annex table 143. They have been sufficient to offset a diminishing natural increase and cause the population to decline slightly be-

[26] *The New York Times*, 1 March 1976.

[27] Ivo Baučić, *The Effects of Emigration from Yugoslavia and the Problem of Returning Emigrant Workers*, European Demographic Monographs (The Hague, Martinus Nijhoff, 1972), p. 2.

[28] Organization for Economic Co-operation and Development, *Economic Surveys, Yugoslavia* (April 1975), pp. 5–6. See also Mustafa Begtić, "Yugoslav nationals temporarily working abroad", *Yugoslav Survey*, vol. XIII, No. 1 (Belgrade, February 1972).

[29] C. A. Price, "Migration as a means of achieving population targets" in *Report of CICRED on the Seminar on Demographic Research in Relation to Population Growth Targets* (Trinidad and Tobago, 1973), p. 71.

tween 1950 and 1960. Most of the emigrants have gone to countries of the British Commonwealth.

At a time when Southern Europe has experienced a substantial emigration, there are reports of some migration between countries within the region and of immigration on a small scale from other less developed countries, from which workers come to take low-paid jobs vacated by emigrants. These migrations often escape the official statistics, either because they are illegal or because the statistics on immigration of the countries of Southern Europe are generally confined to returning nationals.

Italy is reported to have had some 40,000 officially registered foreign workers in the early 1970s, among them a certain number of Yugoslavs. There were said to be about 100,000 foreign workers in Spain, including Portuguese, Moroccans and Algerians, many of them illegal entrants. About 30,000 Egyptians, Sudanese, Ethiopians and Somalis were believed to be working in Greece.[30]

Northern Europe

The United Kingdom is unique in that it has received large numbers of immigrants, while continuing its traditional role of sending large numbers of people abroad. During the period under review, net migration has been generally negative, but the balance has remained very low (see annex table 143). For a brief period—from 1958 to 1963—immigration exceeded emigration.

It is estimated that in the period from mid 1964 to mid 1974 about 2.8 million persons emigrated from the United Kingdom and about 2.3 million arrived as immigrants, leaving a deficit of about half a million.[31] The annual data (see annex table 144) show a particularly low level of net emigration in 1972. In that and the following year about 26,000 Asians, who had been expelled from Uganda, were admitted to the United Kingdom. By 1974, when unemployment was growing as one of the effects of the oil crisis, emigration had risen and immigration had fallen.

In about the middle of the 1950s there began an important immigration into the United Kingdom from the newly independent countries of the British Commonwealth, at first, mainly from the former British West Indies (particularly Jamaica), and later from India and Pakistan and, on a smaller scale, from other Asian countries and Africa. Curbs on this immigration were introduced through the enactment of Commonwealth Immigrants Act in 1962. Later, the Commonwealth Immigrants Act of 1968 withdrew the absolute right of entry of United Kingdom passport holders who lacked a close connexion by birth or descent with the United Kingdom. In the census of 1971 1.2 million persons were enumerated as residents of Great Britain who had been born in New Commonwealth countries, among them 0.3 million in the West Indies, 0.5 million in India and Pakistan and 0.2 million in Africa. Statistics for recent years show a much diminished immigration from New Commonwealth countries.

While emigration of United Kingdom citizens to Old Commonwealth countries (Australia, Canada and New Zealand) appears to have been declining, emigration to European countries is on the rise. This movement of British workers to the continent shows up also in the statistics of the receiving countries and was apparent well before the United Kingdom's entrance into the European Economic Community.

Ireland, long a country of emigration, had an average net migration loss of 40,000 annually during the 1950s, or 13.7 per 1,000 population (see annex table 143). Since the natural increase amounted to only about 26,000 annually, the population was declining during this period. The emigration rate was reduced by more than one half in the following decade, however, and in the last few years the migration balance has become positive. Most Irish migrants go to the United Kingdom, where they may enter freely. It is said that the reversal of migration flows in 1972 and 1973 mainly reflected improved employment prospects in Ireland, but in 1974, when unemployment had begun to rise, the migration balance might have become a negative one again had it not been for the recession in the United Kingdom and increased unemployment benefits at home.[32]

Sweden alone among the countries of Northern Europe has had a net immigration of considerable numbers in the post-war period. During the 1950s and 1960s, the trend of immigration was upward, and by 1970 almost 7 per cent of Sweden's population was foreign born. A slow-down in the economy and rising unemployment in 1971 and 1972, well before recession conditions affected other European countries, caused the number of immigrants to decline and the number of emigrants to rise, leaving a negligible net immigration in 1971 and a net emigration in 1972–1973. In 1974 when the dampening effects of the energy crisis were beginning to be felt in other countries, the Swedish economy expanded strongly,[33] and there was again a net immigration balance (see annex table 144).

Since 1954 the Scandinavian countries have had a common labour market allowing for the free movement of workers. Finland has been the chief supplier of labour to Sweden, particularly in the 1960s, when migrants from that country accounted for nearly two thirds of Sweden's net immigration. Many Finnish workers returned home in 1972–1973 after a downturn in the Swedish economy had coincided with a boom in domestic activity in Finland, which benefited from the increase in world prices for forest-based products.[34] By the latter part of 1974, when a slow-down occurred in employment in Finland, a net outflow of migrants to Sweden had resumed.

[30] Sheila Patterson, "International migration", *1974 Britannica Book of the Year* (Chicago, Helen Hemingway Benton, Publisher, 1974), p. 475.

[31] Norman Davis and Christopher Walker, "Migrants entering and leaving the United Kingdom", *Population Trends 1* (Autumn, 1975), pp. 2–3.

[32] Organization for Economic Co-operation and Development, *Economic Surveys, Ireland* (November 1975), pp. 5 and 11–12.

[33] Organization for Economic Co-operation and Development, *Economic Surveys, Sweden* (June 1975), p. 5.

[34] Organization for Economic Co-operation and Development, *Economic Surveys, Finland* (December 1975), p. 5.

Eastern Europe

Each of the countries of Eastern Europe has registered some net emigration in the period since 1950, but only in the case of the German Democratic Republic was the volume large in relation to population size. During the 1950s estimated net emigration in that country amounted to 2 million, or 11.6 per 1,000 population annually (see annex table 143). This is one of the highest emigration rates observed in any country. Since emigration greatly exceeded natural increase, the population declined during this period. Most of the migrants went to the Federal Republic of Germany, where they are recognized as citizens. After the introduction of strict frontier control in 1961, emigration was severely curtailed.

Emigration from Czechoslovakia and Hungary was largely confined to particular years and related to particular events. Thus, there was a sizable emigration from Hungary in 1956–1957 and from Czechoslovakia after 1968. In addition, some ethnic Germans emigrated from Czechoslovakia to the Federal Republic of Germany during the 1960s. Available data for the 1970s suggest that migration has played a negligible role in population change in these countries. However, according to recent newspaper reports there may be as many as 30,000 Polish workers employed in the textile industry in Czechoslovakia.[35] In addition, small numbers of Yugoslavs, Hungarians, Bulgarians and Vietnamese are said to be working in Czechoslovakia to help ease severe labour shortages.[36]

In the early 1950s about 154,000 of the Turkish minority in Bulgaria were transferred to Turkey, and emigration to Turkey has accounted for most of the small net emigration from Bulgaria, which continued in the 1960s and 1970s. Romania has at various times permitted large numbers of its Jewish population to emigrate to Israel. This policy largely explains the net emigration balances of 138,000 in the 1950s and 112,000 in the 1960s.

Emigration from Poland has constituted a more continuous flow, less related to political events than that from other Eastern European countries. Several movements of a political nature affected the balances, however, particularly in the 1950s. In the latter half of that decade there was a repatriation of Jews and other Poles from the USSR, but this movement was offset by an emigration to the Federal Republic of Germany under an agreement aimed at uniting families. After 1970 about 58,000 ethnic Germans are said to have left Poland for the Federal Republic of Germany, when diplomatic relations were established between the two Governments. As a result of an agreement reached in August 1975, it was expected that 120,000–125,000 ethnic Germans still remaining in Poland would be granted permission to leave during the next few years.[37] Recent reports have indicated a rise in the numbers of exit permits being issued by the Polish Government for this purpose.

There are other reports of recent migrations among Eastern European countries or between them and other countries, none of which, however, looms large in relation to population size. Several thousands of unskilled Bulgarian workers were reported to have been employed on construction and other projects in the USSR.[38] The German Democratic Republic is said to have received in recent years about 13,000 Hungarian workers and more than 12,000 workers from Poland, where there is a surplus of agricultural workers who cannot at present be absorbed in the industrial or service sectors.[39] In 1974, the German Democratic Republic agreed to admit some Algerian workers.[40]

B. Less developed regions

Africa

While international migration has great economic and social significance in Africa and is known to involve millions of persons each year, assessments of the magnitude and characteristics of this migration are greatly handicapped by the paucity of reliable data. Only a few countries in Africa publish immigration and emigration statistics collected at ports of entry; some existing records cover only non-African population and others exclude land border crossings, which account for the majority of movements. The most reliable statistical sources of information on the volume and pattern of international migration are population census tabulations that distinguish between native and foreign-born populations or between nationals and aliens.

Northern Africa

Algerian workers had helped to relieve labour shortages in France as early as the First World War, but it has been mainly in the period since around the middle of the 1950s that a sizable emigration has developed from North Africa to Western Europe. Rapid population growth in the countries of North Africa and the inability of domestic economic development to absorb all of the available labour supply led to this movement. According to recent estimates of the International Labour Office, about 1.6 million persons from North African countries were living in Europe at the beginning of 1975, most of them from the three Maghreb countries—Algeria, Morocco and Tunisia. Of these three countries, Algeria has had by far the largest emigration to Europe. There were estimated to be roughly 900,000 Algerians, 400,000 Moroccans, and 180,000 Tunisians residing in Europe.[41] The number of Algerian migrants in Europe

[35] *Die Zeit*, 21 November 1972, as cited in Peter Schulz, "Labor migration among the socialist European countries in the post-World-War-II period", *International Migration*, vol. XIII, No. 4 (Geneva, 1975), p. 195.

[36] *The New York Times*, 20 April 1976.

[37] *Ibid.*, 2 August 1975.

[38] G. Beyer, "International migration from and within Europe", International Population Conference, Liège, 1973 (Liège, International Union for the Scientific Study of Population, 1973), vol. III.

[39] Peter Schulz, *loc. cit.*, p. 196.

[40] International Catholic Commission, *Migration News*, No. 4 (Geneva, 1974), p. 36.

amounts to over 5 per cent of the population of Algeria, while Moroccan and Tunisian migrants constitute roughly 2 and 3 per cent respectively of their home populations. Since a relatively high proportion of the migrants are workers, the impact on the home labour force is even greater than that on the total population. The estimated 450,000 Algerian workers in Europe, for example, are equal to 12 per cent of the economically active population of Algeria (see annex table 149).

More than 90 per cent of the Algerian migrants to Europe have gone to France. Another large migration between Algeria and France consisted of French nationals who were repatriated following Algerian independence in July 1962. The 1966 census of Algeria showed that only 68,400 French nationals remained in Algeria out of a former population of close to 1 million.

Total emigration from Morocco between 1960 and 1971 has been estimated at 900,000, including about 500,000 foreigners and Moroccan Jews, and 400,000 Moroccan Moslems.[42] Over 100,000 Moroccan Jews migrated to Israel in the first half of the 1960s, according to Israeli statistics.

Before independence in 1956 there was little emigration of Tunisians abroad, but the numbers have since risen steadily. Estimated net emigration was only 11,000 during 1957–1959 but had risen to 92,000 in 1970–1973.[43] The latter averaged 4.3 per 1,000 population annually—a rate comparable to that in some countries of Southern Europe.

Emigration from Egypt, though increasing, has been on a small scale compared with that from the Maghreb countries. Australia, Canada and the United States of America, the main destinations of Egyptian migrants, together admitted about 26,000 in 1970–1974. Egyptians migrating to the United States were a particularly well-educated group: according to Egyptian statistics, in 1969 87 per cent of them were of university level or above.[44]

The oil-producing Arab States are a more important outlet for qualified Egyptian migrants. For example, there were 30,000 Egyptians in Kuwait, according to the results of the 1970 census, nearly two fifths of them professional or managerial personnel. Much smaller numbers of Egyptian migrants, generally less well-educated and with fewer skills, have gone to Europe.

Within the region of Northern Africa, Libya, an important oil-producing country, and to a lesser extent, Algeria, have been attracting workers from neighbouring States, and in Libya's case, even from greater distances. The 1966 census of Algeria counted 99,000 Moroccan nationals and 13,000 Tunisians. Many of the foreign workers are employed in the petroleum and construction industries. The number of foreign workers in Libya had grown from an estimated 70,000 in 1971 to 128,000 by September 1973 (see annex table 159), the largest numbers coming from the neighbouring countries of Egypt (61,000) and Tunisia (21,000). Others came from Western South Asian countries. Much of the migration consists of skilled and professional workers. The percentage of foreigners in main occupational categories in 1973 is shown below:[45]

Total	22.0
Professional	55.9
Technicians	20.2
Clerical	13.8
Skilled and semi-skilled	18.8
Unskilled	24.5

Sub-Saharan Africa

Intercontinental migration

Intercontinental migration from Africa south of the Sahara has been on a small scale. Probably the largest migrant stream has been that from the New Commonwealth countries to the United Kingdom. The 1971 census of the United Kingdom recorded 164,000 residents who had been born in the New Commonwealth countries of Africa; of these about 60,000 were from Kenya, including a large group of Asians. According to ILO estimates, there were about 100,000 immigrants from former French Territories in West Africa living in Europe at the beginning of 1975. Migrants from sub-Saharan Africa (excluding South Africa) to Northern America totalled only a few thousand annually until 1972–1973, when the numbers were swollen by the admission of Asian refugees from Uganda. Mauritius, in the Indian Ocean, has in recent years had a significant emigration in relation to its population size. During the latter 1960s and early 1970s net emigration was at a rate of 4.3 per 1,000 population annually. Migrants went mainly to Australia and the United Kingdom.

Following the Second World War, and continuing into the 1950s, some Europeans migrated to territories under European administration, particularly to former British Territories, such as Kenya, Southern Rhodesia, and the United Republic of Tanzania, the former French Territories in West Africa, Zaire (the former Belgian Congo) and the former Portuguese Territories of Angola and Mozambique. The European populations of these areas were later reduced when independence came to most of the African countries where they had settled. Some Europeans returned home, while others migrated to Southern Rhodesia and South Africa.

The level of immigration of Europeans in South Africa has been closely related to Government policy.

[41] J. H. Lasserre-Bigorry, "General survey of main present-day international migration for employment", *Migrant Workers*, International Labour Office, General Conditions of Work Series, No. 34, (Geneva, July 1975).

[42] Morocco, Institut national de la statistique et d'économie appliquée, *La population due Maroc*, CICRED Monograph Series, World Population Year 1974 (Rabat, 1974), p. 21.

[43] Mahmoud Seklani, *La population de la Tunisie*, CICRED Monograph Series, World Population Year 1974 (Tunis, 1974), p. 73.

[44] Atef M. Khalifa, for the Institute of Statistical Studies and Research, *The Population of Egypt*, CICRED Monograph Series, Population Year 1974 (Cairo, 1973), p. 19.

[45] The data are the preliminary results of the July 1973 population census of Libya as quoted by Abdelmegid M. Farrag, "Migration between Arab countries", *Manpower and Employment in Arab Countries: Some Critical Issues* (Geneva, International Labour Office, 1975).

After the Nationalists came to power in 1948, the volume dropped and by 1960 the number of emigrants exceeded the number of immigrants. Labour shortages in the 1960s caused the Government to favour immigration, however, and a rise is seen in the numbers of immigrants during this period (see annex table 144). Since 1970 immigration has again shown a declining trend, but even so, net immigration remained above the pre-1963 level.

Immigration of Europeans to Southern Rhodesia was at a high level in the 1950s, but declined sharply during the years preceding the unilateral declaration of independence in 1965. While the trend reversed later in the 1960s, by 1973–1974 net immigration was again negligible.

Statistics on passenger movements by sea show a net inward balance to Angola of about 80,000 from Portugal during 1950–1959 and about 60,000 during 1960–1969. Comparable figures for Mozambique were roughly 40,000 and 35,000 in the two periods, respectively. These data, which exclude movements by air, must understate actual migration. Nevertheless, it seems clear that, despite the active encouragement of the Portuguese Government, emigration to the African Territories was small in comparison with that to Western Europe. After the political events of 1974, the migration balance shifted direction. Statistics on passenger movements by sea and by the Portuguese airline TAP show a net return migration to Portugal of 34,000 from Angola and 35,000 from Mozambique in 1974. Later, with growing civil conflict in Angola, the movement turned into a mass exodus. As mentioned in section A of the present chapter, the number of refugees who returned to Portugal from Angola and Mozambique, many of them by special airlifts, was estimated at half a million by early 1976. In Mozambique, which had a white population of about 163,000 when a census was taken in 1970, only 50,000 Portuguese were said to remain by 1976.[46]

In recent years there has been a new immigration into some African countries of skilled technicians who come on short-term contracts to supply skills needed for economic development.[47] However, such migration is on a very modest scale.

Some countries of Eastern Africa, such as Kenya, Uganda and the United Republic of Tanzania, had sizable Asian populations who were mostly descendants of migrants coming from India in the late nineteenth and early twentieth centuries. Following independence and growing Government efforts to improve the economic position of the native African population, there was an out-migration of Asians. Many went to the United Kingdom. The most spectacular exodus occurred after August 1972, when all non-national Asians were ordered to leave Uganda within 90 days. Some 26,000 settled in the United Kingdom, while smaller numbers were absorbed by other countries, including Canada, India and the United States of America.

[46] *The New York Times,* 1 March 1976.

[47] W. T. S. Gould, *Africa and International Migration,* African Population Mobility Project, Working Paper No. 16 (University of Liverpool Department of Geography, March 1974), p. 7.

Intracontinental migration

Intracontinental migration in Africa, which tends to be mostly of an intraregional character, has greater significance than intercontinental migration. The main patterns of this migration were established during the period of colonial rule, and the general tendency of newly independent States, either for economic or political reasons, has been to reduce these movements across national boundaries.

The largest importer of African labour has been South Africa, and the main supply countries, listed in order of the volume of migrant workers, are Lesotho, Mozambique, Malawi, Botswana and Swaziland. Recruitment of labour, mainly for work in the mining industry, is highly organized. Workers are generally allowed to remain in South Africa for periods of up to two years. The number of foreign-born Africans recorded in South Africa's population censuses has shown a declining trend, from about 606,000 in 1951, to 587,000 in 1960 and 490,000 in 1970. Because African labourers are not permitted to be accompanied by their families, there are about nine males for every female. After independence, the Governments of the United Republic of Tanzania and Zambia cut off emigration to South Africa for political reasons.

In relation to its population size, Southern Rhodesia has been an even greater importer of labour than South Africa. According to the 1969 census, 7 per cent of the African population was foreign-born, as compared with 3.3 per cent in South Africa in 1970. The annual statistics of immigration and emigration show a greatly reduced migrant flow in recent years, however (see annex table 144). After Southern Rhodesia's unilateral declaration of independence, immigration from Zambia was nearly halted and the inflow from Malawi and Mozambique was greatly curtailed.

In Zambia, more than one quarter of the labour force in the mines was foreign-born in the peak years of the 1950s, but immigration has since declined. This has been accomplished by tighter security measures on the borders with Angola and Mozambique and stricter controls over the granting of work permits and entry visas, as the Government of independent Zambia has sought to promote indigenization of jobs.[48]

Emigration has had rather severe demographic effects in some of the smaller countries. In Lesotho, for example, 117,000 persons reported to be abroad at the time of the 1966 census constituted 12 per cent of the total population, and two fifths of the male population 15 years of age and over.[49] Absentees from Malawi, Botswana and Swaziland are reported to have amounted to from nearly one fifth to more than one fourth of the adult male populations of those countries.

In Eastern Africa the cotton-growing areas of Uganda, farms in the highlands of Kenya and sisal es-

[48] Patrick O. Ohadike and Habtemariam Tesfaghiorghis, *The Population of Zambia,* CICRED Monograph Series, World Population Year 1974 (Lusaka, 1974), pp. 122 and 133.

[49] Percentages are computed on a population base that includes the numbers abroad.

tates of the United Republic of Tanzania have proved attractive to migrants from poorer areas. In Uganda, the foreign-born population numbered 752,000, or 8 per cent of the total African population at the 1969 census. The flood of immigrants during the 1960s included many refugees (see below). In Kenya, on the other hand, only 1.5 per cent of the population was foreign-born (see annex table 145).

The main centre of attraction for migrants in Middle Africa has been the copper belt of Zaire. According to the 1970 census, 4.3 per cent of the country's population were foreigners. In Gabon foreigners made up about 5 per cent of the total population. Most of the immigrants came from Western Africa and from other members of the Central African Customs and Economic Union (the Central African Empire, the Congo and the United Republic of Cameroon), which have concluded a convention calling for the free movement of persons.[50]

The main migration currents within Western Africa have been traditionally from north to south and from the interior westward to the coast, going mainly from Upper Volta, Mali and Niger to Ghana and the Ivory Coast. East to west seasonal movements to the groundnut basin have been diminishing. Except for Nigeria, international migration plays an important role in most of the other countries of Western Africa (see annex table 153). The foreign-born population of Ghana, which had amounted to 8 per cent of total population in 1960, had by 1970 been reduced to 4 per cent.[51] Like a number of other independent African states, Ghana had begun to require residence and work permits for non-nationals. In November 1969 a "Compliance Order" was issued, authorizing expulsion from Ghana of all aliens who had not obtained residence permits. It has been estimated that at least 200,000 aliens left Ghana within six months as a result of this order.[52]

According to estimates of the International Labour Office, the foreign population of the Ivory Coast amounted to 1,400,000 in 1975 *(ibid.)*. Foreigners thus made up more than one quarter of the total population and perhaps more than half of the labour force of the country where native labour is insufficient to ensure the efficient working of factories and plantations. Upper Volta is unquestionably the leading exporter of labour in Western Africa. Estimates in table 153 suggest that about 1 million persons from this country were abroad in 1975, a number equal to about 17 per cent of the total population and about 30 per cent of the labour force. Togo, while drawing a considerable number of immigrants, has also had substantial emigration. A survey carried out in 1960 found that for every five Togolese residing in their own country, one had migrated to Ghana.[53]

Refugees

At the end of 1975 there were an estimated 1,148,000 refugees living outside their home countries in Africa who were the concern of the Office of the United Nations High Commissioner for Refugees (UNHCR). This was about half the number of refugees in the entire world who come under the protection of this office.[54]

The numbers are in a constant state of flux, for while certain groups are being repatriated, new political conflicts springing up elsewhere add to the totals. Most of the refugees are in Eastern, Middle and Southern Africa, with relatively few in Western Africa. According to the UNHCR estimates, the largest single group of refugees in Africa were the 460,000 Angolans in Zaire, at the end of 1975 (see Annex table 154). Plans were being made for financial assistance to be provided to help with the resettlement of Angolan refugees who were expected to return home as a result of their country's accession to independence.[55]

Refugees from two other former Portuguese Territories, who had fled to neighbouring countries, were beginning to be repatriated in 1975. It was estimated that some 65,000 refugees had returned from Senegal and Gambia to Guinea-Bissau by May 1975. About 50,000 remained in Senegal at the end of 1975. In Mozambique, refugees began to return following the establishment of a transitional government in preparation for full independence in June 1975. By March 1975 about 50,000 had returned from neighbouring countries where they had sought refuge: by the end of 1975 it was estimated that 33,700 remained in the United Republic of Tanzania. Another large-scale recent repatriation movement involved about 180,000 Sudanese who had been living in the Central African Empire, Ethiopia, Uganda and Zaire.

Next to Zaire, the United Republic of Tanzania had the largest refugee population in 1975—about 171,000, of whom 110,000 had come from Burundi during 1972 and 1973. Uganda had about 78,000 refugees from Rwanda.

Refugees have in some instances been able to make a positive contribution to the development of the host country, when they have settled in sparsely populated areas and have cleared and cultivated the land. This was the case, for example, in the United Republic of Tanzania, where government authorities encouraged Rwanda refugee settlement in 1962–1964 as a means of developing unused land. On the other hand, a massive influx of refugees such as the 400,000 Angolans in Zaire

[50] J. H. Lasserre-Bigorry, "General survey of main present-day international migration for employment", *loc. cit.*, pp. 6 and 8.

[51] The percentage of aliens was considerably higher (see annex, table 153), since Ghanaian nationality is difficult to acquire and children born in Ghana of alien parents assume the nationality of the parents.

[52] Margaret Peil; "Ghana's aliens", *International Migration Review*, vol. VIII, No. 8 (New York, Fall 1974), p. 367.

[53] Tom K. Kumekpor and Sylvere I. Looky, as quoted in Samir Amin, *Modern Migrations in Western Africa; Studies Presented and Discussed at the Eleventh International African Seminar, Dakar, April 1972* (London, Oxford University Press, 1974), p. 74.

[54] The Palestinian refugees are the special concern of the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA).

[55] *Official Records of the General Assembly, Thirtieth Session, Supplement No. 12* (A/10012), paras. 190–193.

has caused pressures on land resources in the border zone.[56]

Latin America

Reasonably reliable migration statistics are available for very few countries in Latin America, data pertaining to emigration being particularly rare. Moreover, as immigration to Latin America has declined in importance, the statistical records kept on migration in some cases appear to have deteriorated. The present review relies to a large extent on statistics of the countries with which Latin America has exchanged migrants and on population census data concerning immigrant populations.

The principal countries of immigration in Latin America are Argentina, with 9.3 per cent of its population foreign-born in 1970, Uruguay, with 8 per cent foreign-born in 1963, and Venezuela, where the foreign-born were 5.6 per cent of the population enumerated in 1971 (see annex table 145). While Brazil had a foreign-born population numbering 1.2 million in 1970, it constituted only 1.3 per cent of the total population.

Migration exchanges with Southern Europe

The volume of migration to Latin America from the three main sending countries of Southern Europe has been summarized in section A of the present chapter (see also annex table 152). The main receiving country in Latin America for these migrants was Argentina. During 1950–1959 Argentina received close to half a million immigrants from Italy and Spain. According to statistics of the sending countries, return migration amounted to about 150,000, leaving a net figure of 350,000. This pattern was changed a decade later, when during 1960–1969 Argentina received probably fewer than 80,000 migrants from Italy and Spain, and return migration slightly exceeded the intake from these countries.[57]

Brazil received over 400,000 immigrants from Southern Europe during 1950–1959, over half of them from Portugal. In the 1960s this immigration was reduced to about 120,000. According to the statistics of the sending countries, net immigration amounted to more than 350,000 in the 1950s and about 70,000 in the following decade. These balances are likely to be overstated, since return migration statistics for Portugal, in particular, are incomplete.

Based on statistics of the sending countries, immigration from Southern Europe to Venezuela totalled over 400,000 in the 1950s and more than 160,000 in the 1960s. Thus the flow from Southern Europe to Venezuela did not decline as much in the 1960s as it did to Argentina and Brazil. A very high return migration to Italy and Spain was evident, however, in the 1960s, leaving at most a very small net immigration in Venezuela. On the other hand, a continuing small net inflow from Portugal in the 1960s is confirmed by census data.

Uruguay is the only other Latin American country to receive significant numbers of immigrants from Southern Europe during the period under review. According to Italian statistics, there was a net emigration of 13,000 to Uruguay in the 1950s, but this trend was reversed in the 1960s, as was that from Spain to Uruguay, leaving in both cases a small negative balance for Uruguay.

Little is known of the migration of Latin Americans to Europe. The statistics of Northern and Western European countries give no indication of significant numbers of migrants from Spanish-speaking Latin American countries, and the countries of Southern Europe, which, owing to cultural similarities, might have attracted such migrants, generally publish immigration data only for returning nationals. The number of foreign residents registered in Spain do not suggest that immigration from Latin America has been very great. At the end of 1972, about 11,000 Cubans, 8,000 Venezuelans and less than 6,000 Argentinians were registered.

Emigration to other regions

Attention has already been drawn to several new or intensified currents of emigration from Latin America during the period under review. These include a sharply rising trend of emigration from Spanish-speaking areas of the region to the United States of America, a substantial flow from the former British West Indies to Canada and the United States, as well as to the United Kingdom, and a flow of considerable significance in recent years from Suriname to the Netherlands.

It has been shown in annex table 146 that the number of migrants from Latin America to the United States of America (not including those from Puerto Rico) numbered 2.6 million in the period 1950 to 1974—0.6 million of them arriving in the 1950s, 1.2 million in the 1960s, and the remainder after 1970. Since the United States keeps no statistics on emigration, it is not known directly how many of these immigrants later returned home or migrated elsewhere. Some indication of the net intake up to 1970 is given, however, by the number of persons born in Latin American countries who were enumerated in United States population censuses. Table 25 shows that at the April 1970 census there were 1.8 million residents of the United States of America who had been born in Latin American countries (including the Caribbean region, except for Puerto Rico). Twenty years earlier, in 1950, the population of Latin American birth numbered 650,000. Since some of the immigrants enumerated in 1950 would since have died, it is certain that net immigration was in excess of the 1.2 million difference between the 1950 and 1970 figures.

TABLE 25. POPULATION ENUMERATED IN THE UNITED STATES OF AMERICA AND BORN IN LATIN AMERICA

(Thousands)

	Total	*Born in Puerto Rico*	*Other*
1950	877.1	226.1	651.0
1960	1 523.7	615.4	908.3
1970	2 614.1	810.1	1 804.0

[56] W. T. S. Gould, *Refugees in Tropical Africa,* African Population Mobility Project, Working Paper No. 10 (University of Liverpool Department of Geography, December 1973), p. 12.

[57] This statement is based on statistics of Italy and Spain. Data compiled in Argentina show a much smaller number of immigrants from Spain during 1960–1969 than is suggested by the Spanish statistics.

Unlike the bulk of Latin American emigration to the United States of America, which was concentrated in the 1960s and 1970s, the main inflow from Puerto Rico occurred in the 1950s. Migration between the United States and Puerto Rico, as revealed by passenger statistics, left a smaller net immigration in the United States in the 1960s and turned in Puerto Rico's favour after 1971.

The two Latin American countries that have sent the largest numbers of migrants to the United States are Mexico and Cuba. According to the 1970 census of the United States of America, there were about 760,000 persons who had been born in Mexico and 439,000 who had been born in Cuba. Adding immigrants who arrived in later years, these groups may have numbered about 1 million and over 0.5 million, respectively by 1974. Actually, the totals for these two groups may have been higher, since there are believed to be many illegal immigrants from Mexico, and the figures for Cuba do not include some persons who had been admitted as parolees but had not yet been given permanent residence status. As shown in annex table 155, the estimated number of Cubans in the United States in 1974 constitutes nearly 6 per cent of the population of Cuba. Other countries having emigration rates to the United States in the same range are also concentrated in the Caribbean area: they include Jamaica (6 per cent), and Trinidad and Tobago (5 per cent). Further behind is the Dominican Republic (2.4 per cent). None of these countries has had an emigration rate comparable to that of Puerto Rico, whose native inhabitants are United States citizens and are thus able to enter the United States mainland without restrictions. The estimated 720,000 mainland residents in 1974 who were born in Puerto Rico amount to about one quarter of that island's population. Haiti has had an increasing emigration to the United States in recent years. The estimated 50,000 Haitians living in the United States in 1974, however, amount to only a little more than 1 per cent of that island's total population.

While there is no evidence that very large numbers of Spanish-speaking Latin Americans have emigrated to countries other than the United States of America, emigrants from the former British West Indies have gone also in substantial numbers to Canada and the United Kingdom. The earliest outflow, stimulated by high unemployment rates in the islands, was to the United Kingdom. When this current was checked by the Commonwealth Immigrants Act in 1962, Canada and the United States became alternative destinations. The number of immigrants born in Jamaica had reached 69,000 in the United States in 1970, and 25,000 and 172,000, respectively in Canada and the United Kingdom in 1971. At the same dates, immigrants from Trinidad and Tobago in the three countries numbered 21,000, 17,000 and 17,000 respectively.

Emigration appears to have been an effective means of reducing population growth in Jamaica, where, in its absence, the growth rate would have averaged 3 per cent annually in the 1960s.[58] Owing to immigration from other islands of the Caribbean, Trinidad and Tobago did not show a significant net emigration in the 1950s. During the 1960s, however, net emigration may have been even greater than is indicated by the following figures, based on recorded migration:

	Estimated net migration (thousands)		*Estimated annual net migration (per 1 000 population)*	
	1950–1960	*1960–1970*	*1950–1960*	*1960–1970*
Jamaica	–180.0	–288.0	–11.9	–16.5
Trinidad and Tobago	–4.2	–41.8	–0.6	–4.5

Emigration from Surinam reached exceedingly high proportions in the years just before the country attained independence (November 1975). Since 1960 the Netherlands has had a net intake of some 65,000 persons from Suriname, a figure amounting to about 16 per cent of Suriname's total population.

Migration within Latin America

There are indications that migration between Latin American countries has taken on greater importance during the period under review. In relation to the size of their populations, the principal countries of immigration for intraregional migrants are Argentina and Venezuela (see annex table 156) and the principal country of emigration is Paraguay, followed by Chile and Colombia.

While immigration to Argentina from Southern Europe has declined, migration from neighbouring Bolivia, Chile and Paraguay has been on the rise. The number of persons residing in Argentina who had been born in other Latin American countries increased from 323,000 at the 1947 census, to 483,000 in 1960 and about 590,000 in 1970, according to a sample tabulation of the census, thus amounting to about 2.5 per cent of total population at the latter date. Among the immigrants were more than 210,000 Paraguayans—a number equal to 8 per cent of Paraguay's population.

Increasing immigration from neighbouring countries is also evident in Venezuela. At the 1971 census, 229,000 persons, or a little over 2 per cent of the total population, were reported to have been born in other Latin American countries. Among the immigrants were 180,000 Colombians. In relation to the total population of the sending country, however, they constituted only a small fraction.

Possibly substantial errors may occur in census reporting of foreign-born populations, particularly in conditions such as those existing in Latin America, where the immigrant has a language and culture in common with the native population. It has been estimated that, owing to illegal immigration, there may have been as many as 1 million migrants from other Latin American

[58] G. W. Roberts and others, *Recent Population Movements in Jamaica*, CICRED Monograph Series, World Population Year 1974 (Kingston, Jamaica, 1974), p. 9.

countries in Argentina in 1970,[59] though fewer than 600,000 were enumerated in the census. Estimates which attempt to include illegal migration have been prepared for the main sending and receiving countries of South America by the International Labour Office (see annex table 157).

In Middle America the main migrant stream has been from densely populated El Salvador, where unemployment rates are especially high, to neighbouring Honduras. Nearly all of the 51,200 foreign nationals enumerated in the 1961 census of Honduras were from other countries of the region, 38,000 of them from El Salvador. This migration presumably grew rapidly in the 1960s as many migrant farmers settled on undeveloped tracts of land in Honduras. However, some of the Salvadorean migrants in Honduras were repatriated after the "football war" between the two countries in 1969 and after the Government of Honduras began to enforce its Agrarian Reform Law, which gives only native-born citizens the right to own land.[60]

Political migrations

Two main political migrations occurred in Latin America during the period under review. The exodus from Cuba following the change of government in 1958 was by far the larger of the movements, involving by the time it was completed more than half a million persons. Most of the migrants went to the United States of America, where they were first admitted as parolees and later had their status adjusted to that of permanent residents. In addition, small numbers of Cubans who emigrated during this period settled in Spain and in various Latin American countries.[61]

It has been estimated that slightly more than 15,000 Chilean refugees emigrated between October 1973 and June 1974, about two thirds of them going to Argentina, and the remainder mainly to several European and Latin American countries.[62]

Asia

Except in Western South Asia, relatively little migration in the economic sense has occurred between Asian countries in the period under review. Governments of various newly independent states which had previously attracted migrants imposed restrictions on further immigration, and in some cases members of minority groups who were the product of earlier migrations were repatriated. In recent decades the largest international migration movements in Asia have been refugee movements. There has also been a rising trend of emigration from the area to the more industrialized parts of the world. Since reliable statistics of immigration and emigration exist for only a very few Asian countries, the latter movement can be assessed only from the statistics of the countries to which Asians have migrated.

Intercontinental migration

The Asian countries which have sent the largest numbers of migrants to other continents in the period since 1950 include the following (table 26):

TABLE 26. EMIGRANTS FROM ASIA TO OTHER CONTINENTS

	Approximate numbers of emigrants to other continents, 1950–1974	*Main destination*
Turkey	More than 1 000 000	Federal Republic of Germany
India	450 000	United Kingdom
China and Hong Kong	380 000	United States
Philippines	300 000	United States
Japan	175 000	United States
Pakistan	160 000	United Kingdom
Republic of Korea	130 000	United States
Cyprus	Nearly 100 000	United Kingdom

Other countries which have sent apparently fewer, though not negligible, numbers of migrants outside Asia include Lebanon, Malaysia, Singapore, Sri Lanka and Syria. The estimates in table 26 have been compiled from sometimes incomplete and non-comparable statistical series available for leading countries of immigration. They may be underestimates in that they do not include all countries to which migrants from Asia have gone; on the other hand they may fail to take sufficient account of return migration. At best, they can be regarded as only rough approximations of the volume of emigration from Asian countries to other continents in the period under review.

Since 1960 a rising flow of emigrants, mainly to Western Europe, has negatively affected the rate of population growth in Turkey. Workers sent abroad through the Turkish Ministry of Labour totalled 569,200 for the years 1960–1971. However, many others emigrated who did not go through official channels.[63] From statistics of the countries of immigration it can be estimated that during 1970–1974, when Turkish emigration reached a peak, the net outward balance averaged about 4 per 1,000 annually, a rate in the same range as has been found among some countries of Southern Europe.

The Federal Republic of Germany, the main receiving country for Turkish migrants, enumerated 429,000

[59] Julio Morales-Vergara, *Panorama de la Migración Internacional entre Países Latinoamericanos*, CELADE Series A, No. 121 (Santiago, Chile, Centro Latinoamericano de Demografía, January 1974), p. 42.

[60] Howard I. Blutstein and others, *Area Handbook for El Salvador* (Washington, D.C., The American University, Foreign Area Studies, 1971), pp. 53–54.

[61] United States Committee for Refugees, "1969 world refugee population", *World Refugee Report; Annual Survey* (New York, 1970), p. 18.

[62] International Catholic Migration Commission, *Migration News*, No. 4 (July-August 1974), p. 37.

[63] Haluk Cillov and others, *The Population of Turkey*, CICRED Monograph Series, World Population Year 1974 (Ankara, Hacettepe University, Institute of Population Studies, 1974), pp. 47–48.

Turkish nationals in the May 1970 population census. In the four years following the census, the number of Turkish immigrants more than doubled, so that by the middle of 1974 there were close to 1 million Turkish immigrants. The impact of the recession is seen in the sharp decline in the number of new immigrants in 1974, the first such decline since the recession year of 1967; at the same time the number of Turkish emigrants from the Federal Republic of Germany rose to a new high.

Most of the other Turkish migrants during the period under review went to Western and Northern European countries, with relatively few settling overseas. The majority of the 48,000 persons of Turkish birth enumerated in the 1970 census of the United States of America had arrived before 1950. Altogether, the approximately 1.3 million Turks estimated to be living outside Turkey in 1974 constituted over 3 per cent of the population of Turkey.

Migrants from China and Hong Kong have gone principally to the United States of America and Canada during the period under review. Those entering the United States as immigrants totalled about 210,000 during 1950–1974, while Canada received about 110,000. Many of these migrants came originally from the mainland of China, but resided for a time in Hong Kong before settling overseas. For example, during 1970–1974 the United States admitted about 50,000 immigrants whose last place of residence was Hong Kong, but only about 20,000 who were born in Hong Kong.

Net immigration to Australia from China and Hong Kong amounted to about 24,000 during 1950–1974. In Great Britain, according to the 1971 census there were about 33,000 persons who had been born in China or Hong Kong and had immigrated since 1949.

The largest migration of Indians during the quarter of a century just ended has been directed towards the United Kingdom. This migration was running at more than 20,000 annually in the latter half of the 1960s. At the time of the 1971 census, there were 322,000 persons residing in the United Kingdom who had been born in India; of these about 252,000 had arrived after 1949. Though no precise figures are available, immigration since 1971 is known to have been light. On the other hand, Indian immigration to Northern America, and to a lesser degree, to Australia, has been rising. By the 1970s the United States had replaced the United Kingdom as the leading receiving country. During 1970–1974 immigrants to the United States who had been born in India numbered about 67,200, and to Canada about 47,800. The combined intake of these two countries, amounting to 23,000 annually, thus appeared to have reached the level of that of the United Kingdom in the years just before restrictions were imposed. Based on these recent statistics of immigration, and recent census data on the foreign-born, it can be estimated that, by 1974 there may have been about 110,000 Indian-born residents of the United States and about 68,000 in Canada.

Owing to the close ties between the two countries, immigration from the Philippines to the United States has had a long history, though compared with the volume of recent years migration earlier in the century took place on a small scale. Over the period 1950–1974 the Philippines sent a total of about 237,000 immigrants to the United States, about 41,000 to Canada and much smaller numbers to other countries, such as Australia. Since the beginning of the 1970s the number of immigrants to the United States averaged close to 30,000 annually, and it can be estimated that by 1974 there were probably more than 300,000 residents of the United States who had been born in the Philippines. The United States has also been the main destination of emigrants from the Republic of Korea. This migration current became numerically important after about 1968, and by 1974 there may have been about 125,000 persons resident in the United States who had been born in Korea.

Between 1950 and 1974 the United States received about 108,000 migrants from Japan, and Brazil received close to 60,000. Both countries had also had earlier immigration from Japan. On the basis of 1970 census data and immigration in subsequent years, it can be estimated that by 1974 there were about 140,000 residents of the United States who had been born in Japan, and about 154,000 in Brazil. Immigration of Japanese to Brazil was relatively heavy in the late 1950s and early 1960s, but had declined to a trickle by the 1970s. Unlike other Asian countries, where rapid population growth and insufficient economic development have created pressures for emigration in recent years, Japan has experienced rapid economic growth and manpower shortages.

Pakistan and Bangladesh have sent the great majority of their emigrants to the United Kingdom. At the 1971 census of the latter country, about 140,000 persons were enumerated who had been born in Pakistan or Bangladesh, all but about 9,000 of them having migrated in 1950 or later years. Only about 6,000 and 5,000 persons born in these countries were reported in the 1970 and 1971 censuses of the United States and Canada, respectively, though the number of arrivals in recent years has picked up sharply. Emigrants from other New Commonwealth nations, among them Cyprus, Malaysia, Singapore and Sri Lanka, have also favoured the United Kingdom, though in the case of Malaysia and Sri Lanka in particular, Australia has proved to be a strong secondary attraction.

Despite the big difference in their populations, Singapore appears to have sent almost as many persons overseas as has Malaysia (see annex table 158).

Cyprus, with a population of only 632,000 in 1973, had a total emigration of 97,000 between 1955, when reporting began, and 1974. The figures given in annex table 144 reflect a particularly large exodus in 1960 and 1961, just before the island became independent. Total emigrants in the period under review thus amounted to about 15 per cent of Cyprus's population, one of the highest emigration rates reported.

Aside from emigration of a political nature following independence in 1950, Indonesia has not sent many migrants abroad during the period under review. According to Netherlands statistics, net emigration from Indonesia to the Netherlands amounted to 180,000 in

1950–1959. Approximately 19,000 Netherlands nationals were repatriated in 1962 when West Irian was joined to Indonesia. Since the mid 1960s, however, net emigration from Indonesia to the Netherlands has been small.

Lebanon and Syria have had a long history of emigration to distant parts of the world. Migrants from these countries are found in both North and South America, Oceania and parts of Africa. In the period under review the largest numbers of migrants from Lebanon have gone to Australia and the United States, some 30,000 to each country, and approximately half as many to Canada. Syrian-born residents in the United States numbered 15,000 at the 1970 census and 4,000 more may have been added by recent immigration. Only very small numbers of Syrians have emigrated to Australia and Canada.

Migration in Western South Asia

Arab States

Foreign workers have begun to flow into oil-producing countries in Western South Asia and Northern Africa to fill the jobs being created as a result of the increased oil revenues of recent years. Statistics are very scanty, particularly for the last few years, when this migration intensified. The data given in annex table 159 suggest a total of about 1 million immigrants in four countries in the early 1970s. On the assumption that these figures are considerably understated, and taking account of the probable number of migrants in other countries of the region, one author concluded that the number of Arab migrants working in other Arab countries around 1970 might be close to 2.5 million.[64] Migration in this region has been stimulated by existing disparities among the Arab States. Those that are rich in resources and have been experiencing rapid economic growth lack qualified manpower, while other countries in the region that lack resources have an abundance of manpower. Migrants to the resource-rich countries have been mainly, but not exclusively, Arabs; they have also included workers from more distant countries such as Pakistan, and to a lesser extent, India. By early 1976, according to press reports, an estimated 50,000 Pakistanis were living in the United Arab Emirates and around 30,000 in Kuwait. The Pakistan Government was said to be taking steps to reduce the outflow of qualified personnel.[65]

Kuwait represents a special case of a country where, according to the 1970 census, over half of the population, and nearly three quarters of the labour force was composed of non-Kuwaiti nationals (see annex table 159). Jordanians and Palestinians form the largest foreign group, though Iranians, Iraqis, Egyptians, Syrians and Lebanese were also numerous. Of persons practising professional occupations, 85 per cent were non-Kuwaitis, and there was a similarly high concentration of foreigners among production process workers in industry.[66]

Though there are no census data or reliable migration statistics, Saudi Arabia is known to have had a large immigration of foreign manpower in recent years. Manpower experts from the International Labour Organisation (ILO) have estimated that approximately 400,000 non-Saudis were employed in 1970 out of a total of about 1.2 million workers employed in the country (*ibid.*).[67] Yemenis constitute the largest foreign group, many of them unskilled workers in agriculture, construction and industry. On the other hand, Jordanian, Lebanese and Syrian migrants are likely to be in white collar jobs. Projected manpower demands make it appear likely that continued immigration will be required for all worker levels except unskilled.

Bahrain, with a population of less than a quarter of a million at the 1971 census, also depends heavily on foreign labour. Nearly a fifth of the population, but more than a third of the labour force, was composed of foreigners *(ibid.)*. Three other small States belonging to ECWA—Oman, Qatar and the United Arab Emirates—are also heavily dependent on foreign labour. The 1968 census taken in the United Arab Emirates showed a total population of 179,000, of which 66,000, or 37 per cent, were immigrants. Estimates of the percentage of manpower that is foreign run as high as 83 per cent in Qatar and 57 per cent in the United Arab Emirates, while in Oman the foreign component of the labour force is estimated to be lower. Even the size of the total population in Oman and Qatar is uncertain, however.

The main labour-exporting countries of the region are Syria, Lebanon, Jordan, Democratic Yemen and Yemen. The estimated 200,000 Jordanians and Palestinians in Kuwait and Saudi Arabia *(ibid.)* represented almost 9 per cent of the population of Jordan in 1970. An estimated 280,000 migrants from Democratic Yemen and Yemen living in Saudi Arabia, Kuwait and the Persian Gulf States amounted to approximately 4 per cent of the combined populations of the two sending countries. Lebanese in Kuwait and Saudi Arabia represent about 2.5 per cent of Lebanon's population, while about 1 per cent of Syria's population was estimated to be living in those countries around 1970. Both Lebanon and Syria have also sent many emigrants to other continents as discussed above under "intercontinental migration".

Israel

Israel's population is made up predominantly of migrants, over half of the population in 1971 having been foreign-born. Most of the immigrants were drawn to the country for ideological rather than economic motives, many coming to escape repression elsewhere.

As shown in annex table 144, during 1950–1974 Israel received a total of 1.1 million immigrants, not including 75,000 potential immigrants, a new category established in 1969. The geographical origin of the immigrants has shifted greatly over the years. Immediately following

[64] Abdelmegid M. Farrag, "Migration between Arab countries", *loc. cit.*, p. 103.

[65] *The New York Times*, 8 February 1976.

[66] Abdelmegid M. Farrag, "Migration between Arab countries", *loc. cit.*, p. 87.

[67] O. J. C. Francis, "Report to the Government of the Kingdom of Saudi Arabia on manpower assessment and planning" (Geneva, ILO, 1971), as quoted in Abdelmegid M. Farrag, *loc. cit.*, p. 92.

the establishment of the State in 1948, and continuing into the early 1950s, immigrants were drawn mainly from the Jewish communities in the Asian Arab States (Iraq and Yemen, in particular) and from Eastern Europe (mainly Romania and Poland). Later in the 1950s and in the 1960s there was a sizable influx from Iran, Egypt and Tunisia and much larger numbers from Morocco, which alone sent over 100,000 immigrants between 1960 and 1964. Altogether, in the period from 1948–1972, immigration from the Arab States of Asia and North Africa totalled 578,000, making up 41 per cent of all immigrants.[68] The number of European-born immigrants (not including those from the USSR) was 541,000—38 per cent of the total. The trend in immigration since the early 1960s has been downward from all regions, with the exception of the Soviet Union. During 1970–1974 there were 95,700 immigrants from the latter country, compared with only 7,600 in 1965–1969. The high point of immigration from the Soviet Union came in 1973 when more than 33,000 arrived, but by 1974 the number had been cut in half.

Not all of the immigrants to Israel have remained. Official estimates place emigration at about 90,000 for the years 1948–1960 and about 78,000 during 1961–1971.

Migration in other regions of Asia

Until very recently the majority of Hong Kong's population consisted of persons born elsewhere, most of them in China. Although the number of persons born outside Hong Kong rose from 1,637,000 in 1961 to 1,716,000 in 1971, their proportion of total population declined from 52 to 44 per cent. In 1971, 95 per cent of the foreign-born had been born in China.

During the Second World War as many as 1 million residents of Hong Kong had fled to China to escape the harsh living conditions under the occupation. After the war there was a heavy inflow to Hong Kong, consisting both of return migrants and others, until controls were introduced in 1949. Between 1949 and 1961 immigration from China is estimated to have averaged about 40,000 annually. A large influx occurred in May 1962 when emigration controls were temporarily lifted in Kwangtung Province in China, and about 70,000 persons entered Hong Kong. Migration from China to Hong Kong then declined, averaging only 10,000 annually during the remainder of the 1960–1970 decade.[69]

After having numbered only about 2,500 in 1971 and 20,000 in 1972, the number of persons who were legally permitted to emigrate from China to Hong Kong suddenly rose to more than 50,000 in 1973, reportedly causing concern among Hong Kong authorities about the colony's ability to absorb such large numbers.[70] However, many of the migrants appear to have moved on to other countries, particularly Canada and the United States of America.

As discussed above under "Intercontinental migration", Hong Kong has not only received many immigrants, but has also sent large numbers of emigrants abroad, including persons born in Hong Kong and others originally from the mainland. Despite a large emigration, net immigration was nevertheless substantial. Official estimates of births, deaths and population for the decade 1961–1971 imply an annual net immigration of 11,800, or a rate of 3.2 per 1,000 population (see annex table 160).

Movements from China to Hong Kong, Macao and other destinations are estimated to have amounted to more than 2 million after 1949. These outward movements were compensated, however, by repatriations of Chinese from other Asian countries.[71]

Immigration of Chinese and Indians to work mainly in the rubber and tin industries was a major factor in the growth of population in former West Malaysia (now known as Peninsular Malaysia) and Singapore during the nineteenth century, and in the twentieth century—barring the depression years of the 1930s—up until the outbreak of the Second World War. In Singapore, it was only in the post-war period, after the death rate had declined substantially, that natural increase replaced migration as the principal factor in population growth. Legislation adopted in 1953 severely restricted immigration into Singapore except for that coming from Peninsular Malaysia.[72] For the intercensal period 1947–1957 it has been estimated that Singapore had a net immigration from Peninsular Malaysia of approximately 140,000, offsetting the net emigration of about 30,000 from Singapore to other countries, and thus leaving a net intake of about 110,000. As seen in annex table 160, net immigration was much reduced in the 1957–1970 intercensal period.

For Peninsular Malaysia, estimates derived from population census counts and statistics on natural increase indicate that there has been substantial net outward migration in the post-war period (see annex table 160). About half of the estimated 270,000 net migration loss during 1947–1957 is believed to have resulted from emigration to Singapore. The estimated net emigration of over half a million between 1957 and 1970 appears very high, and may be exaggerated by deficiencies in the census counts. While emigration of Chinese to Singapore continued during these years, the volume was not as great as in the previous intercensal period. Other significant outward movements during the more recent period included an exodus of Commonwealth armed forces, return migration to India and emigration of military personnel and others to Sabah and Sarawak.[73]

[68] Statistics relate to persons born in these States. See Israel, *Immigration to Israel, 1948–1972*, part II, *Composition by Period of Immigration*, Special Series No. 489 (Jerusalem, Central Bureau of Statistics, 1975), table 1.

[69] *Population of Hong Kong*, Economic and Social Commission for Asia and the Pacific Monograph Series, No. 1 (E/CN.11/1120) (Bangkok, 1974), pp. 13–14.

[70] *The New York Times*, 15 November 1973.

[71] Leo A. Orleans, *Every Fifth Child: the Population of China* (London, Eyre Methuen, 1972), p. 79.

[72] The source for most of the information and data concerning Singapore given here is *Report on the Census of Population 1970* (Singapore, 1973), pp. 31–35.

[73] Charles Hirschman, "Net external migration from Peninsular Malaysia, 1957 to 1970", *The Malayan Economic Review*, vol. XX, No. 2 (Singapore, 1975), pp. 38–54.

There was also an outflow of students and others to the more developed regions, though, based on the statistics of the countries of immigration, the total net volume probably did not exceed 30,000.

Immigration was an important factor in Sri Lanka's population growth in the late nineteenth and early twentieth centuries, when labourers came from South India to work on the plantations. Restrictions on this immigration, imposed first in the 1930s, were strengthened in 1948. As a result of negotiations between the Governments of Sri Lanka and India, formal agreement was reached in 1964 that over half a million of the total of nearly 1 million persons of Indian origin in Sri Lanka who had not been accepted as either Indian or Sri Lanka citizens were to be repatriated within 15 years.[74] If the estimates shown in annex table 160 are reasonably accurate, repatriations of persons of Indian origin (occurring both before and after the formal agreement) must have accounted for most of the net emigration suggested by the figures, since there is no evidence of very large movements to other continents of persons born in Sri Lanka.

In Burma also, there were repatriations among minority groups in the post-war period. After a new Government took office in 1962 banks and most wholesale and retail trade establishments were nationalized, as a result of which many Indian and Chinese businessmen were deprived of their means of livelihood.[75] Between 1962–1963 and 1966–1967 the number of registered Indians and Pakistanis 18 years of age and over declined from about 120,000 to less than 65,000.

Population growth in Indonesia is currently little affected by international migration. The largest foreign colony is the Chinese, numbering close to 1 million in 1969. Over 100,000 Chinese emigrated in 1960, many as a result of new legislation which prohibited the holding of dual Chinese and Indonesian nationality and prevented Chinese from operating businesses in rural areas.[76]

In Iran immigration has been insignificant, at least until recently. At the 1966 census, foreign-born persons amounted to only a small fraction (0.2 per cent) of Iran's total population. Recent rapid economic expansion, however, appears to be creating a need for foreign technicians and skilled workers. It was reported early in 1975 that the Government anticipated that some 700,000 jobs to be created could not be filled by the domestic labour force.[77] After the Second World War Iranian workers had been drawn to the Arab States on the south bank of the Persian Gulf, but with development taking place at home this movement is said to have declined.[78]

Refugee movements and population transfers

A number of politically motivated migrations have already been discussed above under "Migration in Western South Asia" and "Migration in other regions of Asia". Others are briefly summarized here. Some of the largest migrations of a refugee nature took place in the period immediately following the Second World War. As a result of the partitioning of the Indian subcontinent in 1947, more than 7 million Moslems left India for Pakistan and a similar number of Hindus fled Pakistan to settle in India between 1947 and 1951. These movements continued into the 1950s and well over a million refugees moved in each direction between 1951 and 1956. It has been estimated that altogether a minimum of 18 million persons left their homes as part of this exchange.[79] A repatriation of over 6 million Japanese military and civilian personnel from other Asian countries was mostly completed by 1950.[80]

The partition of Palestine in 1947 led to an exodus of some 700,000 Palestinian Arabs from the territory now constituting the State of Israel.[81] These refugees were for the most part not assimilated in the States to which they fled, but maintained a separate identity under the responsibility of UNRWA. Through natural increase they grew in number to reach 1,280,000 registered with UNRWA in 1965. After the June 1967 Middle East War there were large additional displacements of population, but most of the newly displaced persons did not fall in the category of international migrants. However, perhaps as many as 250,000 Arabs, among them a large number who were refugees already registered with UNRWA, fled from the Israeli-occupied West Bank of Jordan and Gaza to the East Bank. About 14,000 were repatriated in July and August 1967, and several thousands more later on, as a result of agreements worked out between the Governments involved and the United Nations.[82]

About 25,000 Jews emigrated to Europe or Israel from North African countries as a result of anti-Jewish demonstrations in their home countries in June 1967. Those going to Israel were part of the total of about 578,000 Jewish immigrants from Arab States received by Israel during the period 1948–1972 (see above, under "Migration in Western South Asia").

The partition of Korea in 1948 into two separate States (a northern and a southern one) with different political systems led to a large migration to the south, which increased as a result of the war that broke out

[74] *Keesing's Contemporary Archives*, 14–21 November 1964, p. 20405. The numbers mentioned included many who had been born in Sri Lanka of Indian parents. As seen in table 145 (see annex) the total foreign-born population of Sri Lanka in 1963 was only a quarter of a million.

[75] R. Butwell, "Ne Win's Burma: at the end of the first decade", *Asian Survey*, (12 October 1972), pp. 901 and 908.

[76] Demographic Institute of the University of Indonesia, *The Population of Indonesia*, CICRED Monograph Series, World Population Year 1974 (Jakarta, 1973), p. 19.

[77] *Teheran Journal* (16 January 1975), p. 1, as reported in United States of America, *Joint Publications Research Service*, No. 1309 (26 February 1975), pp. 69–70.

[78] Djamchid Benham and Mehdi Amani, *La population de l'Iran*, CICRED Monograph Series, World Population Year 1974 (Teheran, 1974), p. 14.

[79] *International Migration, 1945–1957* (Geneva, International Labour Office, 1959), p. 109.

[80] *Ibid.*, p. 121.

[81] *Ibid.*, p. 102.

[82] *Keesing's Contemporary Archives*, 16-23 August 1969, p. 23520; Don Peretz, *The Palestine Arab Refugee Problem* (Santa Monica, California, The Rand Corporation, 1969), p. 54.

between the States. It is estimated that, following the Second World War and up to the 1949 census, 1.8 million Koreans were repatriated to the Republic of Korea (most of them from Japan) and about 740,000 refugees came from the north. During the 1950–1953 war, refugees from the north outnumbered those in the other direction by about 360,000.[83]

A large-scale movement from north to south also developed in what was then known as Viet-Nam, for which only fragmentary statistical information is available. After the partition of that country and the signing of the Geneva Agreement, which brought an end to hostilities between France and the Government of Hanoi, some 820,000 refugees from the northern part of the country sought refuge in the south in the latter part of 1954 and early 1955, and altogether the figure may have exceeded 1 million.[84]

Other large refugee movements have taken place in recent years. In 1971, when war broke out between East and West Pakistan, nearly 10 million persons from what is now Bangladesh were said to have taken temporary refuge in neighbouring states of India; they were repatriated in the early months of 1972. Following the end of hostilities, there was an exchange of population between Bangladesh and Pakistan in 1973 and 1974; Bengalis were moved from Pakistan to Bangladesh and non-Bengalis from Bangladesh to Pakistan. Altogether, 241,300 persons were repatriated, the airlift organized for this purpose having been completed on 1 July 1974.[85]

No reliable estimates are available of the total magnitude of population transfers across international boundaries that have taken place as a result of the recent conflict in Indochina. The United Nations High Commissioner for Refugees reported that in 1970 approximately 200,000 persons from the former Republic of South Viet-Nam who had been living in Democratic Kampuchea (formerly Cambodia) returned to their homeland.[86] At the end of the war, in the spring of 1975, an estimated 237,000 displaced Indochinese left their country; the bulk were resettled in the United States of America, while others went to Australia, Canada, France and Malaysia.[87]

Smaller refugee movements have included the emigration of Tibetans to India in 1959 and 1960. The United Nations High Commissioner for Refugees reported 56,500 Tibetans in India and 8,000 in Nepal in 1971.

During 1974 and early 1975 about 200,000 Kurdish refugees fled from Iraq to Iran during the Kurdish war of rebellion in Iraq. About half are reported to have later returned in response to an offer of amnesty by the Iraqi government.[88]

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[83] Tai Hwan Kwon and others, *The Population of Korea*, CICRED Monograph Series, World Population Year 1974 (Seoul, Population and Development Studies Center, 1975), pp. 32–35.

[84] International Labour Office, *International Migration 1945–1957*, *op. cit.*, p. 129.

[85] *1975 Britannica Book of the Year*, p. 586.

[86] *1971 Britannica Book of the Year*, p. 633.

[87] *1976 Britannica Book of the Year*, p. 583.

[88] *Keesing's Contemporary Archives*, 18–24 August 1975, p. 27285.

Chapter V

POPULATION DISTRIBUTION AND URBANIZATION*

A. PRESENT STATUS OF URBANIZATION IN THE WORLD

Two revolutionizing circumstances characterize the world's population situation at the present time. First, over-all population growth has been greatly accelerated, especially since about 1950; such rapid growth is likely to continue for a number of decades though there are already good reasons to believe that it will eventually slow down. Secondly, ever since the last century, the percentages of urban population in total population have been rising in a progression that started in a few countries, then spread to some others, and by now has come to embrace the whole world; the eventual outcome of this revolution in human settlement patterns is not yet within sight. As a combined consequence of accelerated general growth, and rising urbanization levels, the urban population itself is now growing with exceptional speed. But it is possible that the process of urbanization also contributes to eventual declines in human procreativity and thereby hastens the time when population growth as a whole will occur at a decreasing tempo.

In both these respects—rapid general growth, and urbanization—a difference in timing must be noted between the currently more developed regions of the world and those that are still at the less developed stage. In the more developed regions, a high tide of accelerated population growth extended from the latter part of the last century to the middle of the present one, but it is now definitely receding; the more momentous eruption of even faster population growth in the less developed regions emerged almost suddenly at mid century and is still in full effect. Notable rises in the level of urbanization began almost two centuries ago in countries that at that time dominated world trade and were in the throes of the industrial revolution, but now the more developed countries are gradually approaching a saturation level in urbanization; rapid urbanization has seized one country after another in the less developed regions and it is now gathering immense force in all the countries that have hitherto remained less developed. Because of these differences in timing, the more developed and less developed regions differ sharply both in their current momentum of population growth and in the levels of urbanization attained so far.

In the present chapter, various estimates for 1975, or for the 1970–1975 period, will be discussed. It must be pointed out that most of these are in the nature of projections and extrapolations from data obtained generally up to about 1970. Only after the 1980 round of new censuses will it be possible to put estimates for 1975 on a firmer basis.

In 1975, as shown in table 27, a juncture is being reached at which the combined urban population of the more developed regions will be overtaken by the combined urban population of the less developed regions. The two estimated urban totals, 790 and 771 million, each represent nearly one fifth of the entire population of the world. In respect of the rural totals, however, the situation is vastly different. In the more developed regions, the rural population has shrunk to an estimated 342 million, fewer than one tenth of all the world's inhabitants, whereas in the less developed regions the rural total has climbed to 2,066 million, comprising more than one half the numbers of mankind.

TABLE 27. TOTAL, URBAN AND RURAL POPULATION OF THE WORLD, THE MORE DEVELOPED AND THE LESS DEVELOPED REGIONS, AS ESTIMATED FOR 1975

	Population (millions)		
	Total	*Urban*	*Rural*
World total	3 968	1 560	2 408
More developed regions	1 132	790	342
Less developed regions	2 836	771	2 066

The accuracy, or exact meaning, of such figures raises important questions. First of all, in almost every country different criteria are used to distinguish "urban" from "rural" localities.[1] The diversity of definitions partly reflects the fact that, under the greatly varying national conditions, what may appear as comparatively "urban" in one country can still appear to be rather "rural" from the viewpoint of another country. In each country a distinction is being aimed at which, under the given national circumstances, appears most relevant, though it need not be internationally comparable. Secondly, it is questionable whether the simple twofold distinction between "urban" and "rural" localities is significant enough, given the fact that the way of life in big cities sometimes differs more from that in small towns than the latter may differ from villages. In the third place, in heavily urbanized countries a further differentiation has been emerging, owing to an increased

*Prepared by the Population Division of the United Nations Secretariat.

[1] The criteria for distinguishing urban areas may be administrative (e.g., the distinction of areas under a municipal type of local government), ecological (e.g., the distinction of areas having at least a certain population size or density) or economic (e.g., areas with a predominantly non-agricultural labour force). This complex subject is further discussed in "Statistical definitions of urban population and their uses in applied demography," in *Demographic Yearbook, 1972* (United Nations publication, Sales No. E/F.73.XIII.1).

geographic dispersal of populations in regions under the more or less direct influence of urban centres, giving rise to a new type of environment that is no longer adequately covered by either of the two traditional concepts of "urban" and "rural." For these reasons, the comparability and sufficiency of international compilations of "urban" and "rural" population are no longer all that one might wish. Nevertheless, the conventional distinction of two principal types of environment, in which typical styles of living differ considerably, still serves many practical purposes.[2]

The dynamics of the present situation can be inferred from table 28, which shows absolute and relative gains in urban and rural population in the 1970–1975 period, and levels of urbanization attained, according to the latest available estimates.

TABLE 28. GROWTH OF URBAN AND RURAL POPULATION IN THE WORLD, THE MORE DEVELOPED AND THE LESS DEVELOPED REGIONS, 1970–1975, AND PERCENTAGE OF URBAN IN TOTAL POPULATION

	1970–1975 population gain (millions)		*1970–1975 annual growth rate (percentage)*		*Percentage of urban in total population*	
	Urban	*Rural*	*Urban*	*Rural*	*1970*	*1975*
World total	206	151	2.8	1.3	37.5	39.3
More developed regions	65	−18	1.7	−1.0	66.8	69.8
Less developed regions	141	169	4.0	1.7	24.9	27.2

In the more developed regions it will be seen that the continued growth in urban population is occurring in part at the expense of a net decrease in rural population; thus, during 1970–1975, urban places gained 65 million inhabitants, but since the total population of the more developed regions grew by only 48 million, this entailed an absolute decrease of 18 million in the rural population.

In the less developed regions, despite the much more rapid growth of the urban population, the amount of population gain in the rural areas was even larger. Thus, between 1970 and 1975, the urban population increased by 141 million, and the rural by 169 million.

As regards the annual percentage rates of gain, it is noteworthy that the rural population of the less developed regions is growing at a speed that is as high as that of the urban population of the more developed regions, 1.7 per cent in both instances. Urban population in the less developed regions, however, is increasing by 4.0 per cent a year, a rate which, if continued, would cause a doubling of the urban population every 17 years. On the other hand, in the more developed regions rural population is now declining at the rate of 1.0 per cent annually.

In 1970, as shown in table 28, the population of the more developed regions was already urbanized to the extent of 67 per cent, there being two urban residents for every rural resident. In the less developed regions, the urbanization level was 25 per cent, with three rural persons for every urban dweller. Both percentages rose in the 1970–1975 period, an increase of 3.0 points in the more developed regions, and 2.3 points in the less developed regions. The rise in the latter must be viewed, however, in the context of a large rural population that has not yet ceased to grow.

The present, or recent, situation, as just described, reflects only one brief phase in a process whose momentum has been so great that even the destruction wrought by the Second World War—the tragic losses in lives and the demolition of many urban centres—did not seriously interrupt the long-range trends. The war was followed by baby booms and by vigorous reconstruction, so that the general momentum of population growth and of urbanization was scarcely curbed. On the contrary, profound social changes, the gaining of nationhood by previously dependent people, continued technological progress, intensified international relations, and an increased diffusion of modern ideas through gains in literacy, the expansion of the mass communication media, and improvements in transport, all contributed to the increased speed with which the distribution of human settlements has been undergoing change. Observations over decades of the past[3] demonstrate that the momentum of urbanization has been so continuous that it is unlikely to be greatly altered within the next few decades. This makes it legitimate to consider that future trends are already partly inherent in the present situation. Table 29 summarizes trends covering the period from 1950 to the year 1975.

The continuation of recent urbanization trends into the future will have important implications for both the more developed and the less developed countries. Hitherto economic development in the less developed regions has been largely concentrated in the urban areas. If national economic growth occurs at rates that do not significantly exceed the rate of urban population growth, urban living conditions can only be slightly improved, with few if any resources remaining for the development of the rural economy. Agricultural productivity, however, will have to be raised at a considerable rate if the expanding city populations are to be provisioned with nationally grown food, rather than depending on food imports that adversely affect the balance of payments. There is obviously a need for economic growth at rates significantly in excess of the rates of growth of urban populations.

While the problems of accommodating increasing urban and rural populations are pressing ones, problems of population scarcity also arise in the rural areas of

[2] Different policy purposes can be served by defining cities within administrative limits, within the contours of dense settlement, or within the still wider contours of their direct influence, as discussed in the article cited in foot-note 1 above.

[3] *Growth of the World's Urban and Rural Population, 1920–2000*, Population Studies, No. 44 (United Nations publication, Sales No. E.69.XIII.3).

TABLE 29. URBAN AND RURAL POPULATION, ANNUAL RATES OF GROWTH, AND PERCENTAGE OF URBAN IN TOTAL POPULATION, THE WORLD, THE MORE DEVELOPED AND THE LESS DEVELOPED REGIONS, 1950–1975

	1950	1960	1970	1975
	Population (millions)			
Urban population				
World total	719	1 011	1 354	1 560
More developed regions	460	590	724	790
Less developed regions	259	421	630	771
Rural population				
World total	1 783	1 975	2 256	2 408
More developed regions	398	386	360	342
Less developed regions	1 385	1 589	1 896	2 066
	Percentage urban in total population			
World total	28.7	33.9	37.5	39.3
More developed regions	53.6	60.5	66.8	69.8
Less developed regions	15.8	21.0	24.9	27.2
	Average annual growth rates (percentage)			
		1950–1960	*1960–1970*	*1970–1975*
Urban population				
World total		3.4	2.9	2.8
More developed regions		2.5	2.1	1.7
Less developed regions		4.9	4.1	4.0
Rural population				
World total		1.0	1.3	1.3
More developed regions		–0.3	–0.7	–1.0
Less developed regions		1.4	1.8	1.7

Note: Because of rounding, figures do not always balance exactly.

some of the more developed countries. It is the young, the able-bodied and the better educated among the rural inhabitants who migrate to towns, leaving noticeable gaps in the agricultural and rural labour force. With this depletion in human resources, fewer economic and social functions can be maintained in the depopulated villages, motivating a further exodus, until some villages are virtually abandoned. There occurs also a regrouping of part of the population and various economic activities in the wider peripheries of large cities, bringing into being a new type of environment, neither fully "urban", nor entirely "rural", as already mentioned.

B. URBANIZATION IN DIFFERENT REGIONS OF THE WORLD

Conditions of urbanization are not uniform in either the more or in the less developed regions. This becomes evident when the analysis is brought to the level of selected world regions, as is done in table 30.[4] Among the more developed regions, the urbanization level (the percentage of urban in total population) in 1975 ranges from 61 to 86 per cent, and among the less developed regions from 19 to 58 per cent. With the exception of Latin America, the less developed regions are clearly less urbanized.

The highest levels of urbanization occur in three regions of former European overseas settlement, namely, in Northern America (77 per cent), Temperate South America (81 per cent) and Australia and New Zealand (86 per cent), and it can be said that in these regions urbanization will soon approach saturation levels. Europe is unevenly urbanized. The population is 77 per cent urban in Western Europe and 83 per cent in Northern Europe. Eastern Europe (56 per cent), Southern Europe (59 per cent), and the USSR (61 per cent) are not distinctly more urban than the less developed region of Latin America (58 per cent). (Data for component regions not shown in the text tables can be found in annex table 161.)

Among the less developed regions, Latin America (with 58 per cent urban population), already mentioned, and Northern Africa and Western South Asia (42 per cent) are outstandingly urbanized. In the other less developed regions only between one quarter and one fifth of the population resides in an urban area. The level of urbanization is remarkably low in the 28 least developed countries of the world—only 10 per cent.

The rise in the level of urbanization, as evidenced by the percentage increase from 1970 to 1975, bears some relationship to the level already attained. Other conditions being equal, greater increases may be expected in the middle levels of urbanization than at low levels, where urbanization is still at an early phase, or at high levels, where it approaches saturation. Rises of 3.5 or more percentage points occurred in the USSR, Latin America, and Northern Africa and Western South Asia, whereas in Australia and New Zealand, South Asia, East Asia and Africa the increases were 2.5 points or less.

As shown in table 31, the annual growth rate in urban population ranged from 1.4 to 2.3 per cent in the more developed regions, and from 3.4 to 6.4 per cent in the less developed regions. The lowest rates, 1.4 and 1.5 per cent, were those in Europe and Northern America, and the highest rates, 4.8 and 6.4 per cent, in the still little urbanized regions of Africa and the Pacific Islands. Of the more developed regions, the USSR and Japan had the fastest growing urban population (at 2.3 per cent

[4] In table 30 and subsequent tables, Northern Africa and Western South Asia, which are culturally similar and geographically contiguous, have been combined into a single region, since their levels of urbanization are similar, being distinctly higher than the rest of both Africa and Asia. This area includes the countries that are members of ECWA, whose urbanization trends are similar to those of the area as a whole.

TABLE 30. URBAN AND RURAL POPULATION, AND THE PERCENTAGE OF URBAN IN TOTAL POPULATION, REGIONS OF THE WORLD, 1970 AND 1975

	Urban population (millions)		*Rural population (millions)*		*Percentage of urban in total population*	
	1970	*1975*	*1970*	*1975*	*1970*	*1975*
More developed regions	724.2	789.6	359.8	342.0	66.8	69.8
Europe[a]	303.1	324.2	156.0	148.9	66.0	68.5
Northern America	167.9	181.3	58.5	55.6	74.2	76.5
USSR	137.7	154.8	105.0	100.2	56.7	60.7
Japan	74.4	83.6	29.9	27.5	71.4	75.2
Temperate South America	28.1	31.3	7.9	7.4	78.0	80.8
Australia and New Zealand	12.9	14.4	2.4	2.4	84.2	85.7
Less developed regions	630.0	770.7	1 896.3	2 065.5	24.9	27.2
South Asia[b]	199.8	244.9	824.9	916.7	19.5	21.1
East Asia[c]	189.5	224.4	633.0	670.9	23.0	25.1
Latin America[d]	132.5	164.2	114.4	121.1	53.7	57.6
Northern Africa and Western South Asia	61.5	77.6	100.6	108.7	37.9	41.7
Africa[e]	46.1	58.6	220.0	244.5	17.3	19.3
Pacific Islands[f]	0.6	0.9	3.3	3.6	15.8	19.2

Note: Because of rounding, figures do not always balance exactly.
[a] Excluding the USSR.
[b] Excluding Western South Asia.
[c] Excluding Japan.
[d] Excluding Temperate South America.
[e] Excluding Northern Africa.
[f] Melanesia, Micronesia and Polynesia.

per year) and of the less developed regions East Asia seems to have a comparatively slow rate of urban population growth (at 3.4 per cent).

The rural populations of all the more developed regions declined. In contrast, in all the less developed regions rural population increased, at rates ranging from 1.1 per cent per year (Latin America) to 2.1 per cent (South Asia and Africa).

The "force of urbanization" can be measured as the net difference between the urban and rural rates of growth. Interestingly enough, while each of the two growth rates differs very greatly between more developed regions and less developed regions, the differences between them are of a similar order of magnitude in both sets of regions. The urban-rural growth difference amounted to 3.9 per cent per year in Japan, 3.4 per cent in Temperate South America, 3.2 per cent in the remainder of Latin America, the Soviet Union and Northern Africa and Western South Asia, 2.7 in Africa, 2.5 in Northern America, 2.3 in Europe and in Australia and New Zealand, 2.2 in East Asia, and 2.0 in South Asia. Only in the Pacific Islands, where urbanization is mostly of quite recent origin, was there a big difference (4.8 per cent) between the urban and rural rates.

The several rates discussed apply to population bases of different sizes, and therefore they produce varying amounts of absolute increase in urban and rural population. As the comparison of figures in table 31 shows, for every rural inhabitant lost, about three urban inhabitants were gained in Europe, almost four in the USSR and Japan, almost five in Northern America, and about six in Temperate South America. By contrast, rural pop-

TABLE 31. AMOUNTS AND ANNUAL RATES OF GROWTH IN URBAN AND RURAL POPULATION, REGIONS OF THE WORLD, 1970–1975

Region	*1970–1975 population gain (millions)*		*1970–1975 annual growth rate (percentage)*	
	Urban	*Rural*	*Urban*	*Rural*
More developed regions	65.5	–17.8	1.7	–1.0
Europe[a]	21.2	–7.2	1.4	–0.9
Northern America	13.4	–2.9	1.5	–1.0
Soviet Union	17.1	–4.8	2.3	–0.9
Japan	9.1	–2.4	2.3	–1.6
Temperate South America	3.2	–0.5	2.1	–1.3
Australia and New Zealand	1.5	0.0	2.2	–0.1
Less developed regions	140.6	169.2	4.0	1.7
South Asia[b]	45.1	91.8	4.1	2.1
East Asia[c]	34.9	37.9	3.4	1.2
Latin America[d]	31.7	6.7	4.3	1.1
Northern Africa and Western South Asia	16.1	8.1	4.7	1.5
Africa[e]	12.5	24.5	4.8	2.1
Pacific Islands[f]	0.2	0.3	6.4	1.6

Note: Because of rounding, figures do not always balance exactly.
[a] Excluding the USSR.
[b] Excluding Western South Asia.
[c] Excluding Japan.
[d] Excluding Temperate South America.
[e] Excluding Northern Africa.
[f] Melanesia, Micronesia and Polynesia.

ulation increases were about twice as large as urban increases in South Asia and Africa, and about the same as urban increases in East Asia. In Northern Africa and Western South Asia, however, the rural areas gained only about half as much population as urban areas, and in Latin America only about one fifth. The comparative increases (or losses) in urban and rural population provide the basis for a first approximation of the comparative needs for infrastructure investments in urban and rural areas (not counting depreciation, obsolescence and the consequent need for renewal and repair) if an impoverishment of existing capital resources is to be prevented.

C. Urbanization in selected countries

At the beginning of the twentieth century almost one half of the world's urban population was to be found in Europe. Urbanization has continued to grow in Europe, and it is now spreading over the face of the earth. There are at present six countries that comprise among them one half of the world's urban population, namely Brazil, China, India, Japan, the USSR and the United States of America. It may be further noted that three countries alone, namely China, India and Indonesia, now comprise one half of the world's rural population.

In the following paragraphs, the levels and dynamics of urbanization in individual countries are briefly reviewed. Attention is confined to countries that by 1975 had at least 5 million inhabitants. (Data for these countries are shown in annex table 161.) Smaller units, not shown, include some city States (e.g., Hong Kong and Singapore) and countries where urbanization has barely begun (e.g., Papua New Guinea), so conditions among them can be quite diverse.

There are now 20 European countries with 5 million or more inhabitants. It should be noted that Europe is rather unevenly urbanized. Countries with at least 75 per cent urban population (Denmark, France, the Federal Republic of Germany, the Netherlands, Sweden and the United Kingdom) are all situated in Northern and Western Europe. Countries with less than 50 per cent urban population (Hungary, Romania, Portugal and Yugoslavia) are found in Southern and Eastern Europe. Rates of growth in urban population also vary, high rates prevailing where the level of urbanization is still comparatively low, and low rates where it is rather high. Urban populations are estimated to be growing at 2 or more per cent per year in Bulgaria, Poland, Romania and Yugoslavia, whereas they are growing at 1 per cent or less in Belgium, Denmark, the German Democratic Republic, the Federal Republic of Germany and the United Kingdom. In all European countries, the rural population is decreasing; the decrease is particularly rapid in Bulgaria, Denmark, France, the Federal Republic of Germany, Greece, Sweden and the United Kingdom it is only slight in Austria, the Netherlands, Portugal, Romania, Switzerland and Yugoslavia. Care must be exercised, however, in comparing these figures, because they are highly dependent on the definitions of "urban" population applicable in each case. In some countries, for instance in the United Kingdom, there occurs much peri-urban population growth in districts under a rural type of administration, which continue to be classified as "rural" for statistical purposes.

Regarding other more developed countries of 5 million or more inhabitants, urbanization levels surpass 75 per cent in all but the USSR, where the level exceeds 60 per cent. Among countries with at least 5 million inhabitants, Australia has the highest urbanization level, namely 86 per cent, but again note must be taken of variations in definition. Chile comes next, with 83 per cent, followed by Argentina (80 per cent), Canada (78 per cent) the United States of America (76 per cent) and Japan (75 per cent). In all these countries, except the United States, the urban population appears to be growing at rates of at least 2 per cent per year. In all of them rural population appears to be declining.

Vastly different conditions will be found among the 21 African countries with populations of more than 5 million. Only in Egypt, South Africa, Algeria and Tunisia does the urbanization level exceed 40 per cent, and in Morocco, Ghana and Zambia it exceeds 30 per cent at least. On the other hand, fewer than one tenth of the population is urban in Mozambique, Uganda, the United Republic of Tanzania, and the Upper Volta. In comparison with the rest of Africa, urban population is growing at a moderate rate in South Africa (3.6 per cent per year), Egypt (3.8 per cent), Zaire (3.9 per cent) and Tunisia (4.2 per cent). In all the other African countries considered here, the rate of growth in urban population is at least 4.5 per cent, and it is about 6 per cent or higher per year in Angola, Kenya, Mozambique, Uganda, and Zambia. If these high rates continue, the size of the urban population can double in about 12–15 years. In all African countries, the rural population is increasing, and it is growing at rates of 2 per cent or higher in Ethiopia, Madagascar, Mali, Mozambique, Nigeria, Southern Rhodesia, the Sudan, Uganda, the United Republic of Tanzania, the Upper Volta and Zaire. In Kenya, the rate even attains 3 per cent a year. This is happening despite an extremely rapid growth of urban population because population is growing at high over-all rates while the level of urbanization is still comparatively low.

In the 23 Asian countries with at least 5 million inhabitants, the level of urbanization again ranges from very low to moderately high. Urbanized Japan has already been considered separately. More than 40 per cent of the population is urban in the Democratic People's Republic of Korea, Iran, Iraq, the Republic of Korea, the Syrian Arab Republic and Turkey. In Malaysia and the Philippines urbanization exceeds 30 per cent. In contrast, urbanization still falls below 10 per cent in Bangladesh, Nepal and Yemen. Rates of growth in urban population are invariably high in Asia, though extremely fast growth occurs less frequently in Asia than it does in Africa. Comparatively moderate rates (less than 4 per cent per year) characterize China, India and Viet Nam. Rates higher than 6 per cent are suggested by the estimates for Saudi Arabia and Yemen. Among the countries considered, the rural population seems to be decreasing slightly in the Republic of

Korea, where the urban population, still growing rapidly, is already quite large. Elsewhere, the rural population is increasing by at least 1 per cent annually. Rates of rural population growth of 2 per cent or more appear in many countries, and the rate exceeds 2.5 per cent in the Philippines, Thailand and Democratic Kampuchea.

With respect to urbanization, Latin America differs decidedly from Africa and Asia, since on the whole urbanization levels in Latin American countries now cover a range similar to that found among countries of Europe, including the extremely high urbanization levels estimated in Argentina (80 per cent, already mentioned), Venezuela (78 per cent) and Chile (83 per cent). Guatemala (34 per cent urban) and Bolivia (37 per cent), the least urbanized of the larger countries in Latin America, are already considerably more urban than the majority of countries in Africa and Asia. Rates of growth in urban population fall below 3 per cent only in Argentina, Chile and Cuba; they exceed 4.5 per cent in Colombia, the Dominican Republic, Ecuador and Mexico. Despite considerable urbanization levels and the still rapid growth in urban populations, over-all population growth in Latin America is so fast that in several countries the rural population continues to grow rapidly (e.g., more than 2 per cent per year in Ecuador and Guatemala). Rural population is decreasing in the very highly urbanized countries of Argentina and Chile, and increasing at less than 1 per cent in Brazil, Colombia, Cuba and Venezuela.

In the foregoing discussion, the estimates for 80 countries with 5 million or more inhabitants have been considered. For all these countries combined, the median level of urbanization is about 43 per cent, and the median rate of urban population growth is 4.3 per cent.[5] As previously mentioned, urban population generally grows more rapidly where the urbanization level is still low, and less rapidly where it is already high. Of the 80 countries, 32 can be said to have above-median levels of urbanization and, at the same time, below-median rates of urban growth; those 32 include all the more developed countries (except Portugal and Yugoslavia) and some less developed countries, including three African countries (Egypt, South Africa, and Tunisia), one Asian country (the Syrian Arab Republic), and three Latin American countries (Cuba, Peru and Venezuela). At the other extreme, 31 countries have below-median levels of urbanization and above-median levels of urban growth; all these are African and Asian countries, with the exception of Ecuador. The present classification leaves eight countries in the group of below-median urbanization level and at the same time below-median rates of urban growth; it is noteworthy that China and India both fall into this category, as well as Bolivia, Guatemala, Portugal, Sri Lanka, Viet Nam and Yugoslavia. The other odd combination, namely, a high urbanization level with a high rate of growth in urban population, characterizes nine countries, namely, Algeria, Brazil, Iran, Iraq, Mexico, the Republic of Korea and Turkey.

[5] "Median" is understood to mean a level so selected that one half of the observations fall above it and one half below it.

The inverse association between level of urbanization and rate of urban population growth is not surprising. Less developed countries still have lower urbanization levels and their populations are increasing fast, whereas the opposite can generally be said of the more developed countries. Growth in urban population is largely a reflection of growth rates in total population. In fact, for the 80 countries here considered, the coefficient of correlation between urban and total population growth rates amounts to 0.87. On the whole, the rate of natural increase in the total population is the strongest determinant of the speed with which urban population is growing.

Other correlations have been calculated, with the following findings:

(*a*) Urbanization levels are more strongly correlated with the growth rates of the urban population than with the growth rates of the total population. Referring the urbanization levels of 1975 to the growth rates of 1970–1975, we find that if the urban growth rate is taken, the coefficient amounts to – 0.75, but if the total population growth rate is taken, the coefficient is only – 0.54.[6]

(*b*) The correlations are increased when urbanization levels of an earlier date are taken. Thus, in correlating the urbanization level of 1950 with the urban growth rate of 1970–1975, we obtain a coefficient of – 0.82; and if we correlate the level of 1950 with the growth rate of total population in 1970–1975, we obtain a coefficient of – 0.61.

The second finding seems to suggest that there can be a time-lag effect of which the earlier urbanization level can be a cause. To a certain extent, perhaps, with the passing of some time, urbanization advances the level of economic and social development, and progress in development, in its turn, tends to induce a decline in fertility and hence in population growth. If there is any substantial basis for the above-mentioned correlations, especially for the correlation with urbanization levels of an earlier date, the observations may also have some implications for the future. In the less developed countries urbanization, no doubt, will progress further, with the possibility of subsequent economic and social progress and the eventual curtailment of population growth. Unfortunately, the sample is too small and many of the data are too uncertain to permit drawing such a conclusion with much confidence.

D. Components of urban and rural population change

An elaborate calculation of the components of urban and rural population change for the period 1970–1975 still remains to be made.[7] In the meantime, a rough approximation may suffice. Previous study has shown that in most regions the rates of natural increase differ little

[6] Negative coefficients indicate that the correlation is inverse, namely, high levels of urbanization are associated with low growth rates, and low levels with high growth rates.

[7] In 1972, detailed calculations were made with reference to the year 1960 in "The components of urban and rural population change: tentative estimates for the world and 24 regions for 1960 (ESA/P/WP. 46). These were based in part on birth rates and death rates derived

in urban and rural areas;[8] probably, therefore, no large error is involved if it is assumed that both areas have the same rate of natural increase, which, again, equals the natural increase in the combined total population. Of course, this is only a rough assumption, and it cannot lead to very accurate estimates. On this basis it can now be roughly calculated by how much urban and rural populations might have grown during the period if there had been no net transfers of population between urban and rural areas. Actually, however, urban populations have grown more, and rural populations less, by an amount that results from net rural-to-urban migration and net rural-to-urban area reclassifications. But the reclassifications of areas from the rural to the urban category also largely reflect effects of migration;[9] therefore, nearly all of the rural-to-urban population transfer can be associated with net migration.

The results of these calculations, as they concern the urban population, are shown in table 32. It can be seen that the contributions to urban growth made by transfers (most of them migratory) are comparable in many regions with the contributions made by natural increase within the already existing urban populations. As a component of urban population growth, net transfers account for over 50 per cent in Europe, the USSR, East Asia, and the Pacific Islands, but less than 40 per cent in Temperate South America, the remainder of Latin America, and in Australia and New Zealand. In the Pacific Islands, transfers are responsible for two thirds of the urban growth, while in Australia and New Zealand they account for less than one fifth.

TABLE 32. COMPONENTS OF URBAN POPULATION GROWTH, REGIONS OF THE WORLD, 1970–1975

	Urban population (millions)		*Growth in urban population (millions)*			
	1970	*1975*	*Total growth*	*Natural increase*[a]	*Transfer from rural areas*	*Transfer as percentage of urban growth*
More developed regions	724.2	789.6	65.5	32.1	33.3	51
Europe[b]	303.1	324.2	21.2	9.2	11.9	56
Northern America	167.9	181.3	13.4	7.7	5.6	42
USSR	137.7	154.8	17.1	7.0	10.1	59
Japan	74.4	83.6	9.1	4.8	4.3	47
Temperate South America	28.1	31.3	3.2	2.1	1.1	34
Australia and New Zealand	12.94	14.43	1.49	1.24	0.25	17
Less developed regions	630.0	770.7	140.6	79.7	60.9	43
South Asia[c]	199.8	244.9	45.1	26.7	18.4	41
East Asia[d]	189.5	224.4	34.9	16.8	18.1	52
Latin America[e]	132.5	164.2	31.7	20.6	11.1	35
Northern Africa and Western South Asia	61.5	77.6	16.1	9.2	6.9	43
Africa[f]	46.1	58.6	12.5	6.4	6.1	49
Pacific Islands[g]	0.62	0.86	0.24	0.08	0.16	67

Note: Because of rounding, figures do not always balance exactly.

[a] The growth rate of the total population (urban plus rural) in each region was used here as an estimate of the rate of natural increase. This rate was applied in both urban and rural areas to obtain the absolute amount of natural increase in these areas. The total growth rates include, in addition to natural increase, a relatively small component (positive or negative) of international migration, which is significant only in Australia and New Zealand.

[b] Excluding the USSR.

[c] Excluding Western South Asia.

[d] Excluding Japan.

[e] Excluding Temperate South America.

[f] Excluding Northern Africa.

[g] Melanesia, Micronesia and Polynesia.

Results of the same type of calculations with respect to the rural population are shown in table 33. It seems that in the more developed regions, the rural population decreased by 18 million, despite a natural increase of 16 million, because 33 million individuals were transferred from rural to urban areas; the net transfers involved numbers more than twice as large as the natural increase. By contrast, in the less developed regions the rural population increased by 169 million, because natural increase amounted to 230 million, from which about 61 million were subtracted as a result of net rural-to-urban transfers; thus, only about 26 per cent of the natural increase was offset by transfers in this group of regions.

In all the more developed regions transfers were about twice as large as the rural natural increase, except in Australia and New Zealand, where the two components were about equal. Among less developed regions, the proportion of rural natural increase offset by transfers amounted to almost two thirds in Latin America, almost

separately for urban and rural areas from an analysis of the age compositions of the urban and rural populations. Various types of calculations are possible when data for place of birth and duration of residence of migrants are available. For example, A. Bose has provided estimates of the annual migration streams in India covering (*a*) rural to rural, (*b*) rural to urban, (*c*) urban to urban, and (*d*) urban to rural, for 1960–61 (see his "Migration streams in India," in *Contributed Papers, International Union for the Scientific Study of Population Sydney Conference, Australia, 21–25 August 1967*). J. Kumar used similar data to provide estimates of inter-state migration for the intercensal period, 1951–61 in "The patterns of internal migration in India during 1951–61," *Contributed Papers, op. cit.* In-migration and out-migration statistics in three great metropolitan areas in Japan during 1961–65 appear in T. Kuroda, "Recent trends and prospects of internal migration in Japan," *Contributed Papers, op. cit.*

[8] This was found to hold approximately true in many regions in the study cited in the preceding foot-note. Both the birth rate and the death rate tend to be lower in urban, as compared with rural areas, with partly compensating effects on the comparative rates of natural increase.

[9] Those areas are most likely to be reclassified from the rural to the urban category where there has been a marked increase in population size and density. The most likely major cause of marked local increases in size and density in such areas is, of course, migration.

TABLE 33. COMPONENTS OF RURAL POPULATION CHANGE, REGIONS OF THE WORLD, 1970–1975

	Rural population (millions)		*Change in rural populations (millions)*			*Transfer as percentage of rural natural increase*
	1970	*1975*	*Total change*	*Natural[a] increase*	*Transfer to urban*	
More developed regions	359.8	342.0	-17.8	15.5	-33.3	215
Europe[b]	156.0	148.9	-7.2	4.8	-11.9	248
Northern America	58.5	55.6	-2.9	2.7	- 5.6	207
USSR	105.0	100.2	-4.8	5.3	-10.1	191
Japan	29.9	27.5	-2.4	1.9	-4.3	226
Temperate South America	7.9	7.4	-0.5	0.6	-1.1	183
Australia and New Zealand	2.43	2.42	0.02	0.23	-0.25	109
Less developed regions	1 896.3	2 065.5	169.2	230.1	-60.9	26
South Asia[c]	824.9	916.7	91.8	110.2	-18.4	17
East Asia[d]	633.0	670.9	37.9	56.0	-18.1	32
Latin America[e]	114.4	121.1	6.7	17.8	-11.1	62
Northern Africa and Western South Asia	100.6	108.7	8.1	15.0	-6.9	46
Africa[f]	220.0	244.5	24.5	30.6	-6.1	20
Pacific Islands[g]	3.33	3.61	0.28	0.43	-0.16	37

Note: Because of rounding, figures do not always balance exactly.

[a] The growth rate of the total population (urban plus rural) in each region was used here as an estimate of the rate of natural increase. This rate was applied in both urban and rural areas to obtain the absolute amount of natural increase in these areas. The total growth rates include, in addition to natural increase, a relatively small component (positive or negative) of international migration, which is significant only in Australia and New Zealand.

[b] Excluding the USSR.
[c] Excluding Western South Asia.
[d] Excluding Japan.
[e] Excluding Temperate South America.
[f] Excluding Northern Africa.
[g] Melanesia, Micronesia and Polynesia.

one half in Northern Africa and Western South Asia, about one third in East Asia and the Pacific Islands, and only about one fifth in South Asia and Africa.

The amounts of transfer, of course, can have a varying impact, depending on their relationship to the size of the urban and rural population. As shown in table 34, in the more developed regions the urban areas had to absorb annual rural-to-urban transfers at rates varying from 0.4 per cent of the total urban population (Australia and New Zealand) to 1.3 per cent (the USSR). Among the less developed regions the urban absorption rate of migrants varied from 1.4 per cent (Latin America) to 2.2 per cent (Africa) and even more in the Pacific Islands, where significant urbanization did not begin until quite recently.

Rural areas, on the other hand, lost population through transfers at varying rates, the rates of the more developed regions being comparatively high; losses varied from 1.5 per cent annually in Europe to 2.9 per cent in Japan. In Latin America and Northern Africa and Western South Asia, the rural losses also were in excess of 1 per cent annually. In South Asia, East Asia, Africa and the Pacific Islands, however, only between 0.4 and 0.8 per cent were lost annually to the rural population as a result of net transfers to urban areas.

TABLE 34. COMPONENT RATES OF URBAN AND RURAL POPULATION CHANGE, REGIONS OF THE WORLD, 1970–1975
(Annual percentage rates)

	Urban rates			*Rural rates*		
	Growth rate	*Natural[a] increase*	*Transfer rate*	*Growth rate*	*Natural[a] increase*	*Transfer rate*
More developed regions	1.7	0.8	0.9	-1.0	0.8	-1.8
Europe[b]	1.4	0.6	0.8	-0.9	0.6	-1.5
Northern America	1.5	0.9	0.6	-1.0	0.9	-1.9
USSR	2.3	1.0	1.3	-0.9	1.0	-1.9
Japan	2.3	1.3	1.0	-1.6	1.3	-2.9
Temperate South America	2.1	1.4	0.7	-1.3	1.4	-2.7
Australia and New Zealand	2.18	1.82	0.36	-0.15	1.82	-1.97
Less developed regions	4.0	2.3	1.7	1.7	2.3	-0.6
South Asia[c]	4.1	2.5	1.6	2.1	2.5	-0.4
East Asia[d]	3.4	1.7	1.7	1.2	1.7	-0.5
Latin America[e]	4.3	2.9	1.4	1.1	2.9	-1.8
Northern Africa and Western South Asia	4.7	2.8	1.9	1.5	2.8	-1.3
Africa[f]	4.8	2.6	2.2	2.1	2.6	-0.5
Pacific Islands[g]	6.42	2.45	3.97	1.61	2.45	-0.84

Note: Because of rounding, figures do not always balance exactly.

[a] The growth rate of the total population (urban plus rural) in each region was used here as an estimate of the rate of natural increase. This rate was applied in both urban and rural areas to obtain the absolute amount of natural increase in these areas. The total growth rates include, in addition to natural increase, a relatively small component (positive or negative) of international migration, which is significant only in Australia and New Zealand.

[b] Excluding the USSR.
[c] Excluding Western South Asia.
[d] Excluding Japan.
[e] Excluding Temperate South America.
[f] Excluding Northern Africa.
[g] Melanesia, Micronesia and Polynesia.

E. Sex-age composition of the urban and rural population

Urban and rural populations often differ markedly from each other in their compositions by sex and age groups. Not only do the two population segments differ in each country, but the nature of that difference varies greatly among countries and regions of the world. Viewed as a social process, urbanization evidently occurs in quite diverse forms.

Comprehensive up-to-date calculations of urban and rural sex-age compositions for entire world regions have not yet been completed.[10] Table 35 partly illustrates the diversity in sex-age patterns of urbanization by presenting a few data from selected countries. Since children of either sex ordinarily stay with their parents, sex ratios contrast more significantly among the populations above the age of 15 years, and these are the ratios shown here.

Table 35. Males aged 15 years and over per 100 females aged 15 years and over in the urban and rural populations of selected countries (censuses around 1970), and urban/rural differences between these ratios

	Urban	*Rural*	*Difference*
Uganda (1969)	137.0	99.4	+37.6
India (1971)	122.9	104.6	+18.3
Indonesia (1971)	97.8	90.8	+7.0
Japan (1970)	95.4	90.0	+5.4
Yugoslavia (1971)	92.1	94.5	-2.4
United States of America (1970)	89.3	97.9	-8.6
Brazil (1970)	90.0	107.6	-17.6
Australia (1971)	96.5	120.6	-24.1

[a] Urban minus rural.

The differences appearing in table 35 must be attributed chiefly to the effects of rural-to-urban migration, which tends to select males rather than females in countries of Africa and Asia, but females rather than males in countries of European settlement and in Latin America. Among the examples shown, the urban population of Uganda has a very high ratio of males to females, and that of Australia is very low (in relation to its rural ratio), whereas in some countries, such as Japan or Yugoslavia, the ratios of males to females in the urban and rural sectors are more nearly equal.

As shown in table 36, urban populations have comparatively fewer children (ages 0–14) than rural populations, comparatively more young adults (ages 15–44) and often, though not always, comparatively few middle-aged and elderly persons. The urban/rural difference in the numbers of children largely reflects the fact that fertility is usually lower in urban as compared with rural areas. The relative preponderance of young adults in the urban areas is chiefly a consequence of migration, the great majority of rural-to-urban migrants being usually in the age range of 15–24, or 15–29 years. At the more advanced ages, the urban/rural difference is a complex result of urban/rural differences in fertility and mortality, and probably some net migration, into or out of urban areas, in the latter phases of life.

Table 36. Percentage composition of the urban and rural population by three broad age groups in selected countries (censuses around 1970), and urban/rural differences

	All ages	*0–14*	*15–44*	*45 and over*
Uganda (1969)				
Urban	100.0	37.8	53.8	8.4
Rural	100.0	46.9	38.4	14.7
Difference[a]	—	-9.1	+15.4	-6.3
India (1971)				
Urban	100.0	39.0	46.4	14.6
Rural	100.0	42.8	40.6	16.6
Difference[a]	—	-3.8	+5.8	-2.0
Indonesia (1971)				
Urban	100.0	42.0	45.9	12.1
Rural	100.0	44.6	41.8	13.6
Difference[a]	—	-2.6	+4.1	-1.5
Japan (1970)				
Urban	100.0	23.6	53.0	23.4
Rural	100.0	25.1	45.0	29.9
Difference[a]	—	-1.5	+8.0	-6.5
Yugoslavia (1971)				
Urban	100.0	24.4	52.2	23.4
Rural	100.0	28.5	44.2	27.3
Difference[a]	—	-4.1	+8.0	-3.9
United States of America (1970)				
Urban	100.0	27.8	41.8	30.4
Rural	100.0	30.5	38.9	30.6
Difference[a]	—	-2.7	+2.9	-0.2
Brazil (1970)				
Urban	100.0	38.7	45.0	16.3
Rural	100.0	45.7	40.5	13.8
Difference[a]	—	-7.0	+4.5	+2.5
Australia (1971)				
Urban	100.0	28.1	43.2	28.7
Rural	100.0	32.7	41.0	26.3
Difference[a]	—	-4.6	+2.2	+2.4

[a] Urban minus rural.

As compared with the rural population, the urban areas almost invariably have deficits in children (aged 0–14); the deficits are particularly large in Brazil and Uganda, but comparatively slight in Indonesia, Japan and the United States of America. The urban excess of young adults is most pronounced in Uganda and is also considerable in Japan and Yugoslavia, but rather moderate in Australia and the United States. Middle-aged and elderly adults (past the age of 45) are markedly fewer in urban compared with rural areas in Japan and Uganda, though in Australia and Brazil the urban population is more aged than the rural population. Productive capacity and economic and social needs (for employment, housing, recreation, schools, hospitals and so forth) can vary considerably as a function of the sex and age selective effects of rural-to-urban migration. For instance, it may be noted that among the countries shown in table 36, the proportion of young adults (aged 15–44) varies between 42 and 54 per cent in the urban population, and between 38 and 45 per cent in the rural population. The countries shown constitute only a small sample and different observations might have been made in some other countries.

The sex and age selection of migrants is only one aspect in the differentiation of populations that can result from the urbanization process. Migrants are also selected

[10] In March 1972, comprehensive calculations applicable to the year 1960 were presented in "Sex-age composition of the urban and rural population of the world, major areas, regions, and individual countries, in 1960" (ESA/P/WP.44).

by education, economic skills, previous work experience, and various pressing needs that sometimes compel their move from rural areas into towns. The depletion of rural areas of some of their most active elements, as well as the absorption by towns and cities of ill-prepared and ill-equipped needy migrants, can pose a variety of economic and social, if not also political, problems.

F. The growth of cities

With the expansion of urban population as a whole some individual cities are reaching hitherto unheard of proportions. For comparative purposes, cities are here regarded as "agglomerations", i.e., urbanized territory within the outer contours of dense settlement. Measured in these terms, five cities already exist with more than 10 million inhabitants each, namely, London, Mexico City, New York, Shanghai and Tokyo; soon more agglomerations will be attaining and surpassing this colossal magnitude. An estimate of numbers of agglomerations with more than 100,000 inhabitants by successive size-class categories is shown in table 37.

Altogether, there are now nearly 2,000 cities with at least 100,000 inhabitants, of which nearly 1,000 are in the more developed regions and nearly 1,000 in the less developed regions. Of these cities, 91 in the more developed regions and 90 in the less developed regions have more than 1 million inhabitants. In both groups of regions, the numbers of cities in each category are now almost the same. As already noted, the two groups of regions have about the same totals of combined urban population, and their composition by size groups is similar.

The population totals of cities in given size categories in the more developed and less developed regions are also similar, as can be seen from table 38. In each of the two groups of regions the urban population, about three quarters of a billion, is almost equally divided among cities with more than 1 million inhabitants, cities with between 100,000 and 1 million inhabitants, and towns with a population of less than 100,000.

The proportions of urban population contained in each of these three broad size groups, however, vary among individual regions, as is also shown in table 38. "Million-cities" (cities with 1 million or more inhabitants) contain roughly a third or more of the urban population in Northern America, Japan, Temperate South America, Australia and New Zealand, East Asia, Latin America, and Northern Africa and Western South Asia. By contrast, in the USSR and Africa only about 15 per cent of the urban population is found in million-cities. In the 28 least developed countries the comparable percentage is only 10 per cent. Cities of intermediate size, with between 100,000 and one million inhabitants, are most conspicuous in the urban populations of the USSR and Africa, but contain comparatively small shares in the urban populations of Japan, Temperate South America, Latin America and Northern America. Rather large proportions of the urban population reside in the smaller cities of less than 100,000 in the USSR, Japan, South Asia, and Latin America, where more than 40 per cent of the urban population is found in such places, whereas in Northern America and in Australia and New Zealand the small-city population is comparatively less. Almost 60 per cent of the urban population of the 28 least developed countries is located in cities of less than 100,000 inhabitants.

Not only do the million-cities have a large share of the urban population but they have actually come to constitute a considerable proportion of the total population of various regions. As estimated for 1975, 36 per cent of the total population of Temperate South America and Northern America resides in million-cities, and the percentages are as high as 34 in Australia and New Zealand, 29 in Japan, and between 20 and 21 in Europe and in Latin America (other than Temperate South America). In Northern Africa and Western South Asia, million-cities comprise 13 per cent of the total population and in the USSR 10 per cent, followed by East Asia (8 per cent), South Asia (6 per cent), and sub-Saharan Africa (3 per cent).

Table 37. Number of agglomerations of different size categories, regions of the world, 1975

	Agglomerations in specified size categories						
	Total 100 000 and over	*5 000 000 and over*	*2 000 000–5 000 000*	*1 000 000–2 000 000*	*500 000–1 000 000*	*200 000–500 000*	*100 000–200 000*
More developed regions	983	11	24	56	111	326	455
Europe[a]	406	4	11	23	45	137	186
Northern America	194	3	8	19	29	63	72
USSR	249	1	1	10	28	87	122
Japan	92	2	1	3	1	29	56
Temperate South America	27	1	1	1	4	7	13
Australia and New Zealand	15	0	2	0	4	3	6
Less developed regions	986	10	31	49	110	332	454
South Asia[b]	291	3	12	10	38	83	145
East Asia[c]	301	3	9	19	31	108	131
Latin America[d]	175	3	5	10	18	49	90
Northern Africa and Western South Asia	110	1	3	6	9	48	43
Africa[e]	107	0	2	4	14	44	43
Pacific Islands[f]	2	0	0	0	0	0	2

[a] Excluding the USSR.
[b] Excluding Western South Asia.
[c] Excluding Japan.
[d] Excluding Temperate South America.
[e] Excluding Northern Africa.
[f] Melanesia, Micronesia and Polynesia.

TABLE 38. URBAN POPULATION IN AGGLOMERATIONS OF THREE SIZE CATEGORIES, AND PERCENTAGE OF URBAN POPULATION IN EACH SIZE CATEGORY, REGIONS OF THE WORLD, 1975

	Urban population by size (millions)				*Percentage of urban population by size*			
	All sizes	*1 000 000 or more*	*100 000 to 1 000 000*	*Less than 100 000*	*All sizes*	*1 000 000 or more*	*100 000 to 1 000 000*	*Less than 100 000*
More developed regions	789.6	262.2	240.9	286.5	100.0	33.2	30.5	36.3
Europe[a]	324.2	99.1	98.1	127.0	100.0	30.6	30.3	39.2
Northern America	181.3	86.0	49.9	45.4	100.0	47.4	27.5	25.0
USSR	154.8	25.3	64.9	64.6	100.0	16.3	41.9	41.7
Japan	83.6	32.3	16.4	34.9	100.0	38.6	19.6	41.8
Temperate South America	31.3	14.0	6.9	10.4	100.0	44.7	22.0	33.2
Australia and New Zealand	14.4	5.7	4.8	3.9	100.0	39.6	33.3	27.1
Less developed regions	770.7	243.6	236.5	290.6	100.0	31.6	30.7	37.7
South Asia[b]	244.9	73.3	69.6	102.0	100.0	29.9	28.4	41.6
East Asia[c]	224.4	78.7	70.7	75.0	100.0	35.1	31.5	33.4
Latin America[d]	164.2	58.2	39.5	66.5	100.0	35.4	24.1	40.5
Northern Africa and Western South Asia	77.6	24.3	27.1	26.2	100.0	31.3	34.9	33.8
Africa[e]	58.6	9.2	29.4	20.0	100.0	15.7	50.2	34.1
Pacific Islands[f]	0.9	0.0	0.2	0.7	100.0	0.0	28.5	71.5

Note: Because of rounding, figures do not always balance exactly.
[a] Excluding the USSR.
[b] Excluding Western South Asia.
[c] Excluding Japan.
[d] Excluding Temperate South America.
[e] Excluding Northern Africa.
[f] Melanesia, Micronesia and Polynesia.

The present moment of near parity, in numbers and sizes of cities, between the more and less developed regions is a passing one. In preceding decades, the less developed regions had far fewer cities of great size, and in the coming decades they will, no doubt, surpass the more developed regions in this respect. Relevant estimates, referring only to cities exceeding 1 million inhabitants, will be found in table 39. In 1950, for instance, with 25 such cities, Europe had one third of all the world's million-cities. Although million-cities are still multiplying in Europe, their numbers will soon be equalled by South Asia and East Asia. Even in Africa, million-cities may become quite numerous in the near future, though in 1950 (Northern Africa excepted) there was still no such city in Africa. While million-cities are increasing rapidly in many of the less developed areas, the number of such cities in the 28 least developed countries is still insignificant (only 2 in 1975).

The number of people living in million-cities is growing very rapidly, as a result of the expansion in size of existing million-cities as well as the attainment by other cities of the "million-city" status, as suggested in table 40. In 1970–1975 alone, over 25 million individuals have been added to the million-city population in the more developed regions, and more than 60 million in the less developed regions. In the latter regions, this

TABLE 39. NUMBER OF MILLION-CITIES, REGIONS OF THE WORLD, 1950–1975

	1950	*1960*	*1970*	*1975*
More developed regions	48	64	85	91
Europe[a]	25	31	37	38
Northern America	14	18	28	30
USSR	2	5	10	12
Japan	3	5	5	6
Temperate South America	2	3	3	3
Australia and New Zealand	2	2	2	2
Less developed regions	23	46	72	90
South Asia[b]	9	15	22	25
East Asia[c]	9	19	26	31
Latin America[d]	4	8	14	18
Northern Africa and Western South Asia	1	3	6	10
Africa[e]	0	1	4	6
Pacific Islands[f]	0	0	0	0

[a] Excluding the USSR.
[b] Excluding Western South Asia.
[c] Excluding Japan.
[d] Excluding Temperate South America.
[e] Excluding Northern Africa.
[f] Melanesia, Micronesia and Polynesia.

TABLE 40. POPULATION OF MILLION-CITIES, REGIONS OF THE WORLD, 1950–1975
(Millions)

	1950	*1960*	*1970*	*1975*
More developed regions	129.4	181.0	235.8	262.2
Europe[a]	60.9	78.3	92.6	99.1
Northern America	40.6	55.7	77.5	86.0
USSR	7.5	13.0	21.1	25.3
Japan	11.6	20.4	27.2	32.3
Temperate South America	5.8	9.7	12.4	14.0
Australia and New Zealand	3.0	3.9	5.0	5.7
Less developed regions	47.4	101.6	182.8	243.6
South Asia[b]	16.4	31.2	56.0	73.3
East Asia[c]	19.3	41.6	63.6	78.7
Latin America[d]	9.3	21.0	42.2	58.2
Northern Africa and Western South Asia	2.4	6.7	15.6	24.3
Africa[e]	0.0	1.1	5.4	9.2
Pacific Islands[f]	0.0	0.0	0.0	0.0

Note: Because of rounding, figures do not always balance exactly.
[a] Excluding the USSR.
[b] Excluding Western South Asia.
[c] Excluding Japan.
[d] Excluding Temperate South America.
[e] Excluding Northern Africa.
[f] Melanesia, Micronesia and Polynesia.

means an increase of one third over the 1970 figure within a mere five years.

Caution should be exercised in the use of such estimates. Detailed figures depend on the accuracy of interpolations and projections, which is uncertain to say the least, and on variations in definition that deprive them of strict comparability. But despite these qualifications, it is undeniable that cities are now growing rapidly, especially in the less developed regions, and that many of them will achieve sizes that until recently had hardly ever been envisaged.

Chapter VI

POPULATION STRUCTURE

At any given moment, the age structure of a population is the consequence of past levels and trends in fertility, mortality and migration. In most situations the birth rate is the primary determinant of a population's unique age distribution. Past levels and changes in mortality are of secondary importance, and unless there have been extraordinary movements of people, migration may have an imperceptible or barely perceptible effect on the age composition of a population. In contrast to the age composition, past patterns of mortality and migration may be primary determinants of the distribution of a population between the two sexes. This is likely to be the case when migration is both heavy and highly selective for one sex or the other, or when the death rates of males and females differ significantly.

As past experience in fertility, mortality and migration give a population its characteristic age structure, that structure affects both the current and future frequency of births, deaths and migration. The important effects on the death rate have been discussed elsewhere in this report, where it was noted that, all other things being equal, the crude death rate for a youthful population will be lower than for one which has a large proportion of elderly people. Generally, migration affects mainly the young adult age groups, and when, for whatever reasons, the proportion is large, the presence of large numbers of young adults can boost the birth rate. Although large annual variations are common, average vital rates for five-year periods seldom change abruptly. This creates an effect that is called "demographic inertia". In the case of past experience as well as future expectations, several decades of declining and low birth rates have to elapse in a youthful population hitherto characterized by high levels of fertility before the age structure of the population is profoundly altered. If, as has been the case in some of the less developed countries, declining birth rates are accompanied by declining or low death rates, the length of time it takes for the proportion of older people to increase, and for the growth rate to decline, will be extended.

The age and sex structure of populations, and the changes in them, also affect social and economic capacities and needs, and help to explain some developmental problems. For example, the internal dynamics of the labour force depends heavily upon the number of available young men and women from whom it is ultimately recruited. This is also the group of the population in which households and families are ordinarily formed. In the rapidly growing youthful populations of the less developed regions, expanded educational services are needed and development planning must take into account the need to generate employment opportunities for the growing labour force. In such populations, much of the product of labour must be invested in the support and training of dependent children and may tend initially to retard economic and industrial development. In the slower growing countries of the more developed regions, where population aging has become manifest, there are growing social and economic needs of the dependent or non-productive older population and a relative shrinkage of the labour force. This situation may have the effect of increasing wages and the emphasis on capital-intensive production, whereas the situation in the less developed regions tends to hold wages down and to inhibit the adequate utilization of available labour.

A. The sex composition of populations*

A somewhat larger number of boys are born than girls and during the early years of life the number of boys in a population exceeds the number of girls by a small margin. However, since males die off more rapidly than females, an age is eventually reached after which the number of women in each age group exceeds the number of men. Very often the net result is that for all ages combined there are almost equal numbers of males and females in a population. Thus, as estimated for mid year 1975, the world population consisted of 1,999 million males and 1,989 females. The corresponding figures for the more developed and less developed regions show a surplus of females in the former and a surplus of males in the latter. In 1975 there were 548 million males and 585 million females in the more developed regions, and the sex ratio (number of males for every 100 females) for all ages was 94. By contrast, there were approximately 1,451 million males and 1,404 million females in the less developed regions and the sex ratio was 103. The sex ratios for major geographic divisions ranged from, perhaps, 105 in South Asia, 103 in East Asia and Oceania, and 100 in Latin America to 99 in Africa, 96 in Northern America, 95 in Europe and 87 in the USSR. In the last two, the low sex ratios continue to reflect the excessive loss of male lives during the Second World War.

The estimated patterns of sex ratios by age in 1975, for the world, the more developed regions and the less developed regions, are shown in table 41. In the more developed regions the excess of males was replaced by an excess of females at about 35 years of age, but in the less developed regions the change did not occur until nearly 65 years. The sex ratio dropped rapidly after the

* Prepared by the Population Division of the United Nations Secretariat.

TABLE 41. SEX RATIOS FOR AGE GROUPS, THE WORLD, THE MORE DEVELOPED AND THE LESS DEVELOPED REGIONS, 1975

Age group (years)	Sex ratio (males per 100 females)		
	World	More developed regions	Less developed regions
All ages	100	94	103
0- 4	104	105	104
5- 9	104	104	104
10-14	104	104	104
15-19	104	104	104
20-24	103	103	103
25-29	103	102	104
30-34	103	100	104
35-39	102	99	104
40-44	102	99	104
45-49	100	93	104
50-54	96	83	105
55-59	94	81	102
60-64	88	76	100
65-69	84	73	95
70-74	77	66	90
75-79	69	58	85
80 and over	58	49	79

age of 50 in the more developed regions. The ratios for the upper years, which included the surviving members of generations whose menfolk had been decimated in the two world wars, were abnormally low. The sex ratios for the less developed regions did not decline as rapidly with advancing age. However, the figures for the less developed regions are not entirely trustworthy because of errors in age reporting and the probable omission of some women at the time of the census counts upon which the estimates are based. On the whole, it appears that throughout a wide range of ages the mortality of women is no less than that of men and it may be that at certain ages the death rates for women exceed those for men. Such patterns were discussed in chapter III, on mortality, and some speculation was offered there to explain the apparently excessive female mortality.

The sex ratios for a number of the countries that in 1970 had a population of at least 250,000 people either exceeded 105 or fell short of 95. Those that exceeded 105 in 1975 were all less developed countries. In a few countries the heavy immigration of men has contributed to high sex ratios. These include Libya, Equatorial Guinea and Kuwait, which had sex ratios of 108, 109 and 121, respectively. In another group of countries the high sex ratio may be attributable to excessive female mortality. This group includes Bangladesh, Pakistan, India and Papua New Guinea, which had sex ratios of 106, 107, 108 and 109, respectively.

In contrast with the countries that had sex ratios exceeding 105, the countries with sex ratios of less than 95 in 1975 consisted of both more developed and less developed areas. Comparatively low sex ratios at birth appear to be a characteristic of many populations of African origin, and this affects the sex ratio for all ages. Thus, we find estimated ratios of 94 for the populations of the Congo and Mozambique, 95 for those of Rwanda, Swaziland, the United Republic of Cameroon and the Central African Empire, 92 for Chad and 91 for the population of Gabon. Emigration may have contributed to the low sex ratios for a second group of countries. These include Haiti, Barbados, the Cape Verde Islands and Botswana (which had estimated sex ratios of 94, 91, 89 and 86, respectively) among the less developed countries, and Finland, Malta and Portugal (which had estimated sex ratios of 94, 91 and 89, respectively) among the more developed countries. There is also a group of more developed countries which suffered large numbers of war casualties and at least partly as a result have low sex ratios. This group includes the Federal Republic of Germany, Austria, the German Democratic Republic and the USSR, which had estimated sex ratios of 92, 90, 87 and 87, respectively, in 1975.

B. THE AGE COMPOSITION OF POPULATIONS*

Median age

A simple summary measure of the youthfulness or agedness of a population is the median age. One half of a population is younger than the median age and the other half is older; consequently, as a population ages the median age increases. Thus, the estimated median age of the more developed regions increased from 28 to 30 years between 1950 and 1975, while that of the less developed regions declined slightly, from about 21 to 20 years. Table 42 summarizes by major world areas the distribution of estimated median ages in 1975 for the 149 countries that had a population of 250,000 or more in 1970.

* Prepared by the Population Division of the United Nations Secretariat.

TABLE 42. DISTRIBUTION OF COUNTRIES WITH AT LEAST 250,000 INHABITANTS, BY MAJOR AREA AND MEDIAN AGE OF THE POPULATION, 1975

	Total number of countries	Median age in years					
		Under 17.0	17.0-19.9	20.0-24.9	25.0-29.9	30.0-34.9	35.0 or above
World total	149	25	76	12	15	18	3
Africa	50	9	37	3	1	..	..
Latin America	29	10	13	4	2	..	..
Northern America	2	..	..	..	2	..	..
East Asia	6	..	2	3	..	1	..
South Asia	30	6	21	2	1	..	..
Europe	27	..	1	..	6	17	3
Oceania	4	..	2	..	2	..	..
USSR	1	..	..	..	1	..	..

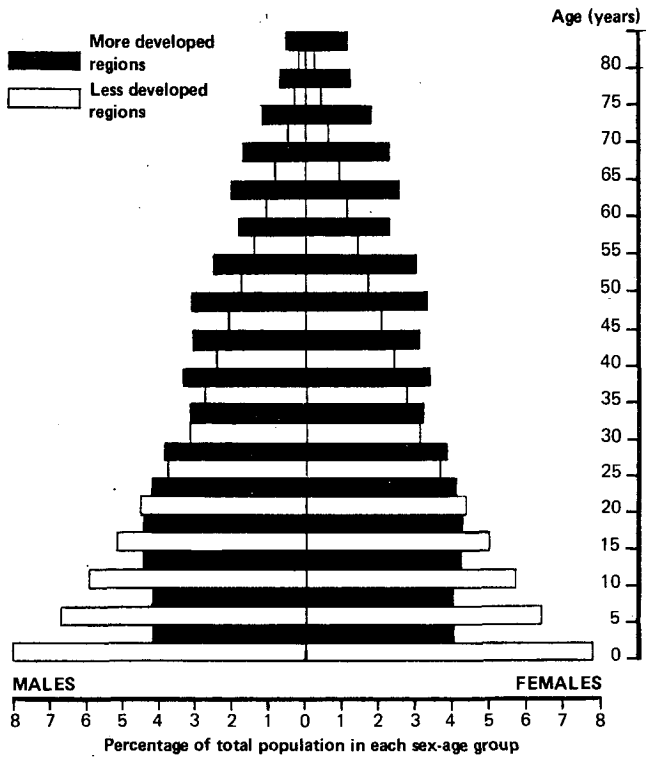
There was much variation in the median ages represented in table 42, but those for the less developed were almost uniformly lower than the ones for the more developed countries. The median age for Japan and a majority of the European countries was between 30 and 35 years in 1975. Three of the latter had slightly higher median ages: the German Democratic Republic (35.3 years), the Federal Republic of Germany (35.5 years) and Luxembourg (36.0 years). Albania's median age of 19.2 years was exceptional not only among the nations of Europe but also among all the more developed countries. All the other more developed countries, except Chile (where it was 21.9 years), had a median age that was between 25 and 30 years. In contrast, all but two of the less developed countries had an estimated median age that was younger than the 1975 world average of 22.4 years. These were Hong Kong and Equatorial Guinea which had a median age of 23.2 and 23.3 years, respectively. At the other extreme, the lowest estimated median age was 15.1 years for Suriname, followed by Algeria's median age of 16.0 years.

Variations in the age composition of populations

Owing to radically different population trends, particularly with respect to birth rates, the age structure of the more developed regions differs markedly from that of the less developed regions. The differing structures, as estimated for 1975, are illustrated in figure IV. The age diagram for the more developed regions is shaped rather like a beehive because of the comparatively few children and relatively large numbers of elderly people resulting from lower fertility rates than those prevailing in the less developed regions. The age structure of the less developed regions still forms a pyramid that is almost evenly divided between males and females. The structure of the more developed regions, on the other hand, is lopsided because of the disproportionate numbers of women who have survived into the advanced ages.

In 1975 the more developed regions contained only about 28 per cent of the total world population, but because of differences in age composition, the percentage of the world population by age varied markedly from

Figure IV. Percentage composition by sex-age groups of the population of the world's more developed and less developed regions, 1975.



one age group to another in each of the more developed and less developed regions. For example, the more developed regions contained only about 17 per cent of the world's small children under the age of five years, 21 per cent of the school-age children (ages 5–14) and 26 per cent of the world's youth between the ages of 15 and 24. The same regions accounted for roughly 31 per cent of all young adults (ages 25–44), 39 per cent of the world's middle-aged people (ages 45–64) and over half (52 per cent) of all the elderly people who were 65 years of age and older. Approximately two thirds of all women 80 years of age and older were to be found in the more developed regions.

The variations in age structure among the populations of eight major world areas is illustrated in table 43 and in figure V. In figure V the areas have been ar-

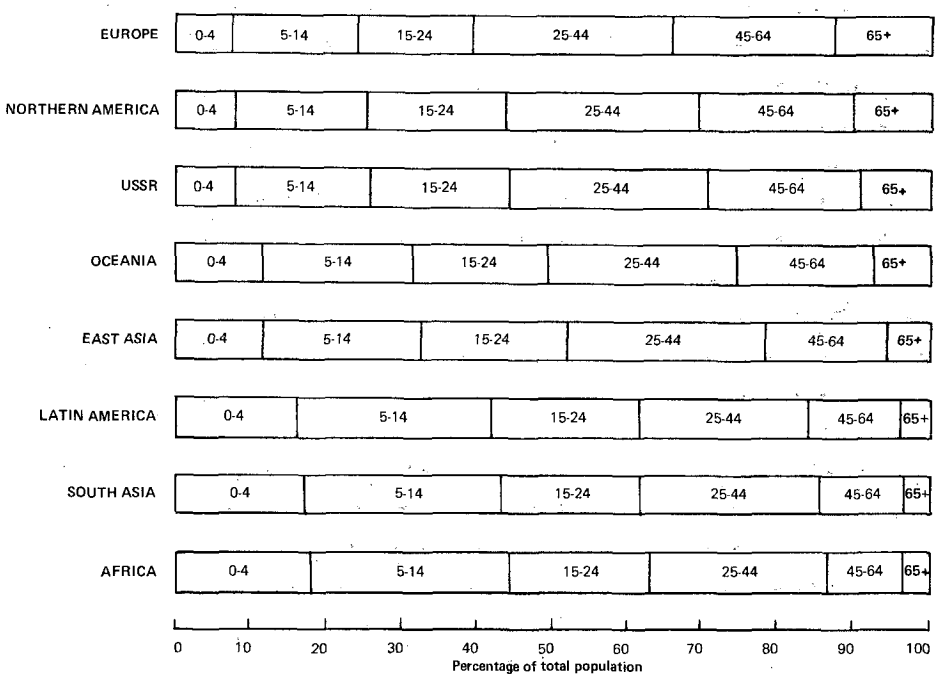
TABLE 43. PERCENTAGE DISTRIBUTION BY AGE OF THE WORLD POPULATION AND THE POPULATIONS OF MAJOR AREAS OF THE WORLD, 1975

	Age group in years						
	All ages	*0–14*	*5–14*	*15–24*	*25–44*	*45–64*	*65 and over*
World total	100	13	23	18	25	15	6
More developed regions	100	8	17	17	27	21	10
Less developed regions	100	16	25	19	24	13	4
Africa	100	18	26	19	23	11	3
Latin America	100	16	26	19	23	12	4
Northern America	100	8	18	19	25	20	10
East Asia	100	12	21	19	26	16	6
South Asia	100	17	26	19	23	12	3
Europe	100	8	16	16	27	21	12
Oceania	100	12	20	18	25	18	7
USSR	100	8	17	19	27	20	9

Note: Because of rounding, the sum of the percentages does not always equal 100

ranged according to the percentage of population under the age of five years, beginning with Europe, which had the smallest estimated percentage in 1975, and ending with Africa, which had the largest. It will be noted that the percentage of school-age children (ages 5–14) rises with the percentage under five, whereas the percentages of middle-aged adults (ages 45–64) and elderly (ages 65 and over) diminish. The variations among the major regions in the percentages in the central age groups of 15–24 and 25–44 years inclusive are comparatively small and do not change in a manner consistent with the arrangement of major areas in figure V.

Figure V. Percentage composition by broad age groups of the population of eight major areas of the world, 1975



The variations in age composition just discussed reflect the fact that the number of people in each age group has been increasing at a different rate. Table 44 gives the rates of growth for the period 1970–1975, for the same world areas and age groups as used above, as estimated on the basis of information available in 1973. For the world as a whole, the age groups 15–24 years and 65 years and older were growing most rapidly. In the first instance a high growth rate in the age group 15–24 implies a rapidly growing labour force and heavy demands for new jobs. In the second instance, as the three-generation family gradually disappears, the need for special social services increases even more rapidly than the population aged 65 years and older.

High growth rates of between 2 and 3 per cent per annum characterized all age groups in the less developed regions between 1970 and 1975, whereas in the more developed regions the rates embraced a range of more than 3 per cent. The pre-school population (ages 0–4 years) in the more developed regions seems to have all but ceased to grow and the school-age population (ages 5–14) has decreased as a result of the decline in the birth rate during the 1960s. The population in the labour force age groups (ages 15–64) has continued to

TABLE 44. AVERAGE ANNUAL PERCENTAGE RATES OF GROWTH, BY AGE, THE WORLD AND MAJOR AREAS OF THE WORLD, 1970–1975

	Age group in years						
	All ages	*0–4*	*5–14*	*15–24*	*25–44*	*45–64*	*65 and older*
World total	1.9	1.8	1.4	2.5	1.7	2.0	2.6
More developed regions	0.9	0.2	-0.7	1.3	0.8	1.4	2.6
Less developed regions	2.3	2.2	2.1	2.9	2.1	2.4	2.7
Africa	2.8	3.0	2.5	2.9	2.3	2.7	2.5
Latin America	2.7	2.3	2.4	3.5	2.6	2.8	3.3
Northern America	0.9	-0.3	-1.7	2.0	2.1	0.8	1.9
East Asia	1.7	1.3	0.9	1.5	2.1	1.9	2.8
South Asia	2.5	2.3	2.5	3.5	1.8	2.8	2.7
Europe	0.6	-0.9	0.1	0.7	0.7	0.5	2.2
Oceania	2.0	2.5	1.0	2.3	2.4	1.7	2.3
USSR	1.0	1.0	-2.1	3.1	-0.6	3.1	4.0

increase at moderate rates but the elderly population (ages 65 and older) has grown rapidly at an average rate of 2.6 per cent per annum. The latter almost equalled the growth rate of the same age group in the less developed regions. This age group and the other most rapidly growing age group in the less developed regions were the ones singled out in the preceding paragraph. In general, it may be said that labour force pressures and the special problems of the aged should be considered to be global concerns rather than the exclusive or primary concern of either the more developed or the less developed regions. The figures in table 44 for the eight major areas of the world reinforce this conclusion while highlighting the diversity that exists in the growth rates of age groups and total populations.

The regional and area levels and trends in the components of growth that produced the present diversity have been discussed in the preceding chapters. Past trends in the growth rates of broad age groups are presented in table 45. The birth rates of the more developed regions have fluctuated more in the past than have those of the less developed regions and as a consequence the growth rates for the age groups presented have been more variable in the former. This is particularly true of the youngest age groups. In the case of preschool children (under 5 years of age) growth has declined by about one third since 1950–1955 in the less developed regions but it remains high, whereas in the more developed regions it has shifted from moderately high increase to moderate decrease to slow growth. A similar pattern of net changes seems to hold for the school-age population (ages 5–14). The changes in this age group are especially important for educational planning, just as changes in the youth population (ages 15–24) are critical to labour force planning. In the more developed countries the growth of the age group 15–24 years has subsided in recent years and presumably labour force pressures have peaked. In the less developed countries, however, the sustained high growth of the youth population in recent years promises to maintain the need for new employment opportunities for some time into the future. Similarly, while the age group 65 years and older has grown rapidly since 1950–1955 in the more developed regions, projections for the next decade indicate that the rate has either begun or is about to drop off swiftly. In contrast, the rate of growth for the elderly age group in the less developed regions has accelerated in recent years and will probably continue to increase slowly in the foreseeable future.

Dependency

An important aspect of age structures is the relative distribution of a population between the economically active and dependent ages. A commonly used measure for this distribution is the dependency ratio, which expresses the hypothetical number of dependent people who need to be supported by every 1,000 people in the economically active age groups. The ratio is calculated by dividing the number of people defined as economically active (people aged 15–64) into the number of people defined as dependent (people under 15 years of age and 65 years or older) and multiplying the result by 1,000. For the whole world the dependency ratio is estimated to have increased from 679 in 1950 to a high of 735 in 1965. By 1975 it had dropped back to about 715. In that year the dependency ratio for the more developed regions stood at 550, which was about what it had been in 1950, while the ratio for the less developed regions has been on the average about 50 per cent larger (it was 792 in 1975 as opposed to 755 in 1950). Like the dependency ratio for the whole world, the ratios for both the more developed and less developed regions increased gradually from 1950 into the 1960s and have since declined. The primary reason for the recent and anticipated declines in the dependency ratios is a reduction in the proportion of child dependants that is not entirely balanced by the rise in old-age dependency.

Among the 149 countries that have a population of at least 250,000, there were five in 1975 that had dependency ratios below 500 and seven that had ratios above 1,000. When the ratio is below 500, there are more than two people in the active age groups for every person defined as a dependant, whereas when the ratio is above 1,000 there is more than one dependent person for every person in the age group 15–64 years. The five countries with dependency ratios below 500 are all from the more developed regions. They are Bulgaria, Poland, Hungary, Finland and Japan, which in 1975 had ratios estimated to be 497, 494, 489, 485 and 478, respectively. The seven countries with dependency ratios greater than 1,000 are all from the less developed regions. They

TABLE 45. ANNUAL PERCENTAGE RATE OF GROWTH IN THE POPULATION OF SELECTED AGE GROUPS, MORE DEVELOPED AND LESS DEVELOPED REGIONS, 1950–1975

	Age group in years					
	0–4	*5–14*	*15–24*	*25–44*	*45–64*	*65 and over*
More developed regions						
1950–1955	1.3	1.2	0.3	1.1	2.0	2.6
1955–1960	0.8	2.6	-0.1	0.8	1.8	2.2
1960–1965	0.0	1.1	1.4	1.8	0.5	2.4
1965–1970	-1.3	0.5	2.5	0.2	1.2	2.4
1970–1975	0.2	-0.7	1.3	0.8	1.4	2.6
Less developed regions						
1950–1955	3.0	1.9	1.6	1.9	1.6	0.0
1955–1960	2.1	3.0	1.5	2.1	2.0	1.0
1960–1965	2.2	2.8	2.1	2.0	2.1	1.9
1965–1970	1.8	2.3	3.1	1.9	2.4	2.5
1970–1975	2.2	2.1	2.9	2.1	2.4	2.7

are Botswana (with a ratio of 1,015), the Dominican Republic (1,023), Morocco (1,028), Nicaragua (1,031), Algeria (1,046), Jamaica (1,079) and Surinam (1,146). The lowest rates resulted from a decided decline in fertility, which has reduced the proportion of child dependants but has not lasted long enough for the proportion of elderly in the population to rise much. The highest rates, on the other hand, have resulted from a combination of high fertility and declining or low infant and childhood mortality. The extremely high dependency ratios produced by the survival of unusually large proportions of children should prove to be temporary, as should the extremely low ratios.

Pressure on the labour market

Although it is not used very often, another significant measure that can be derived from the age composition of a population is the percentage of people aged 15–24 years in the 15–64-year age group. The relative size of the youth component in the economically active population provides a rough gauge of pressures likely to be placed on the labour market by young people seeking employment for the first time. When the percentage of the active population in the age group 15–24 years is high, the pressures exerted on the labour market by this age group are very great. At such times young people may have difficulty finding employment and older persons holding jobs may lose them more easily. In short, when the percentage of the active population in the age group 15–24 years is large, it could be a time of high unemployment and job insecurity.

Estimated percentages of the active population in the age group 15–24 years are presented in table 46 for eight major areas of the world at five-year intervals from 1950 to 1975. The proportion for Europe fluctuated between 23 and 25 per cent, whereas the proportions for Latin America, South Asia and Africa fluctuated between 33 and 36 per cent, and that for East Asia varied from 29 to 32 per cent. In the three remaining areas the fluctuation was sharper. In Northern America the proportion of youth in the 15–64-year age group rose by almost 8 percentage points between 1955 and 1975. During the same period, the proportion in Oceania rose by over 6 percentage points. The proportion of youth in the USSR, on the other hand, dropped by more than 10 percentage points between 1950 and 1965, then in the next decade increased by over 6 percentage points. It will be noted that in Northern America and Oceania and, to a lesser extent, in Europe, the low proportions of youth occurred at a time of economic prosperity, when birth rates were comparatively high, while the current high proportions have appeared at a time of economic difficulties and considerable unemployment, when birth rates are comparatively low.

TABLE 46. PERSONS AGED 15–24 YEARS AS A PERCENTAGE OF PERSONS AGED 15–64 YEARS, EIGHT MAJOR AREAS OF THE WORLD, 1950–1975

	Europe	*Northern America*	*USSR*	*Oceania*	*East Asia*	*Latin America*	*South Asia*	*Africa*
1950	25	23	32	25	30	34	36	35
1955	24	22	30	24	30	33	35	35
1960	23	23	26	25	29	33	34	35
1965	23	26	22	28	30	34	33	35
1970	24	29	26	29	32	35	34	35
1975	25	29	29	29	31	36	35	36

C. THE POPULATION 65 YEARS OF AGE AND OLDER*

Trends and differentials in the aging of populations

As indicated in section B above, on age composition, population aging is a consequence of declining fertility. So far it is a phenomenon restricted primarily to the more developed countries and, as a result, disproportionately larger numbers of older people are found in those countries than in the less developed countries. As measured by the number of people 65 years of age and older, the world's "elderly" or "aged" population increased from approximately 137 million in 1950 to an estimated 227 million in 1975. However, since this increase occurred at about the same rate as the average for the world total, the proportion of the world population in the age group 65 years and above has barely changed. It only increased from 5.5 per cent of the total in 1950 to 5.7 per cent in 1975.

The stability in the proportion of elderly people in the world population has resulted from countervailing trends. One is the trend towards aging in the populations of the more developed countries, which account for only about 28 per cent of the world total. The other trend arises from the combination of high fertility and declining mortality, which has maintained or increased the youthfulness of the populations in the less developed countries. Thus, the proportion of people 65 years of age and older in the more developed regions increased from 7.5 per cent in 1950 to 10.5 per cent in 1975, while the percentage in the less developed regions remained nearly stationary at about 3.8 per cent. While remaining a constant proportion of the total population of the less developed regions, the age group 65 years and older grew at an accelerating pace between 1950 and 1975—the rate was almost zero at the beginning and exceeded 2.7 per cent per annum at the end of the period—but in the more developed regions the proportion increased while the age group grew at a relatively steady pace of from 2.4 to 2.6 per cent. The number of people aged 65 years and over increased from 65 mil-

* Prepared by the Population Division of the United Nations Secretariat.

lion to 119 million in the more developed regions and from about 72 million to 108 million in the less developed regions. Consequently, in 1975, more than half of all the elderly people in the world were to be found in the more developed regions.

Estimates of the percentage of the population in the elderly age group are presented in table 47 for eight major regions of the world. These estimates indicate the large variations in percentage among the areas of the world and the differences in trends. In the period from 1950 to 1975, the proportion of older people began to increase first in the population of Europe and it now accounts for the largest percentage in that area. The growth in the proportion of elderly in the populations of Northern America and the Soviet Union followed the growth in Europe. In Oceania the proportion has remained essentially constant, but in both Africa and South Asia it has decreased. As a result, the spread between the highest and lowest proportions of elderly people in the populations of major areas has increased from about 5.5 per cent in 1950 to almost 10 per cent in 1975. In 1975 the percentage of elderly people in Europe's population was over four times the estimated percentage in the population of Africa.

TABLE 47. PERCENTAGE OF THE TOTAL POPULATION OF MAJOR AREAS IN THE AGE GROUP 65 YEARS AND OVER, 1950–1975

	1950	*1960*	*1970*	*1975*
World total	5.5	5.3	5.5	5.7
Africa	3.2	2.7	2.9	2.9
Latin America	3.5	3.4	3.7	3.8
Northern America	8.1	9.1	9.7	10.2
East Asia	5.3	5.0	5.4	6.1
South Asia	4.1	3.4	3.0	3.0
Europe	8.7	9.7	11.4	12.3
Oceania	7.4	7.4	7.3	7.4
USSR	6.1	6.8	7.8	9.1

Within the elderly age groups the number of women almost invariably exceeds the number of men. Women 65 years of age and older made up approximately 6.5 per cent of the world's female population in 1975, whereas elderly men made up only 4.9 per cent of the male population. The respective percentages of older persons in the more developed regions were 12.4 and 8.5, and in the less developed regions 4.1 and 3.6. During recent years the ratio of women to men has held nearly constant at about 111 to 112 women per 100 men in the less developed regions while in the more developed regions it has increased from 147 in 1960 to an estimated 156 in 1975. The ratio of women to men is not only much higher in the more developed regions; it also increases with age within regions and countries, and in the more developed regions as many as two thirds of the population 80 years of age and older is composed of women. In addition, the more developed regions account for about two thirds of all women aged 80 years and older.

The most recent data currently available for an analysis of urban/rural trends and differentials in the age group 65 years and older are centred around 1960. These data, summarized in table 48, provide some insights into the effects of migration on age composition. For the world as a whole there were, in 1960, about a third more elderly people in the urban than in the rural population (6.0 per cent as opposed to 4.5 per cent). However, this is a mathematical curiosity, reflecting the fact that in 1960 most of the world's urban population lived in the more developed regions, where the elderly constitute a relatively large proportion of the total population.

In both the more developed and the less developed regions, the proportion of elderly was higher for both sexes combined in the rural than in the urban areas.

TABLE 48. PERCENTAGES OF THE TOTAL POPULATION IN THE AGE GROUP 65 YEARS AND OLDER, BY URBAN OR RURAL RESIDENCE, SEX AND MAJOR AREAS OF THE WORLD, 1960

	Percentage of the urban population			*Percentage of the rural population*		
	Both sexes	*Male*	*Female*	*Both sexes*	*Male*	*Female*
World total	6.0	2.4	3.6	4.5	2.0	5.0
More developed regions	8.3	3.2	5.1	8.7	3.7	5.0
Less developed regions	2.9	1.3	1.6	3.4	1.6	1.8
Africa	2.4	1.1	1.3	3.0	1.4	1.6
Latin America	4.0	1.8	2.2	3.1	1.6	1.5
Northern America	8.9	3.8	5.1	9.3	4.7	4.6
East Asia	3.1	1.3	1.8	4.2	1.9	2.3
South Asia	2.6	1.3	1.4	3.0	1.5	1.5
Europe	9.8	3.8	6.0	9.5	4.1	5.4
Oceania	8.9	3.7	5.2	4.5	2.4	2.1
USSR	5.4	1.6	3.8	8.1	2.7	5.4

Source: "Sex-age composition of the urban and rural population of the world, major areas, regions and individual countries, in 1960" (ESA/P/WP.44).

The same was true in each of the major areas except for Latin America, Europe and Oceania. The margin in Europe is small and may be an effect of the intensity and long duration of European urbanization, urban/rural differentials in fertility and mortality, recent countermovements away from urban areas, and the definitions of urban and rural areas used in Europe. The higher proportion of elderly persons in the urban populations of Latin America and Oceania is something of a mystery, since both are areas of active urbanization and urbanization is usually a selective process, which draws migrants primarily from among young adults. In addition, it will be noted from table 48 that elderly women outnumber elderly men in the urban population of each major area and in the rural population of half of the areas. In South Asia there are approximately the same numbers of elderly men and women in the rural population. The number of elderly men exceeds the number

of elderly women in rural Latin America, rural Northern America and rural Oceania. These differences cannot be adequately explained until they have been studied more thoroughly.

Striking differences between the more developed and less developed regions emerge if the elderly are considered as dependants. In this case a special dependency ratio is calculated by dividing the population in the economically active age groups (15–64 years) into the population aged 65 years and older, and by multiplying the result by 1,000. This dependency ratio is very high, and increasing, in the more developed regions. It was 134 in 1960 and 163 in 1975. In the less developed countries, where there is a high dependency ratio for children in the age category 0–14 years, the ratio of aged people to the active population has remained constant. It was about 68 both in 1950 and in 1975.

Economic and social implications of the aging of populations

The fact that more people in both the more developed and the less developed countries are reaching the age of 65 years and, having reached that age, live longer than in former times has a host of economic and social implications, for example for dependency and labour force participation; old age security, retirement programmes and opportunities; mental and physical health needs and patterns of utilization of health services; food, housing and recreation requirements; the elderly as they relate to the changing structure and role of the family; and the status of the aged and attitudes toward them. In addition, there are important social and political implications with respect to generational differences, seniority norms and the potential for gerontocracy. There are differing economic and social consequences for different categories of the aged population. The consequences depend, for example, on an individual's sex and whether he or she lives in a more developed or a less developed country. For a self-sufficient person of 70 years or older who enjoys good health and actively pursues an avocation, chronological "old age" is somehow irrelevant, just as it is for most poor people in the less developed countries who never attain that "old" age.

The aging of a population has a profound effect on the work force and the economy of a society. In more developed countries where the elderly rely less on their families and more on social security systems and old-age pension funds, the increasing number of aged dependants poses an increasing financial burden on the labour force and the Government. Thus, financial provision for the elderly is becoming more and more the responsibility of society at large. This is reflected in the rapid increase in the *per capita* cost of social security and old-age pension systems in many countries.

Paradoxically, the aged are among the most impoverished groups in countries of the more affluent regions of the world. This is particularly true of older women, who lack sufficient assets to carry them securely through advanced old age. With increased longevity, one of the most critical policy issues is that of assuring the elderly of an adequate income. In the more developed countries, where extensive old-age pensions and social security systems have been developed, there has been some alleviation of this problem. In addition, many older persons in such countries have attempted, through private savings or the development of capital assets, to provide for their old age during their working years. However, world-wide inflation has increasingly placed the elderly of such countries in an economically disadvantageous position. In the less developed countries, where poverty may be generally shared by all in the population, including the elderly, the opportunities for older persons to set aside resources or to participate in pension and social security schemes are very limited.

The elderly are also faced with problems of retirement. Compulsory retirement at a predetermined age is an increasingly important factor in removing older workers from the labour force. This practice raises many questions with respect to the subsequent adjustment of the people thus retired. Higher dependency ratios are one consequence of the growing proportions of older people entering the retirement ages and living longer. Those people in need of support from the "active" age groups necessarily increase the burden on the labour force, while the loss of work and retirement usually imply a reduction of income, at times to the subsistence level or below. The aging of the population, therefore, also affects the consumption patterns of a society.

As was the case in earlier times the world over, most people in less developed countries live in an economic system which is dependent upon the family and there is always a place for an older person within the extended family, whether an aunt, an uncle or a grandparent. However, the gradual disappearance of the extended family and the breakdown of the family as a unit of production have caused many changes which have affected older people, particularly in the more developed countries. The progressive aging of their populations will also become a concern for Governments of the less developed regions when it becomes necessary for them to assume some of the traditional functions of the family, through social insurance and assistance programmes, old-age and invalid pensions, dependants' pensions, unemployment allowances and so on.

Modern societies often place impediments in the way of a smooth adjustment to the final years of life, even when the physical environment is relatively favourable. Strongly competitive societies, in which inactivity is somewhat suspect, leisure is highly commercialized and expensive and an individual's worth tends to be measured in terms of productive work and achievement, do not usually afford congenial environments in which to grow old. Thus, there is evidence that the loss of a role in life occasioned by retirement, and the social isolation of the elderly, especially in highly industrialized societies, have a negative impact. Apparently, the progressive loss of resources also tends to arouse feelings of helplessness. These feelings, in turn, serve to create anxieties that the aged person may find it difficult or impossible to over-

come. Stress resulting from drastic changes such as the sudden loss of income, the death of a spouse, or relocations and dislocations of various sorts, may well create physical, emotional and behavioural disorders in elderly people. Needless to say, some of these disorders could probably be prevented by social practices and policies that would make the social environment more congenial to older persons. At present, however, many older people in some western countries are being hospitalized for mental disorders not necessarily because they are seriously ill mentally but because there is a critical lack of services, facilities and other resources to assist the aged with the numerous problems to which they must continually adapt and adjust.

A major area of social concern to the elderly relates to their health needs. A number of chronic diseases, disabilities stemming from accidents, cardio-vascular and renal diseases, and neoplasms are associated with aging. There is evidence that the high levels of disability and mortality, particularly among adult males 65 years of age and older, can be reduced through periodic, multiphasic social and health screening programmes. In addition, there is a high incidence of preventable malnutrition and dehydration among the elderly. Although increased attention has been given to these health problems, additional provision must be made for periodic dietary and nutritional counselling related to changing bodily functions and needs. Governments should also provide for regular health check-ups for the early detection of treatable disease through community health measures. In the less developed countries, public health and medical care services, which are now geared to the needs of the younger age groups, should progressively integrate such measures for the elderly into their programmes.

Aged people also need housing with special features at a price they can afford and in settings that meet their needs. Such living arrangements for the elderly have been established recently in many more developed countries. These include age-segregated "retirement" villages and specialized housing—usually low-income public housing or low-income, non-profit community care facilities. Among the less developed countries the need for some of these things is only beginning to manifest itself.

The broad range of congregate and shelter-care programmes for older persons should include day-care programmes and specialized housing designed to support their social, psychological and physiological needs; homes for the aged that provide an essential array of social and health care, including rehabilitative services; institutions to provide long-term care and treatment and services on an in-patient basis; substitute families with which older people can live under the supervision of either a voluntary or governmental agency; temporary emergency in-patient shelter to afford older persons care and protection at times of crisis and yet assure their return to previous living arrangements; and temporary vacation care to relieve the family of the care of older family members. It is impossible to describe adequately the full range of existing facilities and services for the care of the aged owing to the wide variation in national and community patterns and services. However, it is important to note that a number of countries have begun to see the need to plan for a wide range of alternatives in housing and living arrangements in concert with social, health and recreational services, so that they can respond to the unique requirements of aging individuals within their populations.

Among the most important factors that weigh upon aging individuals and give rise to frustration and emotional problems is the loss of earning power through forced retirement, illness or the reluctance of employers to hire older persons. Since the older generations usually have less formal education than the young, and there are generally no training programmes for "second careers" at older ages, their ability to participate in the development process is substantially reduced. But in any event, a loss in earning power implies a loss of status as a bread-winner in the family, and for a man it may mean becoming dependent upon his wife. All of these are especially important considerations because the definition of "older" in some highly industrialized and competitive societies has been lowered to the point that an individual over 40 years of age begins to consider his or her age an economic handicap.

In conclusion it may be noted that in recent decades many societies have been experiencing an aging of their population structure. This process had been largely confined to the more developed regions, but it is also beginning to emerge as a factor to be reckoned with in the less developed regions, where aging is expected to continue at an increasing pace. This presents a challenge for Governments, which will have to establish economic and social policies that fully integrate the elderly into modern society and protect their rights and welfare.

At present, the majority of existing social policies relating to aging are based upon chronological age and fail to deal with the individual characteristics and requirements of older persons. In the more developed and the less developed countries there are prescribed ages for retirement and entitlement to social security and pension benefits. It is worth repeating that the age span expressed in such terms as "the aged", "the elderly" or people in the "advanced ages", generally includes all people who are 60 or 65 years of age and older. It is important to separate chronological age from the inherent functional and social capacities of older persons and to distinguish between the various age groupings which together comprise the broad category of "the aged"

Although much progress has been made during the past 20 years in research on the biological, psychological and social aspects of aging, these areas of investigation are still in their infancy. The complex methodological problems of carrying out research on the span of life, the cost involved and the lack of trained manpower in gerontology are obstacles to the development of the needed scientific knowledge. In addition, there has been a lag in the application of existing knowledge to social policies and programmes for elderly persons.

D. Labour force*

The growth of the labour force, shifts in its sex and age structure and the evolution of its share of the total population are affected by both demographic trends and economic and related changes. In the period 1950 to 1975, changing patterns of labour force participation and, more specifically, declining activity rates in many sex-age groups played an important part in the development of the labour force. Demographic trends, in the form of changes in the rates of reproduction of the population and changes in its sex-age composition, in some ways reinforced and in others counteracted the effects of changing participation rates.

The following review of the major characteristics of labour force trends in the period 1950 to 1975 is based on international standard bench-mark estimates prepared by the International Labour Office. The estimates are derived mainly from national data on labour force participation rates obtained from national population censuses or household sample surveys in the years between 1950 and 1975. Where possible, national data have been adjusted to achieve conformity with the standard concept of labour force[1] and uniform coverage and scope. If no data or only partial data on the labour force were available for a country the values were estimated on the basis of suitable models.[2] The data were further adjusted to the standard reference dates. The resulting estimates are fully integrated and co-ordinated with bench-mark estimates prepared by the United Nations. Estimates for each region or major area, the more and less developed regions and the world were obtained by aggregating the independent estimates for the component countries and territories. In the same manner estimates for broad age groups (under 25, 25–54, 55 and over) were obtained by combining the estimates for more detailed age groups, consisting of seven age groups starting from age 10 (10–14, 15–19, 20–24, 25–44, 45–54, 55–64 and 65 years and over).

While every attempt has been made to ensure the uniformity and comparability of data, it must be recognized that the national processes of collecting data vary in scope, coverage and efficiency, particularly as concerns statistics on economic activity of females, children and youth, retired persons and certain categories of the unemployed. These variations should be borne in mind when small variations or differences are concerned. Nevertheless, the data presented in all probability convey a reasonably correct view of labour force levels and trends.

* Prepared by the International Labour Office in collaboration with the Population Division of the United Nations Secretariat.

[1] The concept of labour force is defined to comprise all employed and unemployed persons (including those seeking work for the first time). It covers employers, persons working on their own account, salaried employees, wage earners, unpaid family workers, members of producers co-operatives and members of the armed forces.

[2] For more details, see International Labour Office, *Labour Force Projections, 1965–1985*, 1st ed. part VI, *Methodological Supplement*, appendix II (Geneva, 1973), pp. 101–140.

Global trends

Total labour force

A high and increasing rate of population growth between 1950 and 1975 was accompanied by an accelerated growth of the labour force. However, a more rapid growth of the total compared with the working population, due to decreases in participation rates and changes in the age composition, caused a substantial reduction in the crude activity rate over the period. The world's labour force, estimated at 1,100 million persons in 1950, increased by almost 50 per cent, or more than 545 million, during the 25-year period, to reach a figure of about 1,646 million in 1975 (see annex table 162). During the same period, however, the total population increased more than 58 per cent (see annex table 163). As a result, the crude activity rate (the percentage of a total population in the labour force) dropped from 43.9 per cent in 1950 to 41.4 per cent in 1975, a relative decline of 5.7 per cent.

Although there were some fluctuations in the growth of the different categories of young, adult and older workers, the net increases in the size of the labour force were numerically larger for each succeeding decade or period. Between 1950 and 1960 the world's labour force grew by 197 million persons, in the 1960s it increased by 211 million and in the most recent five-year period the increase was 137 million persons. On the average the world's labour force grew by annual increments of almost 20 million persons from 1950 to 1960, 21 million between 1960 and 1970, and about 27 million between 1970 and 1975. The average annual growth rate for the 25-year period was 1.6 per cent, but the rates within the period did not exhibit a consistent trend. The average annual rate for the decade 1950–1960 was 1.7 per cent. It then declined to 1.5 per cent annually in the 1960s, and is estimated to have increased to 1.8 per cent per year during the period from 1970 to 1975.

Sex and age composition of the labour force

It is known that if demographic factors affecting the growth and structure of the labour force are taken separately, the population's composition by sex and age plays an important role. Given constant sex-specific and age-specific activity rates, the size of the labour force and its share of the total population will increase if the proportion of the population of working age rises. Conversely the size of the labour force will decline if the proportion becomes smaller. On the other hand, given a constant age structure, the size of the labour force and its share of the total population will depend on the sex-age specific activity rates.

During the period between 1950 and 1975, a combination of changes in the sex and age distribution of the world's population and, in particular, in participation rates, responding to socio-economic transformations, have influenced significantly the composition and structure of the labour force. Among the many changes in the labour force during this period two characteristics

stand out. First, a shift occurred in the sex composition of the labour force, as a result of which females accounted for a significantly higher proportion of the total labour force in 1975 than in 1950. Secondly, there was a tendency towards an increasing concentration of the labour force in the central age group from 25 to 54 years. These two changes were not unrelated. In all three broad age groups considered—younger workers (under 25 years of age), adult workers (25–54) and older workers (55 and older)—the economically active female population increased more rapidly than the active male population. In the older and younger age groups, the higher growth rates of female workers were not, however, sufficient to compensate for a relatively slow increase of male workers. As a result the growth of the labour force in these age groups was slow or moderate. In contrast, in the case of adult workers, a very rapid increase in the number of female workers, combined with an above-average growth rate of male workers, magnified the importance of this category in the total.

Sex composition of the labour force

Speaking in broad terms, the sex structure of the world's active population underwent an important change in the past 25 years as the proportion of female workers in the total increased significantly. Between 1950 and 1975 the proportion of males in the labour force declined from 69 to 65 per cent as a consequence of the higher growth rates of the female labour force (see annex table 164). The latter increased at an average annual rate of 2.1 per cent, compared with a rate of 1.4 per cent a year for the male labour force (see annex table 165). This growth differential is reflected in the substantially different evolution of the crude activity rates for each of the sexes. The world crude activity rate for males dropped sharply from 60.4 in 1950 to 53.8 in 1975. In contrast, the female rate rose from 27.5 to 29.1 between the two dates.

Despite the much more rapid growth of the female labour force, males continued to dominate the world's working population and their numerical increase accounted for by far the largest part of the additions to the labour force. Male workers still represented close to two thirds of the total labour force in 1975, and between 1950 and 1975 their number increased by 314 million, from 756 million to 1,070 million. In the same period the female labour force increased by 231 million, from 344 million in 1950 to 576 million in 1975. Thus, of the total net increase in the world's labour force, 58 per cent represented males and 42 per cent females.

The estimates for different sub-periods within the 25-year span, however, suggest that there were considerable fluctuations in the growth rates of both the male and the female labour force. The estimated annual average rate of growth of the male labour force during the 1950s, 1.2 per cent per annum, was only a fraction of that of the female labour force, which was 2.7 per cent. Between 1970 and 1975, on the other hand, the estimated growth rate for males had risen to 1.8 per cent per annum, whereas that for females had declined to 1.7 per cent. As a result, average annual increases in the numbers of male and female workers differed substantially. The male labour force increased continuously and steadily by about 9 million per year in the 1950s, 13 million in the 1960s and more than 18 million during the first half of the 1970s. In contrast the absolute increases in the female labour force varied little and showed a tendency to decline. During the 1950s the female labour increased annually by about 10 million (or 1 million more than the male labour force) but in the 1960s the annual increase dropped significantly, to 8 million. Between 1970 and 1975 the average annual increase of the female labour force was about 9 million. This was less than the annual increase for females during the 1950s and only half the average for the increase of the male labour force in the early 1970s.

Significant changes are also manifest when the sex composition of the labour force is considered by broad age groups. The higher rate of growth of the female labour force compared with that of males is reflected in rising proportions of female workers in each broad age group. In 1950, 65 per cent of the younger workers were males and 35 per cent were females. By 1975 the proportions were 62 and 38 per cent, respectively. A similar change occurred among adult workers between the ages of 25 and 54 years. Females represented 30 per cent of the adult labour force in 1950 and 34 per cent in 1975. In the case of older workers, the proportion of females rose from 27 per cent in 1950 to 30 per cent in 1975.

The trends described above were associated with differing increases in the number of male and female workers in each age group as well as with different patterns of change for each sex in the various sub-periods. Over the period from 1950 to 1975 the increase in young workers of each sex did not diverge much: some 65 million male and 58 million female workers under 25 years of age were added to the labour force. Similar increases for each of the sexes are also found amongst older workers: in 1975 there were 28 million more male and 20 million more female workers than in 1950. In the central adult age group, however, the increase in the male labour force of 221 million exceeded that of females (153 million) by a substantial margin. The increase in the number of male adult workers in this age group rose in steps from 7.6 million annually in the 1950s to 8.4 million in the 1960s and 12.2 million per year in the first half of the 1970s. In contrast, the average annual increase in the female labour force for the same ages almost equalled that of the male labour force in the 1950s, dropped to a low of 5.0 million in the 1960s and increased again to 6.1 million per annum, in the period 1970 to 1975. The last is below the average increase during the 1950s and only half the most recent annual increases for males.

Age composition of the labour force

Important changes in the age structure of the working population are among the main quantitative aspects of the evolution of the labour force over the last 25 years.

The outstanding characteristic has been the tendency towards a progressive concentration of the labour force in the central age group of 25–54 years. Between 1950 and 1975 the share of young workers (those under 25 years of age) in the labour force fell from 32.2 to 29.0 per cent and that of older workers (those 55 years of age and older) declined from 12.7 to 11.4 per cent. Concurrently, the proportion of the economically active population between 25 and 54 years of age rose from 55.1 per cent in 1950 to 59.6 per cent in 1975. These changes in the age structure of the labour force were associated with considerable differences in the growth rates of younger and older workers, on the one hand, and adult workers, on the other. The average annual rates of growth in the number of younger and older workers were moderate. Each group increased at about 1.2 per cent per annum, whereas the number of workers in the central age group increased at an annual rate of 1.9 per cent. Translated into absolute increases, these trends show that by far the greater part of the total increase in the labour force occurred in the central age group. The increase of workers in this age group, amounting to an estimated 375 million, accounted for nearly seven tenths of the total increase in the world's labour force between 1950 and 1975. In comparison, the increase of young workers represented 22.5 per cent of the total growth in the labour force and older workers accounted for 8.8 per cent.

Several additional characteristics of the increasing concentration of the working population in the central ages become evident if the evolution of the labour force in each of the three broad age groups is studied. The number of young workers increased by some 35 per cent, or 123 million persons, from about 354 million in 1950 to over 476 million in 1975. As noted above, the rate of growth of this segment of the working population remained substantially below that of the central age group, but it accelerated from an annual average of 0.7 per cent during the 1950s to 1.4 per cent in the 1960s and 1.7 per cent between 1970 and 1975. These rates would have been even lower were it not for the fairly rapid growth rate of female workers (at an average annual rate of growth of 1.6 per cent as opposed to a rate of about 1.2 per cent for males).

Although numerically less important, the number of older workers 55 years of age and older increased by some 48 million, from 140 million in 1950 to close to 188 million in 1975. As in the case of younger workers, the rate of growth of female workers in the older ages exceeded that of male workers, but the margin was greater. The number of females in the labour force aged 55 years and over increased between 1950 and 1975 at an average annual rate of 1.7 per cent, compared with 1.0 per cent per annum for males. Unlike younger workers, the growth rate of the older workers fell considerably over the 25-year period. In the 1950s the average annual growth rate for workers in this age group was over 1.4 per cent. During the 1960s it declined to 1.1 per cent and between 1970 and 1975 it fell further, to 0.8 per cent.

Over the 25-year period under review, the largest absolute and relative increases of the labour force took place in the group of adult workers between 25 and 54 years of age. As noted above, 981 million adult workers in 1975 accounted for almost 60 per cent of the total labour force, whereas the 606 million in 1950 represented only 55 per cent of the world's labour force. With a high average annual growth rate of 1.9 per cent, adult workers increased by 62 per cent between 1950 and 1975, or about twice as fast as each the younger and older workers. As in the case of the other age groups, the 2.5 average annual rate of growth of the female economically active population aged 25–54 was significantly higher than the rate for males (1.7 per cent per year).

The average annual growth rates for the central age group varied considerably during the 25-year period. The rate declined from 2.2 per cent in the 1950s to 1.7 per cent between 1960 and 1970. It accelerated again to 2.0 per cent during the early 1970s but remained below the rate of increase for the 1950s. The annual net increment of workers aged 25 to 54 years amounted to 15 million in the 1950s, fewer than 13 million during the 1960s and almost 18 million during the most recent five-year period.

The world's labour force by regions

Total labour force

An analysis of the situation and trends of the world's labour force shows that, with the steady increase in the share of the less developed regions in the world's total and working population, labour force trends in those regions have come to dominate to an increasing degree the evolution and structure of the world's labour force. At the same time differences between the more developed and less developed regions have increased. During the 25-year period under consideration, the labour force in the less developed countries has grown in absolute terms by 422 million persons, from 703 in 1950 to 1,125 million persons in 1975. In the more developed regions the labour force has grown by 123 million persons, from 397 million in 1950 to 520 million in 1975. Consequently, the less developed regions' share of the world's working population rose from 64 per cent of the total in 1950 to 68 per cent in 1975. More importantly, the less developed regions accounted for almost four fifths—nearly 78 per cent—of the increase of the world's labour force in the period. In terms of relative increase these trends imply that, whereas in the more developed regions the labour force grew by 31 per cent, at an average annual rate of 1.1 per cent, the labour force in the less developed regions grew nearly twice as fast, at an average rate of 1.9 per cent per annum.

The difference in labour force trends between the two groups of regions, as measured by crude activity rates, would have been greater were it not for the dampening effect of changes in the age composition and age-specific activity rates in the less developed regions (see annex table 163). The crude activity rate for the less de-

stand out. First, a shift occurred in the sex composition of the labour force, as a result of which females accounted for a significantly higher proportion of the total labour force in 1975 than in 1950. Secondly, there was a tendency towards an increasing concentration of the labour force in the central age group from 25 to 54 years. These two changes were not unrelated. In all three broad age groups considered—younger workers (under 25 years of age), adult workers (25–54) and older workers (55 and older)—the economically active female population increased more rapidly than the active male population. In the older and younger age groups, the higher growth rates of female workers were not, however, sufficient to compensate for a relatively slow increase of male workers. As a result the growth of the labour force in these age groups was slow or moderate. In contrast, in the case of adult workers, a very rapid increase in the number of female workers, combined with an above-average growth rate of male workers, magnified the importance of this category in the total.

Sex composition of the labour force

Speaking in broad terms, the sex structure of the world's active population underwent an important change in the past 25 years as the proportion of female workers in the total increased significantly. Between 1950 and 1975 the proportion of males in the labour force declined from 69 to 65 per cent as a consequence of the higher growth rates of the female labour force (see annex table 164). The latter increased at an average annual rate of 2.1 per cent, compared with a rate of 1.4 per cent a year for the male labour force (see annex table 165). This growth differential is reflected in the substantially different evolution of the crude activity rates for each of the sexes. The world crude activity rate for males dropped sharply from 60.4 in 1950 to 53.8 in 1975. In contrast, the female rate rose from 27.5 to 29.1 between the two dates.

Despite the much more rapid growth of the female labour force, males continued to dominate the world's working population and their numerical increase accounted for by far the largest part of the additions to the labour force. Male workers still represented close to two thirds of the total labour force in 1975, and between 1950 and 1975 their number increased by 314 million, from 756 million to 1,070 million. In the same period the female labour force increased by 231 million, from 344 million in 1950 to 576 million in 1975. Thus, of the total net increase in the world's labour force, 58 per cent represented males and 42 per cent females.

The estimates for different sub-periods within the 25-year span, however, suggest that there were considerable fluctuations in the growth rates of both the male and the female labour force. The estimated annual average rate of growth of the male labour force during the 1950s, 1.2 per cent per annum, was only a fraction of that of the female labour force, which was 2.7 per cent. Between 1970 and 1975, on the other hand, the estimated growth rate for males had risen to 1.8 per cent per annum, whereas that for females had declined to 1.7 per cent. As a result, average annual increases in the numbers of male and female workers differed substantially. The male labour force increased continuously and steadily by about 9 million per year in the 1950s, 13 million in the 1960s and more than 18 million during the first half of the 1970s. In contrast the absolute increases in the female labour force varied little and showed a tendency to decline. During the 1950s the female labour increased annually by about 10 million (or 1 million more than the male labour force) but in the 1960s the annual increase dropped significantly, to 8 million. Between 1970 and 1975 the average annual increase of the female labour force was about 9 million. This was less than the annual increase for females during the 1950s and only half the average for the increase of the male labour force in the early 1970s.

Significant changes are also manifest when the sex composition of the labour force is considered by broad age groups. The higher rate of growth of the female labour force compared with that of males is reflected in rising proportions of female workers in each broad age group. In 1950, 65 per cent of the younger workers were males and 35 per cent were females. By 1975 the proportions were 62 and 38 per cent, respectively. A similar change occurred among adult workers between the ages of 25 and 54 years. Females represented 30 per cent of the adult labour force in 1950 and 34 per cent in 1975. In the case of older workers, the proportion of females rose from 27 per cent in 1950 to 30 per cent in 1975.

The trends described above were associated with differing increases in the number of male and female workers in each age group as well as with different patterns of change for each sex in the various sub-periods. Over the period from 1950 to 1975 the increase in young workers of each sex did not diverge much: some 65 million male and 58 million female workers under 25 years of age were added to the labour force. Similar increases for each of the sexes are also found amongst older workers: in 1975 there were 28 million more male and 20 million more female workers than in 1950. In the central adult age group, however, the increase in the male labour force of 221 million exceeded that of females (153 million) by a substantial margin. The increase in the number of male adult workers in this age group rose in steps from 7.6 million annually in the 1950s to 8.4 million in the 1960s and 12.2 million per year in the first half of the 1970s. In contrast, the average annual increase in the female labour force for the same ages almost equalled that of the male labour force in the 1950s, dropped to a low of 5.0 million in the 1960s and increased again to 6.1 million per annum, in the period 1970 to 1975. The last is below the average increase during the 1950s and only half the most recent annual increases for males.

Age composition of the labour force

Important changes in the age structure of the working population are among the main quantitative aspects of the evolution of the labour force over the last 25 years.

The outstanding characteristic has been the tendency towards a progressive concentration of the labour force in the central age group of 25–54 years. Between 1950 and 1975 the share of young workers (those under 25 years of age) in the labour force fell from 32.2 to 29.0 per cent and that of older workers (those 55 years of age and older) declined from 12.7 to 11.4 per cent. Concurrently, the proportion of the economically active population between 25 and 54 years of age rose from 55.1 per cent in 1950 to 59.6 per cent in 1975. These changes in the age structure of the labour force were associated with considerable differences in the growth rates of younger and older workers, on the one hand, and adult workers, on the other. The average annual rates of growth in the number of younger and older workers were moderate. Each group increased at about 1.2 per cent per annum, whereas the number of workers in the central age group increased at an annual rate of 1.9 per cent. Translated into absolute increases, these trends show that by far the greater part of the total increase in the labour force occurred in the central age group. The increase of workers in this age group, amounting to an estimated 375 million, accounted for nearly seven tenths of the total increase in the world's labour force between 1950 and 1975. In comparison, the increase of young workers represented 22.5 per cent of the total growth in the labour force and older workers accounted for 8.8 per cent.

Several additional characteristics of the increasing concentration of the working population in the central ages become evident if the evolution of the labour force in each of the three broad age groups is studied. The number of young workers increased by some 35 per cent, or 123 million persons, from about 354 million in 1950 to over 476 million in 1975. As noted above, the rate of growth of this segment of the working population remained substantially below that of the central age group, but it accelerated from an annual average of 0.7 per cent during the 1950s to 1.4 per cent in the 1960s and 1.7 per cent between 1970 and 1975. These rates would have been even lower were it not for the fairly rapid growth rate of female workers (at an average annual rate of growth of 1.6 per cent as opposed to a rate of about 1.2 per cent for males).

Although numerically less important, the number of older workers 55 years of age and older increased by some 48 million, from 140 million in 1950 to close to 188 million in 1975. As in the case of younger workers, the rate of growth of female workers in the older ages exceeded that of male workers, but the margin was greater. The number of females in the labour force aged 55 years and over increased between 1950 and 1975 at an average annual rate of 1.7 per cent, compared with 1.0 per cent per annum for males. Unlike younger workers, the growth rate of the older workers fell considerably over the 25-year period. In the 1950s the average annual growth rate for workers in this age group was over 1.4 per cent. During the 1960s it declined to 1.1 per cent and between 1970 and 1975 it fell further, to 0.8 per cent.

Over the 25-year period under review, the largest absolute and relative increases of the labour force took place in the group of adult workers between 25 and 54 years of age. As noted above, 981 million adult workers in 1975 accounted for almost 60 per cent of the total labour force, whereas the 606 million in 1950 represented only 55 per cent of the world's labour force. With a high average annual growth rate of 1.9 per cent, adult workers increased by 62 per cent between 1950 and 1975, or about twice as fast as each the younger and older workers. As in the case of the other age groups, the 2.5 average annual rate of growth of the female economically active population aged 25–54 was significantly higher than the rate for males (1.7 per cent per year).

The average annual growth rates for the central age group varied considerably during the 25-year period. The rate declined from 2.2 per cent in the 1950s to 1.7 per cent between 1960 and 1970. It accelerated again to 2.0 per cent during the early 1970s but remained below the rate of increase for the 1950s. The annual net increment of workers aged 25 to 54 years amounted to 15 million in the 1950s, fewer than 13 million during the 1960s and almost 18 million during the most recent five-year period.

The world's labour force by regions

Total labour force

An analysis of the situation and trends of the world's labour force shows that, with the steady increase in the share of the less developed regions in the world's total and working population, labour force trends in those regions have come to dominate to an increasing degree the evolution and structure of the world's labour force. At the same time differences between the more developed and less developed regions have increased. During the 25-year period under consideration, the labour force in the less developed countries has grown in absolute terms by 422 million persons, from 703 in 1950 to 1,125 million persons in 1975. In the more developed regions the labour force has grown by 123 million persons, from 397 million in 1950 to 520 million in 1975. Consequently, the less developed regions' share of the world's working population rose from 64 per cent of the total in 1950 to 68 per cent in 1975. More importantly, the less developed regions accounted for almost four fifths—nearly 78 per cent—of the increase of the world's labour force in the period. In terms of relative increase these trends imply that, whereas in the more developed regions the labour force grew by 31 per cent, at an average annual rate of 1.1 per cent, the labour force in the less developed regions grew nearly twice as fast, at an average rate of 1.9 per cent per annum.

The difference in labour force trends between the two groups of regions, as measured by crude activity rates, would have been greater were it not for the dampening effect of changes in the age composition and age-specific activity rates in the less developed regions (see annex table 163). The crude activity rate for the less de-

veloped regions fell by 3 percentage points between 1950 and 1975, from 42.7 to 39.7. In contrast, the crude activity rate for the more developed regions declined by less than half a percentage point, from 46.4 in 1950 to 46.0 in 1975. By the latter year the difference in crude activity rates between more developed and less developed regions had thus widened to 6.3 percentage points, from 3.7 percentage points in 1950.

Between 1950 and 1975 the net increments in the labour force for different sub-periods increased steadily. During the three periods from 1950 to 1960, 1960 to 1970, and 1970 to 1975, the average annual increments in the labour force in the more developed regions increased from 4.4 million to 4.6 million and then to 6.4 million. In the less developed regions the growth of the labour force in the three sub-periods average over 15 million a year in the decade from 1950 to 1960, almost 17 million annually in the next decade and some 21 million between 1970 and 1975.

In addition to significant differentials between the more developed and less developed regions, there are considerable differences among the levels and trends of the labour force participation in the world's eight major areas. Some of the major characteristics of these trends are summarized in table 49. These data suggest several conclusions. Growth rates of the labour force in the predominantly less developed areas (East and South Asia, Africa and Latin America) are on the whole substantially higher than in the predominantly more developed areas with the exception of Oceania. Consequently, the share of the world labour force in each area decreased in all the predominantly more developed areas except Oceania and increased in all of the predominantly less developed areas. The observed changes are the outcome of the combined effect of differences in demographic trends and changes in over-all labour participation. In general, the crude activity rates of the less developed areas (notably Latin America, South Asia and Africa) were somewhat below those of the more developed areas in 1950 and in 1975 these differences between these major areas had increased. However, with the exception of Oceania and East Asia, the highest rates of growth of the labour force are found where over-all participation rates are relatively low. In most cases this reflects differentials in population growth among the major areas. Consequently, for instance, in Europe the crude activity rate declined only moderately between 1950 and 1975, but as the growth rate of its labour force was low, its share in the world labour force fell from 16.5 to 12.8 per cent. In contrast, the labour force in South Asia increased at a high rate and its share of the world's total increased despite a large decline in crude activity rates.

Sex and age composition of the labour force

Variations in initial conditions and in demographic trends and socio-economic development since 1950 have combined to magnify in some cases and reduce in others the differences between more developed and less developed regions as regards the sex-age composition of their working populations. The major trends may be summarized as follows. In both the more developed and less developed regions women have come to represent an increasing proportion of the labour force. The relative rise in the importance of female workers has been greater in the less developed regions, but it has not been large enough to bridge the initial gap created by the considerably higher female participation in the more developed regions. As far as the age composition of the labour force is concerned, increasing concentration of the labour force in the central age groups occurred in both the more developed and the less developed regions. In general this concentration was more pronounced in the more developed regions in 1950 and it is also in these regions that the subsequent increase has been more rapid. The general conclusions outlined above, however, should be interpreted with caution. Data for individual geographical areas suggest a considerable diversity of conditions and trends, and over-all tendencies for more developed and less developed regions, mask great differences amongst major geographical areas and probably even larger ones between individual countries.

Sex composition

The change in the relative importance of male and female workers discussed above with respect to the world's labour force was manifested in each the more developed and less developed regions, albeit with differing intensity. The proportion of females in the working population of the more developed regions rose by 3.0 percentage points, from 36.7 per cent in 1950 to 39.7 in 1975, as the percentage of males declined from 63.3 to 60.3. In the less developed regions the share of female workers amounted to only 28.3 per cent in 1950,

TABLE 49. CHANGES IN THE WORLD'S LABOUR FORCE, BY MAJOR GEOGRAPHICAL AREAS, 1950–1975

	Increase in the labour force, 1950–1975		*Percentage of the world's labour force*		*Crude activity rate (percentage of the total population in the labour force)*	
	Number (millions)	*Annual percentage*	*1950*	*1975*	*1950*	*1975*
Africa	57.4	1.9	8.5	9.3	42.8	37.9
Latin America	44.6	2.3	5.2	6.2	35.1	31.5
Northern America	33.7	1.6	6.4	6.3	42.5	44.0
East Asia	180.0	1.9	26.6	28.7	43.4	47.0
South Asia	164.6	1.8	27.6	28.5	43.8	37.5
Europe	28.3	0.6	16.5	12.8	46.4	44.5
Oceania	3.6	2.1	.5	.6	43.1	42.6
USSR	33.1	1.2	8.6	7.7	52.1	49.8

but it rose by 4.5 per cent to 32.8 in 1975, causing the percentage for males to drop from 71.7 to 67.2. Despite the larger relative rise in the proportion of females in the labour force in the less developed regions, the percentage of females in the labour force of these regions in 1975 was still substantially lower than in the more developed regions.

These shifts in the sex composition of the labour force conceal substantial differences in the growth rates of the working population of each sex in the more developed and less developed regions. During the 25-year period under review, the male labour force in the more developed regions grew by 24 per cent while the female labour force grew by 42 per cent. These increases were just under half the corresponding figures for the less developed regions, where the number of male workers rose by 50 per cent and that of female workers rose by 86 per cent between 1950 and 1975. Translated into rates of change, these figures show that in the more developed regions the male labour force increased on the average at 0.9 per cent per annum while the female labour force grew at 1.4 per cent. The corresponding growth rates for the male and female labour forces in the less developed regions were 1.6 and 2.5 per cent per annum for the 25-year period (see annex table 165). Even though the rate of growth of the female labour force in both the more and the less developed regions exceeded the one for males by a wide margin, the absolute growth of the labour force by sex shows divergent patterns in the two regions. In the more developed regions, roughly 60 million people were added to both the male and the female labour force between 1950 and 1975, but in the less developed regions about a third more workers were added to the male labour force than to the female (the female labour force increased by 170 million while the male labour force increased by 252 million).

Trends in the male and female labour force in the eight major geographical areas varied substantially but do reveal some consistency in trends. The estimates indicate that in the four predominantly more developed areas (USSR, Northern America, Europe and Oceania) the increase in the labour force was about evenly divided between males and females, although in two of these regions (Northern America and Europe) the number of additional female workers slightly exceeded that for males, whereas a higher increase of male workers was found in the USSR. In three of the predominantly less developed areas (South Asia, Africa and Latin America) additions to the female labour force remained far below those of the male labour force, at about a third to a half the absolute increase in the number of male workers. In South Asia, however, the absolute increase of female workers was much larger than that of males.

Growth rates of the male and female components of the labour force in the different areas have not exhibited clear patterns. Although on the whole the female component has grown more rapidly than the male, this was not so in Africa and the USSR. In Africa the male economically active population grew at a slightly higher rate than the female one. In the USSR, the difference was more pronounced. The number of females increased at a slightly faster rate than males in South Asia. The growth differential in rates was somewhat larger in Europe, and in the remaining areas annual growth rates of the female labour force exceeded those of the male labour force by a margin varying from about 1 to close to 2 per cent annually (see table 50).

These trends over the last 25 years have not appreciably affected the wide range of variation in the percentage shares of women in the total labour force. In 1975 women represented as little as one fifth of the total labour force in Latin America, and as much as half of the labour force in the USSR. On the whole, in 1975 the proportion of females in the labour force was lower in the predominantly less developed areas than in the predominantly more developed ones.

The differing trends in the major areas have made for large variations in levels and changes in male and female crude activity rates. In every area the male crude activity rate has declined. Female activity rates, on the other hand, fell in some areas (South Asia, Africa and the USSR), increased slightly in others (Latin America and Europe) and rose significantly in the remaining ones (Oceania, Northern America and, especially, East Asia). These changes, however, did not reduce appreciably the variation in over-all female participation in the different areas. The lowest crude activity rate for females in 1975, found in Latin America, was only 14.1 per cent, whereas, at the other extreme, in the USSR it was 46.2 per cent. In general, with the exception of East Asia, female crude activity rates for the predominantly less developed areas remained below those for the predominantly more developed areas throughout the 25-year period.

TABLE 50. CHANGES IN THE WORLD'S LABOUR FORCE, BY SEX, MAJOR AREAS, 1950–1975

	Growth of the labour force, 1950–1975				*Females as a percentage of the labour force*		*Crude activity rate*			
	Number (millions)		*Percentage per annum*				*Male*		*Female*	
	Male	*Female*	*Male*	*Female*	*1950*	*1975*	*1950*	*1975*	*1950*	*1975*
Africa	39	18	2.0	1.9	32.9	32.4	57.7	51.6	28.0	24.4
Latin America	32	12	2.1	3.2	18.0	22.3	57.1	48.9	12.7	14.1
Northern America	15	19	1.0	2.7	28.3	37.4	61.0	56.3	24.0	32.2
East Asia	81	98	1.3	3.2	27.9	38.0	60.8	57.4	24.9	36.3
South Asia	113	52	1.7	1.8	30.1	30.5	59.8	50.9	27.0	23.4
Europe	12	16	0.4	1.0	32.9	36.2	64.8	58.2	29.4	31.4
Oceania	2	2	1.7	3.0	25.9	32.3	62.9	56.9	22.7	27.9
USSR	19	15	1.4	1.1	51.8	49.7	57.2	53.9	48.1	46.2

Age composition

One of the major characteristics of the trends in the age composition of the world's labour force (an increasing concentration of the working population in adult ages) is evident to a degree in both the more and the less developed regions. Comparatively speaking, in the more developed regions a much higher proportion of the labour force is found in the central age group of 25–54 years. The proportion of older workers in the total labour force is also higher in the more developed regions. This is compensated for by a considerably higher percentage of younger workers in the less developed regions. In the more developed regions the proportion of workers in the central ages rose from 58.5 per cent in 1950 to 65.5 per cent in 1975. At the same time the relative numbers of both younger and older workers decreased—the former from 27.2 to 21.8 per cent and the latter from 14.3 to 12.7 per cent. To the extent that, as is often assumed, the process of concentration of the labour force in the central ages is a cumulative one, which accompanies socio-economic evolution, and given the traditionally higher levels of economic participation of younger and older persons in the less developed countries, it is to be anticipated that the degree of concentration would not be as pronounced in the less developed countries. In fact, between 1950 and 1975 the share of the central ages in the labour force in these regions rose from 53.2 to 56.9 per cent. The proportion of younger and older workers declined from 35.0 to 32.3 per cent and from 11.8 to 10.8 per cent, respectively. Since the rate of concentration in the central age group has been slower in the less developed than in the more developed regions, the difference between the proportion of workers in the age group has increased.

The above trends were associated with variations in the growth rates of the labour force in each age group. In the more developed regions the number of adult workers between 25 and 54 years of age increased between 1950 and 1976 at an average annual rate of 1.5 per cent. The number of younger workers increased very slowly, at 0.2 per cent per year, while the rate of increase of older workers, 0.6 per cent per year, was also comparatively slow. Similar growth differentials, although less pronounced, were also evident in the less developed regions, where the adult labour force increased at an average annual rate of 2.2 per cent between 1950 and 1975, while the number of both younger and older workers increased at rates of between 1.5 and 1.6 per cent per annum.

The variations in growth rates reflect the number of workers added to the labour force in each of the age groups in the two groups of regions. Between 1950 and 1975 the number of workers in the adult ages increased by 108 million, or 46.4 per cent, accounting for nearly 90 per cent of the total increase in the labour force of the more developed regions. The number of younger workers increased by barely 5 million, or 5 per cent, and the number of older workers increased by 9.3 million, or by 16.4 per cent. In the less developed regions, the rise in the absolute number of workers between 25 and 54 years was larger, but it represented relatively less growth than the addition to the same age group in the more developed regions. In the less developed regions the number of adult workers increased by 267 million, or about 71 per cent. This figure represented a considerable proportion of the total increase in the labour force (63 per cent) but it was substantially less than the proportion (90 per cent) of the total increase in the more developed regions. This reflects the fact that the number of younger workers and, to a lesser extent, older workers increased more in the less developed than in the more developed regions. In 1975 there were 117 million more active persons under 25 years of age than in 1950 (a percentage rise of 47.7 per cent) and 39 million more older workers (a percentage increase of 46.5 per cent).

In both the more and the less developed regions, there were important differences in the growth rates of male and female workers by age. In the more developed regions the number of female workers in the central age group increased at an average annual rate of 2.0 per cent, between 1950 and 1975, whereas the rate of increase for male workers of the same ages was 1.3 per cent. The absolute differences between growth rates of male and female workers in the other age groups were smaller. The number of young male and female workers increased by 0.1 and 0.4 per cent per annum, respectively, and the number of older workers grew by 0.5 and 0.9 per cent. The growth rates for the same three age groups in the less developed regions were more uniform. The number of male workers increased by about 1.3 per cent per annum for both the young and the older groups, whereas the central age group increased at a rate of about 2.0 per cent per annum. Female workers in the youngest group increased by about 2.1 per cent. In the central age group the number of female workers increased by about 2.8 per cent per annum and the oldest age group grew at a rate of approximately 2.3 per cent.

The trends briefly reviewed above were important factors in some of the significant changes that occurred between 1950 and 1975 in the sex-specific and age-specific activity rates. In both the more developed and the less developed regions the direction of change was generally the same. The only exception was the participation rate of females of 55 years and over in the more developed regions. That rate declined (from 24.2 to 18.1) but in the less developed regions it is estimated to have increased (from 23.8 to 26.7). Participation rates for males in the central age group changed little, as was to be expected given the fact that high participation rates in these ages are virtually universal. Considerable changes, however, occurred in the other sex-age groups, and as a rule these changes were more pronounced for the more developed than for the less developed regions. In both, female activity rates for ages 25–54 increased, but the rise was much more pronounced for the more developed regions, where the rate was 45.5 in 1950 and reached 59.9 per cent in 1975. In the less developed regions the respective figures were 39.4 and 46.5 per cent. Participation rates for the young ages (under 25 years) fell in both groups of regions. For males in more developed countries the rate declined from 55.4 to 43.0 per

cent, and in the less developed regions it dropped from 66.4 to 51.7 per cent. For females the decline was much more moderate: from 40.1 per cent in 1950 to 34.7 per cent in 1975 in the more developed regions and from 31.9 to 30.3 per cent in the less developed regions. Finally, participation rates for males in ages 55 and over fell from 66.4 to 48.2 per cent in the more developed regions and from 81.0 to 71.3 per cent in the less developed regions.

The increasing concentration of the economically active population in the central ages from 25 to 54 years was a nearly universal phenomenon between 1950 and 1975 (see table 51). Northern America was the exception. The amount of increase varied in the other areas. Among the predominantly less developed areas, the percentage of the labour force in the central age group increased moderately, from just over 2 to about 5 percentage points. Among the predominantly more developed areas the variation was substantially greater—ranging from a decreasing share in Northern America (a decline of 3.8 percentage points) to a large increase of 17.6 percentage points in the Soviet Union. Evidently there were specific factors beyond the scope of this report that contributed to the variations noted.

TABLE 51. PERCENTAGE SHARE OF WORKERS 25–54 YEARS OF AGE IN THE TOTAL LABOUR FORCE, 1950–1975

	1950	*1975*
Africa	51.6	54.8
Latin America	54.1	56.4
Northern America	63.9	59.9
East Asia	56.0	59.5
South Asia	51.3	56.5
Europe	58.5	63.9
Oceania	58.3	58.9
USSR	55.3	72.4

E. DEPENDENCY*

There are a number of ways of measuring dependency. Of the two classes of indices most commonly used, one is based solely on population data and the other uses both population and labour force data. The first is derived from the age structure of a population and measures the number of "dependent" persons in terms of children under a specified age and older persons above a certain age as a percentage of the total population or of persons in the "non-dependent" age groups. These indices can be calculated for both sexes combined or each one separately. Such purely demographic measures serve to assess and monitor changes in the relative size of "dependent" and "non-dependent" age groups, as was done briefly in section B of the present chapter, but they indicate "potential" rather than "effective" dependency. In fact, they serve mainly as useful tools for assessing the impact on the age composition of changing levels of fertility, mortality and migration rather than the combined effect of age distribution and participation in economic activities. One advantage of this class of measures, however, is that the information required is as a rule more readily available and more comparable than are data for the second class of dependency indices.

The second class of dependency measures takes into account both a population's age composition and the levels and patterns of participation in the labour force. This type of measure is usually expressed in terms of either the ratio of the total population or of the dependent population (defined as those people not in the labour force) per 1,000 active persons (defined as members of the labour force). The latter is the ratio used here. As in the case of dependency ratios based solely on population data, this class of measure lends itself to further refinement through the calculation of a dependency ratio for each sex, different age groups and so forth. This class of measure requires more data than the other and the comparability of these data may be more limited. For example, variations in the lower age limit adopted for investigating the activity status of children and adolescents may restrict the comparability of data for different times and places. In addition, it is particularly difficult to obtain reliable information on economic activity for certain population groups, such as children.

The figures presented below are international standard bench-mark estimates prepared by the International Labour Office. It should be noted that the dependency data for 1975 have been derived from population and labour force projections. As a result, the estimated dependency ratios for that year may be subject to a certain margin of error, although it is not considered to be large and the trends in dependency ratios over the 25-year period treated are not likely to be much affected. In addition, it should be noted that the reported dependency status is determined by the different definitions for classifying persons as economically active adopted by each country. The data for each country, and the corresponding regional and other figures, have been based on differing national practices with regard to the lower age limit, if any, used for the classification of persons as economically active or inactive. These factors, as indicated above, may to some extent affect the comparability of results.

Global trends

Total dependency

Since 1950 the world's non-active population has grown at a substantially higher rate than the economically active population and, consequently, the global dependency ratio has increased significantly. It is estimated that in 1950 the inactive population amounted to 1,404 million persons, which was nearly 28 per cent more than the economically active population (1,100 million). In the succeeding 25-year period the world's non-active population increased by 919 million, or 65 per cent, while the active population increased by 545 million, or 50 per cent. The net result of these increases was the addition of 1,685 dependents for every 1,000 new workers. By 1975 the dependent population had grown to 2,322 million persons, while the world's labour force amounted to some 1,646 million (see annex table 162). Meanwhile the dependency ratio, which was 1,276

* Prepared by the International Labour Office in collaboration with the Population Division of the United Nations Secretariat.

non-active persons per 1,000 workers in 1950, had increased by 11 per cent to 1,411 non-active per 1,000 active persons (see annex table 166).

The net increase in the total dependency ratio between 1950 and 1975 conceals considerable variations within this period. The increments as measured by the number of dependants per 1,000 active workers were small early in the period, then rose sharply and subsequently declined. In the 1950s the increase in the dependency ratio was moderate. Eight dependants per 1,000 active persons were added from 1950 to 1955, and 19 more were added between 1955 and 1960. The peak period of growth was attained in the first half of the 1960s, when 54 dependants were added for every 1,000 workers. Since then the increase has tapered off to increments of 36 more dependants per 1,000 active persons between 1965 and 1970, and 18 more in the first half of the 1970s.

Sex and age patterns

In addition to those just discussed, there have recently been considerable differences in the dependency trends for males and females and for broad age groups. The following aspects stand out. The rise in dependency burden over the 25-year period was primarily the result of a considerably more rapid increase of male than female dependants. Female dependency has nevertheless been higher than that for males throughout the period. With regard to broad age groups, the data show that child dependency, traditionally the most important category of dependants, increased substantially in absolute terms. It accounted for more than two thirds of the increase in the number of dependants per 1,000 active persons. In relative terms, the increase in child dependency was similar to that of all dependent groups. Another significant factor in the rise of the total dependency burden was the especially pronounced increase in the number of males in the age group 15–24. Old-age dependency also rose substantially, both in absolute and relative terms and again in this case the male increase was proportionately much larger. Counteracting the trends towards a significantly higher dependency in the other age groups was a relative decline of dependency in the prime working ages (25–54 years) which was largely a result of higher female participation in the labour force.

The observed rise in total dependency ratio was the result of different patterns of change for the sexes. Although, because of their lower levels of labour force participation, females represent the bulk of the dependent population, the dependency ratio for females (number of female dependants as a proportion of the total active population) increased much more slowly, both in absolute and relative terms, than did the corresponding ratio for males. In 1950 there were 1,276 dependants per 1,000 active persons and 825 (65 per cent) were females. By 1975, of the 1,411 dependants per 1,000 workers, 854 (61 per cent) were females (see annex tables 166 and 168). In contrast, male dependency rose from 451 per 1,000 active persons in 1950 to 557 by 1975. In relative terms the dependency ratio for females increased by 4 per cent in the 25-year period, whereas the ratio for males went up by 24 per cent. Male dependency increased steadily during the period but female dependency declined somewhat between 1950 and 1960.

Since children under 15 years of age are not as a rule in the labour force, or are not classified as such, child dependants account for the major proportion of all dependants. According to the estimates, their share of the total remained close to the norm throughout the 25 years. The number of child dependants rose from 743 to 835 per 1,000 workers between 1950 and 1975. The increase of 92 child dependants per 1,000 active persons represented more than two thirds of the total increase of 135 per 1,000 in the total dependency ratio over the 25-year period. However, in relative terms the increase in the number of child dependants represents a change of only 1 percentage point in the proportion of all dependants under the age of 15 years (from 58 per cent in 1950 to 59 per cent in 1975). Moreover, the increase in the number of child dependants (12 per cent) about equalled the increase in total dependency (11 per cent).

The number of dependants in the age group 15 to 24 years, which includes the ages of advanced secondary and higher education as well as the ages of entry into the labour force, may vary considerably over a period of time. During the 25 year period from 1950 to 1975 the dependency ratio for this age group underwent important changes, principally due to increased male dependency. In 1950 there were 148 dependants in these ages per 1,000 active persons compared with 193 in 1975. This reflects a relative increase of 30 per cent. The proportion of the dependency ratio represented by these young people was 12 per cent in 1950 and rose to 14 per cent in 1975. The dependency ratio for women in the age group rose by 11 points, from 114 in 1950 to 125 in 1975, whereas the male ratio increased by nearly three times that amount. As a result of the latter increase the number of male dependants aged 15–24 per 1,000 active persons practically doubled, from 35 in 1950 to 69 in 1976.

High rates of participation, and in consequence low dependency ratios, are characteristic of the central age group (25–54 years). During the period under consideration the non-active population in these ages remained small and in relative terms decreased. From 245 dependants per 1,000 active persons in 1950 (which represented 19 per cent of the total dependency ratio) the figure for the central age group fell to 213 persons in 1975 (or 15 per cent of the total dependency ratio). Almost all males aged 25–54 years were in the labour force, and the corresponding low dependency ratio for males in the age group changed little during the 25-year period (it was 13 in 1950 and increased slightly to 17 in 1975). Male dependants in the central age group represented only about 1 per cent of all dependants. Thus the total change in dependency for the age group was primarily the result of a decrease in female dependency associated with an increase in female labour force participation. In 1950 there were 232 female dependants aged 25–54 years for each 1,000 active persons,

but by 1975 the ratio had declined to 197. In relative terms the proportion of female dependants of prime working age accounted for 28 per cent of all female dependants in 1950 and 23 per cent in 1975.

The number of dependants in the last age group, the older ages of 55 years and above, increased at a fairly rapid rate between 1950 and 1975. The number of older dependants per 1,000 active persons was 139 in 1950 and rose to 170 in 1975. This produced a relative increase of somewhat more than 22 per cent. Even so, with respect to the total dependent population, the relative importance of the older dependants did not change very much. Non-active persons 55 years of age and older accounted for 11 per cent of all dependency in 1950 and 12 per cent in 1975. Although a sizeable majority of the older dependants are still women, the male proportion has been growing relatively fast. In 1950 some 78 per cent of older dependants were females but by 1975 the proportion of females had fallen to 71 per cent.

Regional levels and trends

World-wide trends obscure substantial differences between more developed and less developed regions as well as among geographical regions. For example, dependency ratios for the less developed regions have been significantly higher than for the more developed regions and the differentials have increased in the last 25 years. In both the more developed and the less developed regions, however, female dependency has been higher than male and has accounted for a similar declining share of all dependency. Moreover, substantial differences have existed between more developed and less developed regions in the age structure of dependency. In the latter, children have accounted for a much higher proportion of total dependency, whereas in the more developed regions old-age dependency has been comparatively much higher.

Total dependency

Total dependency ratios in the less developed regions in 1950 were substantially higher than those in the more developed regions, and the differential has become more pronounced since then. For the less developed regions as a whole there were 1,343 dependants per 1,000 workers in 1950 as compared with 1,157 in the more developed regions. By 1975 the ratio had risen 14 per cent, to 1,520 persons per 1,000 workers in the less developed regions, whereas in the more developed regions a modest increase of 2 per cent brought the ratio to 1,176. Thus, in 1975 every 1,000 active persons in the less developed regions, which were the least capable of taking on an increased burden, had to support 177 more people than in 1950, while the increase in the more developed regions was only 19. In 1975 the dependency burden in the less developed regions was nearly 30 per cent higher than in the more developed regions, or nearly double what the relative difference had been 25 years earlier.

Average dependency ratios for both the more and the less developed regions do not reflect substantial differences between areas in each group. Within the less developed regions, Latin America stands out for its very high dependency ratios. In 1950 it had an estimated average of dependants per 1,000 workers that was some 54 per cent higher than the global average and 43 per cent above the one for the less developed regions. Comparatively speaking, in 1950 the estimated dependency ratios for the other predominantly less developed areas varied between relatively narrow limits: there were 1,283 dependants per 1,000 economically active persons in South Asia, 1,305 in East Asia and 1,337 in Africa. Within the group of predominantly more developed areas dependency ratios were higher than the world average in Northern America, where there were 1,354 dependants per 1,000 workers, and Oceania, which had 1,318 dependants per 1,000 workers. The dependency ratio for Europe was considerably lower (1,154) and the ratio of 920 in the USSR was more than one quarter (28 per cent) less than the world average.

By the same token, changes in dependency ratios for the predominantly less developed and more developed regions in the period 1950 to 1975 conceal significant differences in the patterns of change in individual regions. Broadly speaking, the absolute and relative variations of dependency ratios in the less developed regions increased. This was mainly the result of a substantial, but varying, rise of dependency ratios in three of the major geographical areas (Latin America, South Asia and Africa) and a sharp decline in the ratio for East Asia. In the case of East Asia the dependency ratio declined by more than 13 per cent, from an estimated 1,305 dependants per 1,000 workers in 1950 to 1,429 in 1975. The latter was nearly 20 per cent below the world average. In Latin America the ratio rose by some 17 per cent, to 2,177 between 1950 and 1975, and in Africa it grew by about 23 per cent to an estimated 1,639. The largest absolute and relative increase in the dependency ratio occurred in South Asia, where the estimated 1,670 dependants per 1,000 active persons in 1975 was 30 per cent more than in 1950.

In contrast to the observed trends in dependency in the less developed regions, the trends found in the more developed regions show a tendency towards convergence. Dependency ratios for the areas where the ratios were highest in 1950 either declined or increased very little. The dependency ratio for Northern America declined from 1,354 in 1950 to 1,272 in 1975, while the ratio for Oceania increased from 1,318 to 1,348. The areas that had the lowest ratios in 1950, on the other hand, experienced a relatively greater rise in dependency. The dependency ratio for Europe rose from 1,154 to 1,250, and the ratio for the USSR increased from 920 to 1,009.

Sex and age patterns

The major characteristic of the dependency ratios for each of the sexes observed on a world-wide basis (a

higher level but a slower increase of female as compared with male dependency), are also manifest in the more developed and less developed regions separately. In the former there were 397 male and 761 female dependants per 1,000 workers in 1950, or close to two female dependants for every male dependant. In the less developed regions there were 481 male and 861 female dependants per 1,000 workers. In both groups of regions female dependants thus accounted for somewhat less than two thirds of the total dependency. In both groups of regions female dependency also increased between 1950 and 1975 at a substantially lower rate than male dependency. In the more developed regions the male dependency ratio rose by 13.4 per cent, from 397 in 1950 to 450 in 1975, while the number of female dependants per 1,000 workers declined by 4.6 per cent, from 761 in 1950 to 726 in 1975. In absolute terms the rise in male dependency more than offset the fall in female dependency. As in the case of the more developed regions, male dependency in the less developed regions increased rapidly. Between 1950 and 1975, the number of female dependants per 1,000 workers rose by about 5.9 per cent, from 861 to 913, while the number of male dependants increased by an estimated 26.2 per cent, from 481 to 607. Thus, around seven tenths of the absolute increase in all dependency during the period is attributable to the growth of male dependency in the less developed regions. In 1950 female dependency represented 66 per cent of the total dependency ratio in the more developed and 64 per cent of the ratio in the less developed regions. As a result of the trends just discussed, female dependency dropped to 62 per cent of the total in the more developed regions and to 60 per cent in the less developed regions by 1975.

Levels and trends of male and female dependency in major areas conform on the whole to the patterns described above. As may be seen from annex tables 166, 167 and 168, between 1950 and 1975 female dependency exceeded male dependency by a considerable margin in every major area, but the size of the differential diminished. Nevertheless, the percentage changes in male and female dependency varied greatly during the period. The number of male dependants per 1,000 workers increased in all areas except East Asia (where it declined slightly). The relative increases in male dependency surpassed the world average in the predominantly less developed regions of Latin America, South Asia and Africa and also in Europe. The relative increases fell below the average in Northern America, the USSR and Oceania and, of course, East Asia. On the whole female dependency ratios also rose proportionately more in the predominantly less developed areas where male ratios increased most. In East Asia, however, female dependency declined by about 20 per cent. Among the predominantly more developed areas, female dependency hardly changed at all in Europe and the USSR, and declined in Northern America and Oceania. As a result of these trends, male dependency in every area accounted for a larger share of total dependency in 1975 than in 1950. In 1950, male dependency accounted for between 32 and 39 per cent of all dependency. By 1975 that range had risen to between 37 and 43 per cent. Conversely, the percentages corresponding to female dependency, which had varied between 61 and 68 per cent in 1950, declined to between 57 and 63 per cent in 1975.

Differences in the age composition of populations and in patterns of age-specific participation rates have contributed to large variations between the age structure of dependency in the more developed and less developed regions. Although in both the more developed and less developed regions children under 15 years of age have constituted the most important group of dependants, the relative weight of child dependency in the total has been much greater in the less developed regions. A second major difference between the more developed and less developed regions is that older dependants (persons 55 years of age and older) have represented a higher proportion in the more developed countries. It is only in this age group that the number of dependants per 1,000 workers appears to have been consistently higher in the more developed countries. In 1950 the number of older dependants per 1,000 workers was 193 in the more developed regions as compared with 109 in the less developed regions. At the same time there were about 831 child dependants per 1,000 workers in the less developed regions as compared with 588 in the more developed regions. Differences between the more developed and less developed regions were less marked in other age groups: dependency ratios for the early working ages (15–24 years) were 113 in the more developed and 168 in the less developed regions. The least difference in 1950 occurred in the dependency ratios for the central ages (25–54 years), which were 235 in the less developed regions and 262 in the more developed regions.

Between 1950 and 1975 trends in age-specific dependency in the more developed and less developed regions changed greatly and in such a way as to accentuate the initial differences in the age structure of dependency. Two aspects of this evolution stand out. In the first place, the dependency ratio for children (0–14 years of age) increased by about 17 per cent in the less developed regions during that period. As a consequence, in the less developed regions the relative importance of child dependency rose from 62 per cent of all dependency in 1950 to 64 per cent in 1975, whereas in the more developed regions it fell from 51 to 46 per cent. In absolute terms, the number of child dependants per 1,000 workers declined in the more developed regions from 588 to 541, while in the less developed regions it increased from 832 to 970. In 1950 child dependency in the less developed regions was 41 per cent higher than in the more developed regions; by 1975 it was 79 per cent higher. In the second place, the dependency ratio for the age group 55 years and older increased in the more developed regions by 50 per cent, from 193 in 1950 to 290 in 1975, while in the less developed regions it remained virtually stable (it was 109 in 1950 and 115 in 1975). Thus old-age dependency in the more developed regions jumped from 17 per cent of all dependency in 1950 to 25 per cent in 1975.

Lesser changes occurred in the remaining age groups. In the 15–24-year age group, the number of dependants per 1,000 workers increased in both the more developed and the less developed regions. The major change occurred in the more developed regions, where the dependency ratio increased from 113 in 1950 to 156 in 1975. This represented a percentage increase of 40 per cent. In the less developed regions the ratio increased from an estimated 168 in 1950 to 211 in 1975, or by about 26 per cent only. Nevertheless, throughout the period the burden of dependency stemming from the age group 15–24 years was greater in the less developed than in the more developed regions. In both, dependency in the central age group (25–54 years) declined. The dependency ratio for the central age group dropped by 28 per cent (from 262 in 1950 to 189 in 1975) in the more developed regions, but in the less developed countries it fell off by only about 5 per cent (from 235 in 1950 to 224 in 1975). Thus, in 1975, the absolute number of dependants per 1,000 active persons in the central age group in the less developed regions exceeded the number in the more developed regions, whereas the opposite had been true a quarter of a century earlier.

There has also been considerable diversity with respect to the age structure of dependency in the major areas, but on the whole the major patterns found for the more developed regions are evident in the data for the predominantly more developed areas taken separately and the patterns described for the less developed regions similarly hold for all the predominantly less developed areas except East Asia. Even so, as can be seen in annex tables 166, 167 and 168, the levels and trends in dependency ratios for different age groups have differed substantially from area to area. For example, the dependency ratio for children (0–14 years of age) in Latin America was more than twice the average for the more developed regions in 1975. In addition, contrary to the general trend elsewhere, the dependency ratio in Latin America for persons from 25 to 54 years of age increased during the 25-year period (albeit by only 1 per cent) from 382 in 1950 to 384 in 1975. Finally, the dependency ratio for persons 55 years of age and over, which was 173 in Latin America, was well above the average of 115 for the less developed regions. Recently, South Asia and Africa have also been distinguished by very high child dependency. In 1975 child dependency accounted for 65 per cent of all dependency in South Asia and about 67 per cent in Africa. On the other hand, Africa had the lowest dependency ratio for persons aged 55 years and older (90 in 1975). Among the figures for East Asia, the low dependency ratio of 163 in 1975 for the central age group (25–54 years of age) stands out. It was second only to the one for the USSR.

F. Trends in the agricultural population and labour force*

Estimates of the total labour force of countries and areas, prepared by the International Labour Organisation, and of populations, prepared by the Population Division of the United Nations Secretariat, are available for every five years between 1950 and 1975. The International Labour Organisation has also prepared estimates of the agricultural labour force for every five years from 1950 to 1970. These estimates are based on the results of the 1950, 1960 and 1970 rounds of population censuses. For 1975, estimates of the agricultural labour force have been made by extrapolation, using the proportion of the labour force in agriculture in 1970 and the total labour force in 1975 and assuming that the annual rate of decline in the proportion of the total labour force employed in agriculture during the period from 1965 to 1970 continued in the period from 1970 to 1975. Data on the size of the total agricultural population are not available for most countries of the world. It has, therefore, been necessary to estimate the agricultural populations from other information. This has been done by assuming that the dependency ratio of the agricultural population is the same as the ratio for the total population. Although the assumptions used are arbitrary, they provide reasonable over-all estimates, particularly for those countries where the proportion of the labour force in agriculture is large.

Agricultural labour force

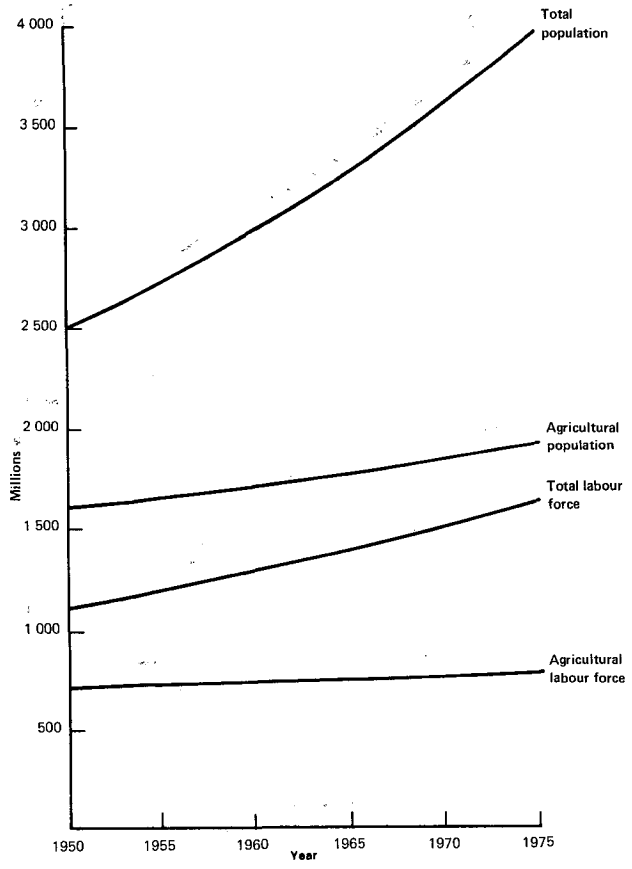
The world's agricultural labour force is estimated to have been 707 million persons in 1950. In 1975 it was 789 million persons (see table 52 and figure VI). The absolute increase of more than 82 million people represents an increase of only 12 per cent for the 25-year period, or about 0.44 per cent a year. In contrast, the total world population increased at an annual average rate of

* Prepared by the Food and Agriculture Organization of the United Nations.

Table 52. Estimates of the agricultural labour force with annual growth rates, the world, by level of development and by continent, 1950–1975

	Agricultural labour force (millions)						*Annual growth rates*					
	1950	*1955*	*1960*	*1965*	*1970*	*1975*	*1950–1975*	*1950–1955*	*1955–1960*	*1960–1965*	*1965–1970*	*1970–1975*
World	707	727	749	756	769	789	0.4	0.6	0.6	0.2	0.3	0.5
More developed regions	149	139	124	108	89	76	–2.7	–1.4	–2.3	–2.8	–3.7	–3.2
Less developed regions	558	588	625	648	679	713	1.0	1.1	1.3	0.7	0.9	1.0
Africa	76	80	85	91	98	105	1.3	1.1	1.2	1.4	1.5	1.5
Latin America	31	32	34	35	36	38	0.9	1.0	1.0	0.8	0.8	0.7
Northern America	9	7	6	5	4	3	–4.2	–3.9	–5.2	–3.3	–4.2	–4.5
East Asia	234	245	260	263	267	270	0.6	0.9	1.2	0.2	0.3	0.2
South Asia	230	249	262	274	290	308	1.1	0.9	1.0	0.9	1.1	1.2
Europe	67	61	55	49	42	37	–2.4	–1.7	–2.2	–2.4	–3.0	–2.5
Oceania	2	2	2	2	2	2	0.6	0.3	0.4	0.7	0.8	0.9
USSR	52	51	46	39	30	25	–2.9	–0.6	–1.9	–3.5	–4.8	–3.7

Figure VI. Total population and labour force and agricultural population and labour force, the world, 1950-1975



1.8 to 1.9 per cent during the same period and the total world labour force grew at about 1.6 per cent. Thus, in comparative terms the recent growth of the world agricultural labour force has been very low. Consequently, the proportion of the total world labour force employed in agriculture declined from about 64 per cent in 1950 to 48 per cent in 1975 (see table 53). Such a development reflects the modernization of society, with fewer people working in agriculture and more in other industries as the economy develops, and the modernization of agriculture, which permits a smaller agricultural labour force to produce the same amounts or more from the soil. The trend is, of course, a composite, which averages widely differing situations in the more developed and less developed countries. In the more developed regions the agricultural labour force declined both in absolute numbers and as a proportion of the total labour force. In the less developed regions, on the other hand, the agricultural labour force increased in absolute terms but decreased as a proportion of the total labour force.

The moderate growth in the world's agricultural labour force varied substantially by five-year periods. In the first and second half of the 1950s it grew at a rate of 0.6 per cent per annum. The growth rate dropped sharply to 0.2 per cent a year in 1960–1965, then increased slowly during the next 10 years to 0.5 per cent. Such sharp fluctuations reflect both inadequate data and variations in definitions of the labour force that cannot be overcome completely, as well as real fluctuations in the labour force. The drop in the growth rate of the agricultural labour force between 1960 and 1965 was due largely to a sharp decline in the less developed

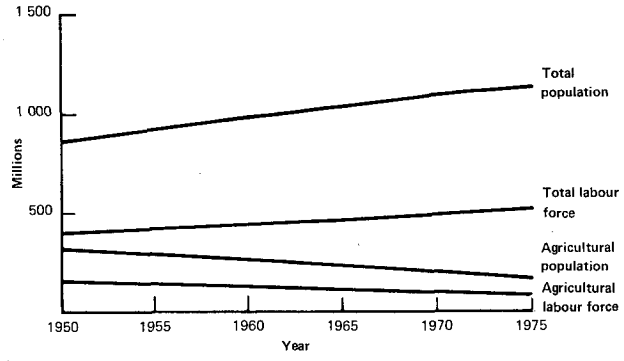
TABLE 53. PERCENTAGE OF THE TOTAL LABOUR FORCE IN AGRICULTURE, THE WORLD, BY LEVEL OF DEVELOPMENT AND BY CONTINENT, 1950–1975

	1950	*1955*	*1960*	*1965*	*1970*	*1975*
World	64.3	60.9	57.7	54.2	51.0	48.0
More developed regions	37.6	33.0	28.1	23.1	18.3	14.7
Less developed regions	79.5	76.2	73.1	69.8	66.6	63.5
Africa	80.9	78.8	76.7	74.1	71.5	69.2
Latin America	53.3	50.5	47.8	44.3	40.9	37.7
Northern America	12.8	10.0	7.1	5.6	4.1	3.0
East Asia	79.8	74.2	69.2	65.1	61.0	57.4
South Asia	78.3	76.3	74.3	71.4	68.6	65.9
Europe	36.6	32.7	28.7	24.6	20.7	17.6
Oceania	31.9	29.9	27.6	25.6	23.7	22.3
USSR	55.8	48.9	41.9	33.8	25.7	19.5

regions of East Asia and South Asia. East Asia, China and Mongolia each experienced a considerable decline in this period. In South Asia, where the decline in absolute numbers was smaller and, therefore, had less impact on the world total, Burma and Viet Nam experienced similar sharp declines.

In the more developed regions, where the agricultural labour force constituted 37.6 per cent of the total labour force in 1950, the absolute numbers employed in agriculture showed an absolute decrease of 73 million, or 50 per cent, in the 25-year period from 1950 to 1975. At the latter date it was 14.7 per cent of the total labour force (see figure VII). The rate of decline in the agricultural labour force accelerated by five-year periods up to 1970, from -1.4 to -3.7 per cent per annum, then moderated somewhat in the last five-year period.

Figure VII. Total population and labour force and agricultural population and labour force, more developed regions, 1950-1975

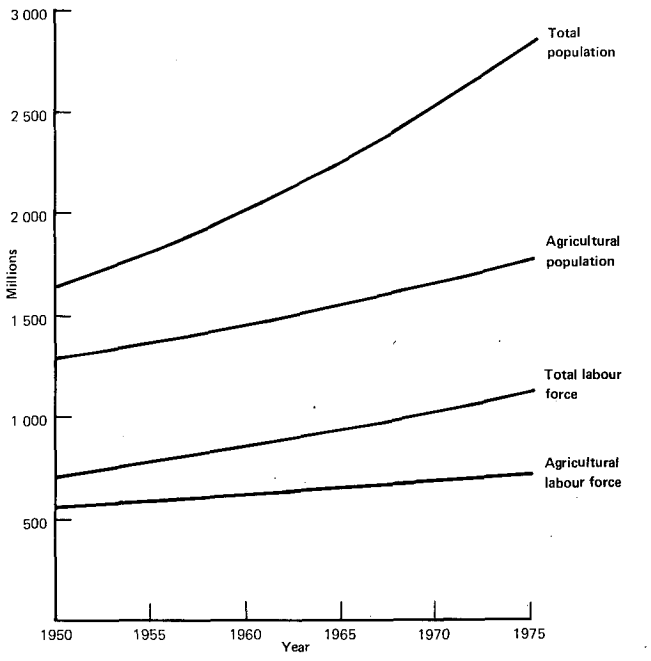


The rate of decline of the agricultural labour force, although rapid everywhere, varied considerably both by region and as a proportion of the total labour force. In Northern America, where the agricultural labour force declined from 12.8 to 3.0 per cent of the total labour force in the 25-year period, the rate of decline, which averaged -4.2 per cent per annum, reached -5.2 per cent between 1955 and 1960. In Europe, the agricultural labour force declined much more slowly, from 36.6 per cent of the total labour force in 1950 to 17.6 per cent in 1975. Except for the period 1970–1975, the rate of decline accelerated in a regular pattern up to -3.0 per cent per annum in 1965–1970. This rate was an average of national rates of decline of as high as -7.8 per cent per annum in Luxembourg and of less rapid rates of decline in other countries, and of a steady rate of increase in Albania. In Japan and the USSR, where the proportion of the total labour force in agriculture declined from about a half to less than one fifth, the rate of decline was somewhat slower. In Japan the rate of decline changed steadily from -1.8 per cent per annum in 1950–1955 to -4.4 per cent per annum in 1970–1975. In the Soviet Union it moved from -0.6 per cent in 1950–1955 to -4.8 per cent in 1965–1970. In Temperate South America, where the agricultural labour force constituted about 27 per cent of the total in 1950 and 16 per cent in 1975, the rate of decline changed from -0.3 per cent per annum in 1950–1955 to -1.0 per cent in 1965–70, and continued to decline somewhat more slowly in the period from 1970 to 1975.

In the less developed regions, the agricultural labour force, estimated at 558 million in 1950, showed an absolute increase of more than 155 million, or about 1 per cent a year from 1950 to 1975 (see figure VIII). This large increase occurred while the proportion of the labour force employed in the agricultural sector of the economy decreased from about four fifths to less than two thirds.

Although the agricultural labour force of the less developed regions grew at an average rate of 1 per cent per year between 1950 and 1975, there were irregular changes of up to 1.2 per cent from 1955 to 1960 and down to 0.7 per cent a year from 1960 to 1965. The increase between 1955 and 1960 occurred largely in East Asia (principally in China and Mongolia, but also in Korea), whereas the increase between 1960 and 1965 reflected the global trends discussed above. Again, widely differing regional trends make up the average trend for all less developed nations. In Africa, where agriculture employed about 80 per cent of the total labour force in 1950, the rate of growth increased in each five-year period from roughly 1.1 per cent per annum in 1950–1955 to 1.5 per cent in 1970–1975. In Latin America, where the agricultural labour force constituted slightly more than half of the total labour force in 1950, the rate of growth in numbers employed in agriculture declined from 1.0 per cent to 0.8 per cent between 1950–1955 and 1965–1970. It increased slightly between 1965–1970 and 1970–1975. In East Asia, where agriculture provided close to 80 per cent of the employment, as in Africa, the decreasing but irregular trend in the rate of

Figure VIII. Total population and labour force and agricultural population and labour force, less developed regions, 1950–1975



growth fell from about 1.0 per cent in 1950–1955 to 0.2 per cent in 1970–1975. In South Asia, with a similar level of agricultural labour force participation, there was a trend towards increase. The changes in the rate of growth were also irregular but, with the exception of a drop in 1960–1965, a pattern of slow increase can be discerned. Less developed countries in Oceania, where the population of agricultural labour force was also high, showed similar rates of increase in the agricultural labour force.

On a very general level the rate of decline in the proportion of the total labour force in agriculture was slow where the proportion was high and it was somewhat more rapid where the proportion was low. In part, this pattern of decline reflects the fact that a small absolute decrease in the agricultural labour force becomes a larger percentage decline where the proportion of the labour force in agriculture is low to begin with. It may also reflect an increased pace of movement out of agriculture once the process of development has begun. It would seem, however, that the variation in the rate of decline in the proportion of the total labour force in agriculture among countries primarily reflects different economic and technological developments both in the agricultural and non-agricultural sectors of the economy in each country, rather than the initial level of the proportion in agriculture.

Agricultural population

The agricultural population, estimated as the product of the proportion of the labour force in agriculture and

the total population, followed a general pattern similar to that of the agricultural labour force. In the more developed countries there was an absolute as well as a proportionate decline in the agricultural population, while in the less developed countries the agricultural population increased absolutely but declined as a proportion of the total population. However, since the total population grew faster than the labour force in most countries, the agricultural population grew faster than the agricultural labour force. For the world as a whole, the agricultural population showed an increase of 324 million persons in the period from 1950 to 1975 (see table 54). The over-all rate of growth was approximately 0.7 per cent per annum. This increase was composed of a moderate but consistent increase in less developed regions and a fairly rapid decrease in the more developed regions.

In the more developed regions, the agricultural population declined from 312 million in 1950 to 160 million in 1975, or to nearly half its 1950 level (see table 54). The net decline of 152 million persons in the agricultural population contrasts with an increase in the total population of nearly 275 million persons. The decrease of the agricultural labour force in the more developed regions was more than offset by an increase of 476 million in the agricultural population in the less developed regions, where the agricultural population increased by approximately 1.3 per cent a year in the same period (see table 54). The increase in the agricultural population was less rapid than that of the total population, which, with an average growth rate of 2.2 per cent per year, increased by 1.2 billion. Thus, although the agricultural population increased considerably during the period, it grew slower than the total population of the less developed regions and, therefore, its proportion decreased from four fifths of the total in 1950 to less than two thirds in 1975.

Since the growth of the agricultural population is dependent not only on the growth of the agricultural labour force but also on that of the total population, the sharp shifts in the growth rate of the agricultural labour force by five-year periods are not evident in the figures for the agricultural population. For example, the sharp decline in the agricultural labour force in the period from 1960 to 1965 does not appear in the estimates for the agricultural population. The rate of growth in the agricultural population for the whole world was somewhat irregular but that population consistently increased. In the more developed regions the rate of growth was steadily more negative, whereas in the less developed regions it was increasingly positive, but in each case the trend for the whole agricultural population was much more consistent than the corresponding trend in the agricultural labour force.

TABLE 54. ESTIMATES OF AGRICULTURAL POPULATION WITH ANNUAL GROWTH RATES, THE WORLD, BY LEVEL OF DEVELOPMENT AND BY CONTINENT, 1950–1975

	Agricultural population (in millions)						*Annual growth rates*					
	1950	*1955*	*1960*	*1965*	*1970*	*1975*	*1950–1975*	*1950–1955*	*1955–1960*	*1960–1965*	*1965–1970*	*1970–1975*
World	1 605	1 649	1 709	1 777	1 845	1 929	0.7	0.5	0.7	0.8	0.8	0.9
More developed regions	312	290	263	231	192	160	-2.6	-1.5	-1.9	-2.6	-3.7	-3.5
Less developed regions	1 293	1 359	1 446	1 546	1 653	1 729	1.3	1.0	1.3	1.3	1.4	1.4
Africa	173	187	203	223	244	269	1.8	1.6	1.7	1.8	1.9	2.0
Latin America	88	96	103	110	116	123	1.3	1.7	1.7	1.2	1.0	1.1
Northern America	21	18	14	12	9	7	-4.3	-3.2	-4.7	-3.4	-5.0	-5.2
East Asia	539	541	544	556	568	581	0.3	0.1	0.1	0.5	0.4	0.5
South Asia	539	577	630	686	748	815	1.7	1.4	1.8	1.7	1.7	1.7
Europe	141	131	120	107	32	80	-2.3	1.4	-1.8	-2.3	-3.0	-2.8
Oceania	4	4	4	4	4	5	0.8	0.8	0.7	0.8	0.8	0.9
USSR	100	96	90	78	62	50	2.8	-0.9	-1.3	-2.8	-4.4	-4.4

Chapter VII

ASPECTS OF DEVELOPMENT

A. THE RELATION BETWEEN EDUCATION AND DEMOGRAPHIC VARIABLES*

Population dynamics have an evident and direct bearing on the development of education. Large increases in the size of the school-age population, which are typical of developing countries today, combined with an almost universal demand for education, have led to a situation where the absolute number of children not enrolled in the educational system is growing larger, although there has been some relative improvement. This is occurring despite the serious efforts of Governments to improve opportunities for access to learning. A greater intake into a country's present educational system implies, of course, the need for more teachers, more classrooms, more materials and, correspondingly, greater expenditure. At the same time, high rates of population growth result in high dependency ratios and a relatively small labour force to provide for those of school age. High growth rates leave little room for improving educational quality since extra resources have to be used for accommodating additional pupils. Such rates also affect the possibilities of achieving educational targets, as was so clearly expressed in the presentation of Ghana's population policy:

> "Had the Ghanaian population over the previous 20 years grown at half the rate at which it did grow, the facilities and personnel of 1966–67 would have been adequate for all the children of school age and the nation's goal of universal education could have become a reality."[1]

Migration, a further aspect of population dynamics, also has an effect on education. In particular, rapid urbanization, which is generally characteristic of developing countries, means that educational facilities have to be expanded very quickly in towns if enrolment ratios (which are generally higher than in the rural areas) are not to fall. Rural areas where out-migration is marked may suffer through loss of dynamic elements of their population (including teachers), and where there is significant depopulation, this may aggravate problems of providing educational services, partly because of the limited area a single school can serve.

The impact of education on population dynamics is much less clear, and a substantial amount of competent research is still necessary on the effects of education on demographic behaviour. While it is known that "modernity" is associated with lower fertility, there has been only limited success so far in separating education from the mass of closely entwined factors that make up the "modernity" complex. Thus, although it has been demonstrated that literacy, enrolment ratios or educational achievement tend to be inversely related to fertility, this does not necessarily imply that simply expanding the educational system will result in smaller families. If, for example, greater opportunities are provided for girls to attend school, it cannot be expected that motivation towards fewer children will automatically follow in the absence of opportunities for self-fulfilment outside the traditional family role. Regarding migration, there is evidence that migrants from rural to urban areas tend to be better educated than the average person in the area of origin. However, the manner in which education contributes to the decision to migrate is as yet little understood.

As regards educational programmes concerned specifically with raising awareness of population issues or with reproduction, the effects are understood even less. In the case of family planning programmes, including those where lower fertility rather than child spacing is the stated aim, it has proved very difficult to determine in what way and to what extent subsequent decreases in fertility are due to the programmes themselves rather than to extraneous causes. Practically nothing is known so far about the long-term results of population education programmes for youth.

Although there has long been an interest in the nature of the relationship between population and education, the question has now become one of urgency. Apart from the problem of having to provide for increasing numbers, there is concern about the adequacy of educational systems in their present form to cope with the task of preparing individuals for life. What does seem clear is that if people are to contribute effectively to the social and economic life of their communities and if they are to make informed decisions with regard to fertility, then the relevancy and quality of their education need to be more seriously examined than in the past.

This paper deals more fully with the better documented aspect of the education/population relationship—that concerning the effects of demographic change on education. With regard to the reverse aspect, concerning the effects of education on population dynamics, an effort has been made to summarize the most significant characteristics of the relationship. Particular attention is paid to population education and communication on population matters as forms of education specifically directed at bringing about changes in population-related attitudes and behaviour.

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* Prepared by the United Nations Educational, Scientific and Cultural Organization.

[1] Government of Ghana, *Population Planning for National Progress and Prosperity: Ghana Population Policy* (Accra-Tema, Ghana Publishing Corporation, 1969), p. 11.

Population dynamics and their implications for education

Growth of the school-age population

The influence of population dynamics on education is perhaps most obviously reflected in the size of the school-age population. In the developing countries, the rapid decline in mortality over the last few decades, which has not been accompanied by a corresponding decline in fertility, has resulted in high rates of population growth and large annual increments in the school-age population. This situation presents serious problems for those countries which already are straining to expand their educational systems to accommodate larger proportions in the relevant age groups.

The next few paragraphs are intended to illustrate the way in which demographic variables can affect educational development. For this purpose, the two broad categories of "more developed" regions and "less developed" regions are used.[2] But this is not to underestimate the importance of differences existing between individual countries. The projections are useful in suggesting the magnitude of quantitative problems hindering educational expansion under different assumptions of population growth. Their purpose is not to predict the future, but rather to invite action to avoid undesirable trends.

Table 55 shows that considerable progress was made by the less developed regions between 1960 and 1970 in raising the proportions of those enrolled in school in both the first (6–11) and second (12–17) age groups, which correspond roughly to the primary and secondary educational levels. Enrolment ratios rose from 46.6 to 56.7 in the first group and from 21.4 to 31.1 in the second (see also annex table 169). Despite this progress, which involved making available a further 100 million places in all, the number of children aged 6–11 not at school increased by 11.8 per cent, whereas those aged 12–17 increased by 18.8 per cent. In the more developed regions, on the other hand, where only an additional 38 million places were made available, it was possible not only to accommodate additional pupils, but also to reduce the numbers of out-of-school youth. This was greatly facilitated by slower population growth.

In the case of the 25 least developed countries,[3] where enrolment ratios are well below the average for the less developed regions as a whole, the number of out-of-school youth rose during the same period from 15.9 to 18.1 million for the 6–11 year age group, and from 14.0 to 16.6 million for the 12–17 age group.

Population growth is, of course, not the sole factor to be taken into account in planning for extra places in education; this would be true only where universal education had already been achieved or where it was decided

TABLE 55. POPULATION IN AGE GROUPS 6-11 YEARS AND 12-17 YEARS, PROPORTIONS ENROLLED IN SCHOOL AND OUT-OF-SCHOOL YOUTH[a]

	Age group 6–11 years			*Age group 12–17 years*		
	Number in age range (millions)	*Percentage enrolled*	*Number of out-of-school youth (millions)*	*Number in age range (millions)*	*Percentage enrolled*	*Number of out-of-school youth (millions)*
More developed regions						
1960	111	90.5	11	94	77.8	21
1970	119	93.0	8	116	86.4	16
Less developed regions						
1960	206	46.6	110	169	21.4	133
1970	284	56.7	123	230	31.1	158

[a] Excluding China, the Democratic People's Republic of Korea and the former Democratic Republic of Viet-Nam.

to hold the enrolment ratio constant. In fact, those faced with the task of expanding school attendance rates from a low initial base must often feel that additions to the school-age population account for very little compared with the large numbers already existing for whom places have to be made available. It has been calculated, however (see annex table 170), that even in such situations the proportion of additional enrolments resulting from population growth is highly significant. This proportion becomes increasingly evident as the period under consideration lengthens.

As indicated in table 56, in order to maintain to the year 2000 the enrolment ratio of 1970 for the 6–11 age group, the less developed regions would need to accommodate an additional 110 million pupils even if the low population variant materialized. This implies that between 1970 and 2000 the number of pupils would increase by nearly 70 per cent, whereas in the more developed regions, assuming the high variant, the number of pupils would increase by less than 1 per cent.

Whether the less developed regions achieved a 100 per cent enrolment ratio for this age group in 1990 or in 2000, the total number of extra children to be included in the educational system between 1970 and 2000 would remain the same; the earlier date implies a higher concentration of effort than the later one over the first 20 years, but with an earlier slack-off point. But the difference in terms of additional enrolments needed between 1970 and 2000 if the high rather than the low variant turned out to be the true one is enormous, and represents 75 per cent of the total 1970 enrolment of children aged 6–11. To express the problem in other terms, the additional enrolment between 1970 and 2000, assuming the high variant, is nearly one and a half times the additional enrolment for the same period assuming the low variant.

[2] As defined in "World population prospects, 1970–2000, as assessed in 1973" (ESA/P/WP.53).

[3] As defined for the purpose of the Meeting of Senior Officials of the Ministries of Education of the 25 Least Developed Countries, held in Paris in September 1975.

TABLE 56. ADDITIONAL PUPILS IN THE AGE GROUP 6–11 YEARS TO BE ACCOMMODATED UNDER DIFFERENT ASSUMPTIONS OF ENROLMENT INCREASE AND POPULATION GROWTH[a]

(Millions)

	More developed regions				*Less developed regions*			
	1970–1980	*1980–1990*	*1990–2000*	*1970–2000*	*1970–1980*	*1980–1990*	*1990–2000*	*1970–2000*
1970 enrolment ratio maintained								
Low population variant ..	–	–	–	–	40.2	45.4	24.4	110.0
High population variant	6.2	2.1	5.0	13.3	44.3	74.2	60.1	178.6
Linear increase in enrolment ratio to reach 100 per cent enrolment by 2000								
Low population variant ..	–	–	–	–	91.5	119.7	105.8	317.0
High population variant	9.2	9.9	10.8	29.9	96.5	164.3	177.2	438.0
Linear increase in enrolment ratio to reach 100 per cent enrolment by 1990								
Low population variant ..	–	–	–	–	117.1	156.9	43.0	317.0
High population variant	11.6	13.0	5.4	30.0	122.6	209.4	106.0	438.0

[a] Excluding China, the Democratic People's Republic of Korea and the former Democratic Republic of Viet-Nam.

The extent to which a country manages to include children in primary education has a long-run effect on the literacy rate. (The success of schools in ensuring permanent literacy as well as the results of adult literacy programmes are other relevant factors.) Between 1960 and 1970 the proportion of illiterate adults fell from 39.3 to 34.2 for the world as a whole. However, due to population increase, in absolute terms the number of illiterates rose from 735 to 783 million. Details by region are given in annex table 171.

Providing for the needs of increasing numbers

Enrolment growth has, of course, implications for the provision of teachers, classrooms, educational materials, etc. In a theoretical situation where new enrolments are accounted for purely by population growth, without any attempts being made to change pupil/teacher ratios, the number of additional teachers required is directly related to increases in the number of school-age children. In practice, however, developing countries hope not only to keep pace with new entrants to the educational system, but also to raise the proportion of teachers to pupils as well as to improve teacher qualifications. This calls for an even greater training effort.

The same argument applies to educational costs. Assuming that there will be no change in costs per pupil and that enrolment ratios will be held constant, increases in costs will be entirely due to population growth. But here again, this kind of calculation is not likely to correspond to reality and ignores factors such as inflation or salary improvements.

The question of financing is still a crucial one. During the 1960s, a serious problem confronting the developing countries was to train enough adequately qualified teachers. Over the next decade, it appears likely that this group of countries could manage to train at least sufficient numbers to maintain 1970 pupil/teacher ratios, assuming continuation of the enrolment trends of the last 10 years, although without necessarily significant improvement in the proportion of children at school. For the future, financial constraints could prove to be the most serious obstacle. Between 1960 and 1970, the share of public budgets spent on education rose considerably faster than gross national product, and in 1970 this share was on the average higher for the developing than the developed regions. Although there is no theoretical limit to the proportion of national income that is spent on education, a country's pattern of expenditure has to be seen as a whole, and greater allocations for education will entail correspondingly smaller allocations for other sectors such as production.

Where the share of gross national product spent on education is identical for a developing and a developed country, this does not mean that the share *per capita* of school-age population will be the same. The reason for this is the relatively greater youthful population characteristic of countries experiencing rapid population growth, which consequently places a heavier burden on the labour force. In 1975, for example, in the more developed regions there were 16 children in the 6–11 age group for every 100 of the working-age population (15–64 years). In the less developed regions there were 30.

The pressure of numbers and problems of quality and inequality

The effects of population dynamics on the quality of education are less direct and consequently more difficult to assess. Nonetheless, there seems to be little doubt that when a country must expand educational facilities quickly to include large numbers of additional school-age children, less resources are available to improve these facilities in ways such as upgrading of teachers, providing better equipped classrooms or introducing new teaching technology. In this respect, the experience of Singapore is an interesting one.[4] Towards the end of the 1950s, fertility began to decline rapidly. This led to a decrease in primary school entrants and by the end of the 1960s it became possible to concentrate on improving access to secondary and higher education. In addition, expenditure per pupil rose considerably as equipment and buildings as well as teacher training standards were improved. Educational expenditure was

[4] Gavin Jones, *Population Growth and Educational Planning in Developing Nations* (New York, Irvington Publishers, 1975).

not decreased, but went into raising the quality of the system rather than expanding it.

One indicator of quality is the pupil-teacher ratio, although it is not known exactly to what extent this affects learning achievement in different circumstances. Table 57 shows that between 1960 and 1970 the number of pupils per teacher varied little for both groups of countries, but that in primary education the ratios were considerably higher for the developing regions. Efforts to improve these ratios will be more difficult where the number of new entrants to primary education is expected to be high. It will also be more difficult to increase expenditure on non-teacher items in the educational budget.

TABLE 57. PUPIL-TEACHER RATIOS IN PRIMARY AND SECONDARY EDUCATION

	Primary education			*Secondary education*		
	1960	*1965*	*1970*	*1960*	*1965*	*1970*
More developed regions ..	25	24	23	18	18	16
Less developed regions	38	38	37	22	23	22

Quality, or lack of it, is reflected in education survival rates. From table 58 it can be seen that in the less developed regions only 54 per cent of those enrolled in primary school grade 1 in 1967 reached grade 4, with the situation varying considerably by geographical region. This shows an improvement over the proportion of 1960 grade 1 enrolment reaching grade 4, but it indicates that large numbers of children still leave school after only a few years, probably before they have had a chance to achieve permanent literacy. The table conceals irregularities such as excessive repetition and drop-out, or school attendance at abnormally high ages.

TABLE 58. APPROXIMATE EDUCATION SURVIVAL RATES FOR 1960 AND 1967 COHORTS, BOTH SEXES

Less developed regions	*Percentage of enrolment in grade 1 in 1960 that reached grade 4*	*Percentage of enrolment in grade 1 in 1967 that reached:*		
		Grade 2	*Grade 3*	*Grade 4*
Total	47	71	63	54
East Asia	95	98	97	97
South Asia	48	72	63	53
Africa	66	81	74	67
Latin America	34	59	50	42

The extent to which an educational system meets individual needs within different groups can also be taken as an indicator of quality. Here again, preoccupation with having to provide for increasing numbers tends to detract from efforts to reduce inequalities.

The difference between enrolment ratios for girls and boys is one of the most frequently observed (and best documented) aspects of the equality problem. In the less developed regions, the percentage of total enrolment represented by girls has not yet reached 50 per cent, but there has been some improvement between 1960 and 1970 (from 39 to 42 per cent for the 6–11 age group and from 34 to 37 per cent for the 12–17 age group). Girls also tend to drop out of the system earlier.

Disparities between different areas in a single country may be quite large. These may be reflected in differences not only in the proportion of children in school, but in the availability of upper primary and secondary education, in the level of training of teachers and in expenditure per pupil. In one country for which data exist, the percentage of teachers with less than minimum qualifications varied among regions from 10.3 to 48.5 per cent and pupil/teacher ratios from 23.3 to 34.9 per cent.[5] Frequently, however, information on the regional distribution of educational facilities is not available, which makes it difficult to plan for improvement.

Inequalities are particularly acute between urban and rural areas. Data for a number of Asian and Latin American countries (see annex table 172) show that enrolment ratios for children between 5 and 15 years are lower in rural areas already at primary level, and the differentials increase considerably with age. The situation is made more complex by rural-urban migration which has taken on huge dimensions in the less developed regions, resulting in rapid urban growth.

Whereas the rural population in the developing regions grew by about 700 million in 1950–1975, and is likely to grow by another 800 million in 1975–2000, the urban population increased by about 500 million in 1950–1975 and will probably increase by more than 1.2 billion in 1975–2000.[6] A large part of the increase in urban population has been and will be due to migration. According to the 1961 Indian census, for example, almost 64 per cent of the population of Greater Bombay consisted of migrants.

Where in-migration to towns is substantial, a strong effort will be required to maintain existing enrolment ratios (which are higher in urban areas). Although economies of scale are possible in towns, costs are apt to be higher. Migration may cause problems of a different kind in rural areas. Those who leave are often among the best educated, thus causing a drop in the general level of educational achievement. Sometimes also, in sparsely populated districts, difficulties of providing education for children scattered over large areas may be aggravated.

[5] Ta Ngoc Châu, "Implementing universal primary education within a context of rapid population growth: the problem of regional disparities with special reference to Thailand", *Population Dynamics and Educational Development* (Bangkok, UNESCO Regional Office for Education in Asia, 1971).

[6] "Trends and prospects in urban and rural population, 1950–2000, as assessed in 1973–1974" (ESA/P/WP.54).

In countries under constant and heavy pressure to provide more and more places in schools, it is understandable that concern for investigation of new approaches tends to fall into the background. Research, testing and the introduction of innovations usually involve not only additional expenditure, but also risk of failure. Yet in the long run such measures may prove immensely important in making education more relevant, reducing inequalities, ensuring the more rational use of existing resources and bringing new and hitherto untapped sources into play. They may be the key to an entirely new concept of the purpose and means of education.

Two forms of education which have the specific aim of improving understanding of population issues—population education and population communication—are discussed further on in this chapter. First, however, an attempt will be made to summarize some of the main features relating to the impact of education on population dynamics. For although it would be unrealistic to hope in a short space to cover this complex subject more than superficially, nevertheless, of all the stratification variables, education is probably the most consistently, strongly and negatively associated with fertility.

The influence of education on population

Education and fertility

There is evidence that education is inversely related to fertility, but little is known of the extent to which education contributes to fertility decline or the way in which it does so. "Modernization" is known to be associated with lower birth rates. However, it is difficult to isolate education from the other variables that make up the modernity complex, which include the level and distribution of wealth, the proportion of the population engaged in subsistence agriculture, the availability of medical and other social services etc. The "threshold" hypothesis, put forward in the 1960s, suggests that when a developing country reaches a given social and economic level, a demographic transition from high to low fertility will occur. The World Population Conference of 1974 emphasized the importance of placing population considerations within the wider context of development and noted that excessive population growth might be an obstacle to social and economic development. Within this perspective the special interest in education lies in the hope that it may hasten the attainment of the "threshold".

In the industrialized countries fertility differentials have been diminishing between different socio-economic groups, and the variations in family size observed among the different educational groups tend to be fairly narrow. There are signs in a number of Western European countries[7] that the inverse relationship previously existing between the educational level attained and family size has recently given way to a U-shaped relationship, with the highest fertility occurring among the least educated and also among the most educated groups.[8] The evidence available for developing countries generally shows a negative association between educational attainment and fertility. Although theoretically one might postulate that these countries are at the beginning of a transition to lower fertility, following the same pattern as that observed for the industrialized world, it should be remembered that the historical circumstances are very different.

The level of educational achievement associated with a significant fall in fertility varies from country to country. Taking the educational level of the wife, data from Chile,[9] corroborated by information from other Latin American countries, Hungary and the United States of America (including Puerto Rico), suggest that a critical point is complete primary education. Data from Ghana[10] raise this threshold to the level of secondary education. For Thailand it has been observed that, for older women, even a limited education is associated with lower fertility. For younger women, most of whom had the minimum required schooling, the critical effect seems to have been felt by those who went beyond compulsory schooling, particularly those who went to university.[11] A Turkish survey,[12] based on a nation-wide sample, identifies three points at which fertility is reduced by one quarter compared with the level below: literacy, secondary education and university education.

The Turkish study further shows that the place of residence (rural or urban) exercises a strong influence and that literacy is much more closely related to lower fertility in urban than in rural areas. This finding does not necessarily mean that urban education has a greater impact on fertility. Selective migration to cities may seriously distort the relationship observed between the education and fertility of rural women in a cross-sectional study. Nevertheless, a given amount of education may be associated with different levels of fertility in different places. Similarly, it has been observed in a number of studies that the apparent effect of education on fertility varies according to whether the educational level of the husband or wife is being considered. That of the wife is more significant with regard to family size.

Very little is known about the causal relationships between education and fertility, which may be direct (e.g. resulting from a broadened outlook or increased knowledge about contraception) or indirect (as a result of higher age at marriage or the availability of alternatives

[7] Léon Tabah, "Rapport sur les relations entre la fécondité et la condition sociale et économique de la famille en Europe; leurs répercussions sur la politique sociale" in Council of Europe, *Proceedings of the Second European Demographic Conference, Strasbourg, 31 August–7 September 1971* (Strasbourg, 1971).

[8] It has been suggested that this may represent the beginnings of a trend leading to a direct positive relationship between education and fertility.

[9] Carmen Miro and Walter Mertens, "Influences affecting fertility in urban and rural Latin America", *Milbank Memorial Fund Quarterly*, vol. XLVI, No. 3 (July 1968), p. 89.

[10] S. K. Gaisie, *Dynamics of Population Growth in Ghana*, (Legon, University of Ghana, n.d.).

[11] Sidney Goldstein, "The influence of labour force participation and education on fertility in Thailand", *Population Studies*, vol. 26, No. 3 (November 1972).

[12] Serim Timur, *Socio-Economic Determinants of Differential Fertility in Turkey*, (Ankara, Hacettepe University, Institute of Population Studies, 1971). Paper prepared for the Second European Population Conference, held at Strasbourg from 31 August to 7 September 1971.

to traditional family roles etc.). A number of suggestions have been put forward, one of the most familiar of which is that, at the higher educational levels, the process of being educated delays marriage and thus leads to a smaller number of births. However, when couples have the ability to space their families, this factor becomes much less significant. Educated couples are more likely to make rational decisions about having an extra child and to consider whether large numbers of children may not reduce the opportunities, educational and otherwise, available to each one. They may also be less influenced by traditional views on fertility.[13] Certainly a positive association has been shown to exist between educational attainment and contraceptive practice.[14] Educated couples may also have a better knowledge of health practices, resulting in a lower incidence of infant mortality and freedom from the feeling that numerous offspring are necessary to ensure that the desired number survive, but it should be remembered here that extraordinary successes have been achieved through mass health measures in lowering mortality rates in the developing countries, without a significant increase in educational levels. Further, higher incomes, which are associated with higher levels of education, may increase opportunities and costs for leisure and other activities, resulting in a lowered motivation for large families.

The complexity of the issue can be illustrated by a recent study[15] that has attempted to separate the impact of education on fertility into: (a) direct effects, consisting of the influence of widening horizons and increasing contraceptive knowledge; and (b) indirect effects, consisting of the influence of labour force participation and age at marriage. Using data from the 1970 census of the United States, the study suggests that the indirect effects of education are greater at higher levels of the wife's education; the direct effects are greater at lower levels of education in most cases; the indirect effects do not vary systematically with the husband's education; the direct effects, however, do vary systematically with the husband's education if the education of the wife is low, but not if the wife's education is high.

Education can provide a means of achieving social mobility,[16] and aspirations towards social mobility frequently take the form of parents' aspirations for their children. It is probable that a couple's fertility and the school attendance of their children are negatively related because of the costs education involves (particularly at the secondary level). Even where education is financed by the State there may be significant associated expenses such as transport, books, etc., and the "economic" advantages of children, especially in rural areas, are diminished when they are attending school and cannot contribute greatly to household tasks. In many countries today the paradoxical situation arises in which, because of the increasing educational level of the population and the consequently greater competition for modern-sector employment, formal educational requirements for jobs are constantly rising, although these requirements are by no means always the ones which best correspond with a given occupation. In some situations, therefore, parents may have to make sacrifices in order to provide their children with more formal education than is practically necessary.

There is no conclusive evidence as to the degree and manner in which the employment of women leads to smaller families, although improvement in the status of women is generally associated with lower birth rates. Several studies for European countries suggest that female employment outside the home contributes to reduced fertility.[17] This appears to be the case particularly for educated women, for whom work may offer a satisfying alternative to the traditional domestic role and may be incompatible with the care of large numbers of children. It has been observed in a number of European countries that women who state that they find their work interesting have fewer children than those who are working for purely economic reasons. Findings from research in developing countries, however, give no indication that women employed in rural areas, where work is centred round the home and does not interfere with the care of children, have any tendency to desire smaller numbers of children. In the urban areas of developing countries, where economic activity is more likely to be away from the home, it is possible that employment may be linked to smaller family size, but opinions are divided on this point.[18]

More understanding of the relationship between women's employment and fertility in the context of associated variables such as education and social status would certainly be helpful in providing guidelines for female employment policies—policies which may have to take into account the fact that efforts to improve opportunities for the participation of women in economic life can be complicated by already-existing problems of unemployment.

Education and rural-to-urban migration

Existing evidence points consistently to the conclusion that rural-to-urban migrants tend to be better educated than non-migrants in the area of origin,[19] although they may have less education than the average in the place to which they migrate.[20] A number of Asian

[13] There may, however, be some grounds for the suggestion that the number of children a woman has is more likely to be affected by the size of families in her home environment than by the level of education she has attained.

[14] See, for example, David M. Heer, "Educational advance and fertility change", *International Population Conference, London, 1969,* (Liège, International Union for the Scientific Study of the Population, 1971), vol. III, pp. 1903–1910.

[15] Barbara S. Janowitz, "An analysis of the impact of education on family size", *Demography,* vol. 13, No. 2 (May 1976), pp. 189–198.

[16] Economic Commission for Latin America, "Social change and social development policy in Latin America" (E/CN.12/826).

[17] L. Tabah, *loc. cit.*

[18] For a review of the literature on this subject, see K. B. Piepmeier and T. S. Adkins, "The status of women and fertility", *Journal of Biosocial Science,* vol. 5, No. 4 (October 1973).

[19] See, for example, J. C. Caldwell, "Determinants of rural-urban migration in Ghana", *Population Studies,* vol. 22, No. 3 (1968).

[20] Several studies also show a bi-modal educational selectivity of migrants, with both the upper and the lower ends of the educational scale proportionately greater. See L. A. Kosioski, "Education and internal migration", *Education and Population: Mutual Impacts,* Helmut V. Muhsam, ed. (Dolhin, Ordina Editions, 1975).

studies indicate that the propensity to migrate tends to increase with the level of formal education achieved.[21] Where fertility is higher in the rural areas than in the towns (a pattern observed for Latin America but not consistently for Africa and Asia),[22] rural-to-urban migrants have larger families than urban residents although in subsequent generations differences tend to equal out. In the short run, migration reduces the population of rural areas simply in terms of the numbers who leave, but in the long run it has a depressing effect on fertility in these areas since it is the younger elements who are the most likely to leave.

Primary and secondary education of the conventional type, geared to the values of the urban elite and seen as a means to the pursuit of higher education, is thought to be among the causes of rural-to-urban migration. This is one of the problems to which attention was given by the International Commission on the Development of Education.

> "In many societies, exodus begins at the village. Patterns of life are copied from the towns, the educational system is based on imported school models, and both show scant concern to help the individual integrate into his environment by giving him the feeling that he belongs to a nation and a society. Together with other objectively fruitful values, they inculcate values into school children which estrange them from their surroundings, feeding intellectual and material ambitions which are becoming harder and harder to realize in a rural setting. Schools thereby push young people out towards the towns, after having helped to turn them away from their own native springs of life, which are most necessary to personality development and to the formation of a sense of national identity."[23]

Not much is known, in fact, about how much and in what way the nature of education provided in rural areas contributes to migration; motivational research among migrants is conspicuously lacking. It is, however, frequently emphasized that education for rural youth needs to be much more closely aligned to the agricultural environment, preparing individuals to take greater initiative and to acquire skills accordingly. In this respect, the participation of the educational clientele in the design of educational programmes has proved to be a positive measure.

Where educational opportunities are insufficient in rural areas (many rural schools, for example, do not include the complete primary cycle), young people may seek them in towns. Similarly, rural secondary school graduates may move away in search of more favourable employment opportunities. Japan (although not a developing country) offers a striking, if not typical example of such a situation.[24] In 1972, 75.5 per cent of the graduates of junior high schools (these schools are distributed throughout the country) were absorbed by metropolitan areas, which also accounted for 82 per cent of the university graduates.

Frequently in developing countries migrants find themselves concentrated in the fringe areas of towns or cities, maintaining their traditional way of life and remaining on the margin of urban society, with limited access to schools and regular employment. Here again research is sorely lacking, but it would seem that there is a definite place for education and training programmes to serve the special needs of migrants, to help them to acquire appropriate skills and adjust better to their new surroundings.

From the educational standpoint—and indeed from that of development as a whole—the problem needs to be seen not in terms of restricting excessive movement but in terms of ensuring that life outside the big urban centres is equally satisfying and challenging. This is evident enough, but with the force of existing aspirations, it is far from easy to achieve in practice. Individuals will always migrate, and where migration affords them greater opportunities to use their talents and skills, the gains are likely to benefit both the individual and the country. A function of education is to prepare people to benefit to the maximum from the opportunities open to them, without arousing unrealistic expectations.

One of the greatest obstacles to a deeper knowledge of the causal relationships between education and population dynamics is a lack of data and of well designed comparable studies. In studies on the relationship between education and fertility, for example, there are wide variations in the definition of educational attainment and a lack of standardization for the age of the wife or for the duration of marriage. Research is often carried out on small, unrepresentative samples. There is a serious need for large-scale comparative cross-cultural studies on the effects of education on the fertility of rural and urban populations that take into account such factors as the selectivity of educational systems, the content and quality of schooling, the effect of education on migration, the impact of education on female labour force participation before marriage and the conditioning effects of the general level of national development.

Educational programmes specially concerned with population

Family planning programmes

The purpose of family planning programmes is to provide couples with a means of determining the number and spacing of their children, whether or not reduced fertility is a stated aim. This entails the provision of clinical services, contraceptives and education in contraceptive use. It may also involve efforts to increase motivation to accept family planning (and, where policy

[21] J. S. MacDonald and L. D. MacDonald, "Latin America and the Caribbean", *Education and Rural-Urban Migration: Bibliographic Analysis*, L. A. Kosioski, ed. (Paris, United Nations Educational, Scientific and Cultural Organization, 1971).

[22] *The Determinants and Consequences of Population Trends* (United Nations publication, Sales No. E.71.XIII.5).

[23] *Learning to Be, the World of Education Today and Tomorrow* (Paris, United Nations Educational, Scientific and Cultural Organization, and London, Harrap, 1972), chap. 9, p. 246.

[24] "Recent trends and implications of rural-urban migration in Japan", *Population Dynamics and Educational Development* (Bangkok, UNESCO Regional Office for Education in Asia, 1974).

is to reduce the birth rate, to have fewer children) using mass media and the services of field workers. (For a fuller discussion of family planning programmes, see chapter III above.)

The degree of success of family planning programmes in contributing to fertility decline is not easy to assess and opinions range from the optimistic to the pessimistic. The statistical data necessary for evaluation are not always available and accurate measurement techniques still remain to be developed. Even where programmes are associated with a fall-off in the birth rate, it is hard to be certain that the drop did not simply reflect a trend already under way before the programme started. Generally speaking, however, it is fair to assume that where a fertility decline has been observed subsequent to the introduction of family planning, at least some part of the decline can be attributed to it.

At the earliest stages of a programme the greatest emphasis is usually on informing potential acceptors about the availability and use of contraceptive methods. As the requirements of "ready" acceptors are met, the tempo of recruitment slows down and a plateau is reached. Several countries are now reaching this point. The problem then shifts away from satisfying existing demand to creating new demand: where the intention is to reduce the birth rate, couples must be motivated to have smaller families. This is perhaps the greatest challenge to family planning at the present time. The crucial question is whether smaller families can be achieved in the absence of substantial advancement in the process of modernization.

There are a few encouraging signs. It has been observed that family planning "performance" within countries is associated with both the social setting (as reflected in the level of modern services, behaviour etc.), and programme effort, but that programme effort still has a significant and independent effect upon performance.[25] It has also been observed that programmes do manage to reach the lesser educated and the poor and not merely the urban élite and the wealthy.

Much research remains to be done. Progress has been made in developing education and communication techniques through research to determine effective strategies, but there is a need for far greater understanding within different family structures of the whole process of acquisition of attitudes and behaviour patterns with regard to fertility.

Population education

Population education began to expand in the developing countries during the late 1960s. Its main target has been school children and young people on the threshold of reproductive life and it has been described as "an educational process which assists persons *(a)* to learn the probable causes and consequences of population phenomena for themselves and their communities (including the world); *(b)* to define for themselves and their communities the nature of the problems associated with population processes and characteristics; and *(c)* to assess the possible effective means by which the society as a whole and each one as an individual can respond to and influence these processes in order to enhance the quality of life now and in the future".[26] There is, however, no generally accepted agreement either on the definition or the scope of population education: Latin American countries, for example, attach importance to the sex education aspect while in Asia emphasis is on population and fertility.[27] Nor has it so far been possible to make a fair assessment of how successful programmes have been in bringing about a better understanding of population issues or a change in reproductive behaviour.

If the destiny of population education is ultimately to become an integral part of every facet of the educational system, a current preoccupation is to determine where the initial focus should be. The arguments for including such education in primary education are that relatively large numbers of children can be reached in traditional rural areas, where the school may be one of the few contacts with modern life; also, it is hoped that the influence of population education programmes might extend beyond the boundaries of the rural primary school to the community in general. At the secondary level, on the other hand (where most of the existing programmes are included), pupils are closer to the age when population-related decisions have to be made. It is true that relatively smaller numbers are included in this group, which also tends to be drawn from those segments of the community where fertility is lowest. However, it is from this group that the future leaders of society—who will eventually exercise the greatest influence on national population policy—are likely to come; and it is the secondary schools which provide the next generation of teachers at the primary level, who in turn contribute to the formation of attitudes among the children for whom they are responsible. In whatever way priorities are decided, population education will need to be included in teacher training curricula, perhaps within the context of forward-looking "development studies". Further, as pointed out by the Economic and Social Council at its fifty-second session, in 1972, "special attention must be given to facilitating the process whereby improved curricula actually become implemented in teacher-training institutions and existing school systems".[28]

Outside the formal educational system is the large group of out-of-school youth, who are usually the least likely to benefit from socio-economic progress. How to reach them will have to be urgently considered. There are also adults for whom population education may be

[25] Ronald Freedman and Bernard Berelson, "The record of family planning programs", *Studies in Family Planning*, vol. 7, No. 1 (January 1976).

[26] Stephen Viederman, "Towards a broader definition of population education", *International School Science Journal*, vol. XXVI, No. 2 (1974).

[27] See, for example, Noel-David Burlëson, "Population education: problems and perspectives", *Educational Documentation and Information (Bulletin of the International Bureau of Education)*, No. 193.

[28] Report of the Advisory Committee on the Application of Science and Technology to Development on Science and technology and problems of population growth (E/5107), p. 33.

provided through literacy, community development or agricultural extension programmes, and in other ways. A further potential target group is composed of government administrators, planners and policy-makers.

The settings in which population education has a potential role are thus highly diverse, both between countries and between different groups, and strategies and content have obviously to be devised with the particular requirements of each in view. One criticism of programmes to date is that they have often been over-academic and unsuccessful in developing a sense of the personal relevancy of population issues. This calls for a greater effort to create an understanding of the ways in which population dynamics affect an individual in his own life, in particular the ways in which the decisions he will have to make—when to marry, how many children to have, whether to migrate—are related to the quality of life within his family, his community, his country and the world as a whole. Research leading to further understanding of the elements to be taken into account in designing population education programmes has been identified as including study of the socio-cultural characteristics of communities and their attitudes to population questions, of the process of population socialization and the sources and channels of population information, and of the different contexts in which population education could be usefully introduced.[29]

Conclusion

Education and population dynamics are two elements of the intricate complex of factors that condition human development. For this very reason they cannot be considered in isolation, but only in the context of over-all social and economic development.

One clear fact that emerges from a quantitative analysis of education and demographic trends in the developing world is that even if birth rates decline significantly it will still be a formidable task to provide education for all those of school age before the end of the century. This calls for a concerted effort to seek out new forms and techniques of teaching, to bring untapped resources into play, and to use existing resources more efficiently. The goal of education for all, it should be emphasized, is important not only for reasons of equity but to make possible effective popular participation in national development.

Regarding the relationship between education and fertility, there is no certain evidence that education is a direct cause of declining birth rates. Indeed, when an educational system based on alien values and conditions is grafted indiscriminately on to a culture with traditional pride in large families, there is no reason to expect, in the absence of other influences, an automatic reduction in fertility. More understandably, such an educational system may stimulate migration. Educational systems have generally been geared to the needs of the modern sector and have correspondingly aroused expectations of employment in this sector, expectations which have been frequently frustrated because of the excess of labour supply over demand. The needs of the traditional sector have, on the other hand, been largely neglected. In order for education to become more relevant, it must be redesigned to meet the requirements of the rural milieu, where the majority of the population in the less developed countries resides. This implies the integration of education and training within an over-all programme of rural development, and may result in the creation of conditions that favour changes in reproductive patterns.

An understanding of the interaction between population and social and economic aspects of development is essential for educational planning. This need is often recognized in theory, but in practice both planning and administration tend to be compartmentalized, with resulting incongruities and lack of co-ordination between different sectors. Educational planners, for example, do not always have access to demographic expertise to enable them to appreciate the policy issues posed by rapid population growth and migration, and to take account of the implications of change in the size, structure and geographical distribution of the school-age population.

Educational planners need reliable demographic data as a basis for planning. The data required include detailed projections of population growth, as well as accurate information on the distribution of the population by urban and rural residence and on migration trends. Also needed are data on the educational attainment of the population and on the current distribution of educational facilities by type and quality. If inequalities in education are to be bridged (between urban and rural areas, girls and boys in school and out-of-school youth, different social and ethnic groups, etc.) planners also need to have information on the requirements of different localities and groups.

Much remains to be known both about the nature of the population-education relationship and the means for appropriate action. Large-scale, comparative, cross-cultural studies investigating the reciprocal effects of education and fertility will be necessary before it is possible to ascertain the type and amount of education in different development conditions required to bring about desired change in fertility patterns.

Other uncertainties relate to the associations between education and migration and the effects of migration both in the area of origin and in the area of destination. More requires to be known about the process of "population socialization" and how changes in family structure and the status of women affect family-size norms. A greater understanding of these factors should help in designing more effective programmes for population education and in devising communication strategies to bring about changes in desired family size. These are only some among many promising fields for inter-disciplinary research.

New educational techniques and approaches need to be investigated urgently so that education may become

[29] *Population Education: A Contemporary Concern,* United Nations Educational, Scientific and Cultural Organization Educational Studies and Documents Series, No. 28 (1978).

relevant and more accessible to large numbers of individuals. Here the experience of different countries can usefully be examined. Even where large-scale innovations are not envisaged, an attempt can be made to identify those points of entry in national development policy where educational reforms are most pressing, and to initiate experimental programmes accordingly. Finally, it is only when there is genuine understanding of the ways in which population and education are related to each other and to development as a whole, that appropriate action can be taken.

B. Population and food*[30]

In the early 1970s there was some pessimism about the ability of food production to keep pace with population growth. Some experts still believe that events of recent years may be indicative of structural changes in the world food supply and demand equation and that the world may be approaching a point where population growth and the need for food will outstrip the world's capacity to produce food. But most authorities are inclined to trace recent food shortages to specific factors and think that the potential for expanded food production in both the more developed and less developed countries is far from exhausted. Over the past quarter of a century, global food production has increased considerably. However, the increases have been matched by population growth and the expanding dietary demands of the advanced developed countries. In addition, the relative scarcity of arable land, water, fertilizers and energy, and the declining trends in international food reserves, have led to soaring food prices and have hampered efforts to overcome hunger and malnutrition.

*Prepared by the Food and Agriculture Organization of the United Nations and the Population Division of the United Nations Secretariat.

[30] The geographical regions referred to in this section comprise the following countries: *Western Europe*—Austria, Belgium, Denmark, Finland, France, Germany, Federal Republic of, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, Yugoslavia; *North America*—Canada, United States of America; *Oceania*—Australia, New Zealand; *Other regions*—Israel, Japan, South Africa; *Eastern Europe and USSR*—Albania, Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland, Romania, USSR; *Latin America*—Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay, Venezuela; *Africa*—Algeria, Angola, Benin, Botswana, Burundi, Central African Empire, Chad, Congo, Ethiopia, Gabon, Gambia, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Niger, Nigeria, Rhodesia, Rwanda, Senegal, Sierra Leone, Togo, Tunisia, Uganda, United Republic of Cameroon, United Republic of Tanzania, Upper Volta, Zaire, Zambia; *Asia and the Pacific (Far East)*—Bangladesh, Burma, China, Democratic Kampuchea, Democratic People's Republic of Korea, Democratic Yemen, India, Indonesia, Lao People's Democratic Republic, Mongolia, Nepal, Pakistan, Peninsular Malaysia, Philippines, Republic of Korea, Sri Lanka, Thailand, Viet Nam; *Western Asia (Near East)*—Afghanistan, Cyprus, Egypt, Iran, Iraq, Jordan, Lebanon, Libyan Arab Jamahiriya, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Turkey, Yemen.

Basic themes

The direct relationship between the size of a population and its food requirements appears to be obvious. All other things being equal, a 3 per cent increase in population, for example, ought to generate a 3 per cent increase in the demand for food. However, while human beings can survive on a wide range of diets, they have tended to convert grain and other plant materials into animal protein products as their income increases, and it takes about seven plant calories to produce one calorie of meat and fat protein. The precise effects of rising income on changing dietary habits are not fully understood. One can nevertheless perceive some effects of rising income in differing patterns of *per capita* grain consumption. In the poor, less developed countries, about 200 kilograms of grain are available *per capita* each year and almost all of it is consumed directly by people. In rich areas like North America, direct individual consumption of grains amounts to only about 100 kilograms a year, but indirect consumption of grains in the form of meat and dairy products raises the annual *per capita* consumption to about one ton. This is on the order of five times the average *per capita* consumption in the less developed countries. While rapid population growth and rising income are both major sources of increased food demand, the former is the dominant factor. In the less developed countries, population growth accounts for about 70 per cent of the increase in food demand. Population growth is also the dominant factor in many more developed countries, because very little of the increase in income is spent on food. In any event, the combined effect of population growth and rising income is a demand for food that is accelerating at an unprecedented rate.

Human physiological requirements for food are directly related to sex, age, body weight, occupation and physical activity. On the basis of the limited information available on the world-wide distribution of food, FAO has recently estimated that, excluding the population of the centrally planned Asian economies, more than 460 million people suffer from protein-calorie malnutrition. It is generally recognized that nutritional deficiencies affect health, physical growth and the working capacity of the population. In the more developed countries, the great majority of the population escapes nutritional diseases caused by poor sanitation and an insufficient intake of protein and calories. Instead they suffer nutritional diseases of "affluence". The consumption of excess calories, in the form of fats and sugar, combined with general physical inactivity, leads to a high prevalence of diabetes, hypertension and heart disease. These diseases are responsible for the largest number of deaths in the developed countries.

In the developing countries, on the other hand, where nutritional diseases are caused by inadequate food and undernutrition, relatively high morbidity and mortality prevail, particularly among the most vulnerable groups such as infants. Among the young, undernutrition may seriously affect physical growth and mental development. Among adults, undernutrition can cause population redistribution by inducing individuals to migrate

from high-density to low-density areas, if access to food and economic opportunity would thereby be greater. Some countries, such as Bangladesh, failing to keep up with the food demand generated by rapid population growth, have experienced a perceptible decline in *per capita* food availability and consumption. In these countries, calorie and protein levels have been maintained near minimum physiological requirements through increasingly large imports of food and aid.

The importance of poor nutrition as a factor underlying the high mortality rates in the less developed countries is generally recognized. A WHO study of childhood mortality found that nutritional deficiencies were the most important factors contributing to excessive mortality in all 13 of the Latin American projects. This condition was often found to be linked with low weight at birth. In 57 per cent of the children who died under the age of 5, immaturity (deficient weight and development at birth) or malnutrition was present as either the underlying cause of death or an associated cause.[31] Immaturity is in turn a frequent product of maternal malnutrition. The problem also appears to be severe in Africa, although the data are inadequate. Diet supplementation programmes in Peru and Guatemala reduced child mortality considerably but without significantly affecting the indices of child physical development. Despite the improvement, mortality and morbidity in the Guatemalan villages remained very high because of the prevalence of infectious diseases among children. Infectious diseases themselves are an extremely important source of malnourishment, whatever the child's nutritional state at the time of attack may be. This is because infection increases metabolic demands but often reduces the absorption and increases the excretion of nutrients. Infections among women can reduce infant birth weights and mothers' milk production.

The use of human milk (breast-feeding) seems to have begun to decline among the populations of many less developed countries. This has been recognized as a serious threat to the nutritional status and health of infants. Numerous studies have demonstrated that breast-feeding—which is generally ignored as a valuable food resource in economic and nutritional planning—has anti-infective properties.[32] Breast-feeding can also influence the spacing of children and therefore family size. It is estimated that 5 million births per annum are prevented in India as a result of breast-feeding.

In 1972, for the first time for 25 years, there was a significant decline (of 35 million tons or about 3 per cent) in world cereal production. Demand, however, continued to increase, partly because of the continuing increase in the world population and partly because of the continuing increase in meat consumption (particularly beef consumption in Europe, the USSR and Japan). Currently, the world production of cereals, totalling about 1.2 billion tons, has to increase by about 30 million tons per year to meet the rising demand. In 1972, the real shortfall was nearly 60 million tons or about 6 per cent. As a consequence, world cereal reserves have been declining and by 1974 they were down to a dangerously low level of about 33 days. At the same time, cereal prices rose sharply. By December 1973, the price of Thai rice was nearly four times the 1971 price, and the price of wheat was three times as high. With the substantial decline in stockpiles due to bad weather and significant export sales, international food aid dropped from 14 million tons in 1970 to 7 million tons in 1974. These events have been particularly hard on the poorer segments of the populations of the less developed countries. Since 1973, the poor countries have been subjected to another blow: the quadrupling of oil prices, which in turn, has caused considerable increases in the costs of irrigation, water and fertilizers, for example, on which an adequate diet depends.

As income (or expenditure) increases in the less developed countries, the demand for food, or more precisely the elasticity of demand for food, tends to increase. Studies carried out recently by FAO in a number of Latin American countries have revealed that changes in patterns of income distribution will have important implications for the demand for food. According to other studies, between 1953 and 1971 the average *per capita* food consumption in the developing nations (Africa, Latin America and the non-centrally-planned economies of Asia) increased by 0.3 per cent per annum. In the same period, the average *per capita* income in the same developing regions rose by 1.85 per cent per annum. Therefore, only about 16 per cent of the average increase in *per capita* income was reflected in the increased *per capita* food consumption. This would appear to be inconsistent with the idea that the elasticity of demand for food for these countries is, as a rule, more than 50 per cent of their income increment. However, one possible explanation lies in the assumption that increased income has been almost entirely allocated to the upper-income groups, who do not generally spend much of their additional income on food.

The impact of urbanization on food consumption and demand is equally important because in most cases the demographic characteristics of urban populations differ from those of rural populations. The findings of several household studies indicate that the expenditure elasticities for food in rural areas differ from those of urban populations and that consumption patterns differ from one occupational group to another. In urban areas, for example, elasticities tend to be lower for cereals and often a little higher for meat and high-quality food in comparison with rural areas. Recent studies carried out in Japan—the most highly urbanized country in the Far East—suggest, however, that there are trends towards the equalization of calorie intakes in urban and rural areas.[33]

[31] World Health Organization, "Childhood mortality in the Americas", *Chronicle* of the World Health Organization, vol. 28, June 1974, pp. 276–282.

[32] See, for example, N. S. Scrimshaw, C. E. Taylor and J. E. Gordon, *Interactions of Nutrition and Infection*, World Health Organization Monograph Series, No. 57 (Geneva, 1968); see also Derrik B. Jelliffe and E. F. P. Jelliffe, "Human milk, nutrition, and the world resource crisis", *Science*, vol. 188 (9 May 1975), pp. 557–561.

[33] Food and Agriculture Organization of the United Nations, *Income Elasticities of Demand for Agricultural Products*, Projections Research Working Paper No. 1 (Rome, 1972), pp. 98ff.

On the supply side, during the past quarter of a century noticeable progress has been made in global food production. In the more developed regions, the population continued to advance at a slightly declining annual rate of about 1.0 per cent, while food production grew at a rate fluctuating around 2.8 per cent per annum. Thus, the growth rate of *per capita* food production was about 1.8 per cent per annum. In the less developed countries, however, the rate of population growth was approximately 2.4 per cent per year and the rate of food production declined continuously. As a result, the *per capita* growth rate of food production continuously declined and turned negative in the early 1970s. In the 1950s and the 1960s, food production in the developing regions barely kept ahead of population growth but the small gains were not evenly distributed among the various regions. Africa, for example, suffered the poorest food production. During the early 1970s, when for the first time in decades the rate of growth of food production dropped below that of population, African output *per capita* declined by 2 per cent.

Food production can be seriously disrupted by bad weather and climatic variations. At times this can cause food supplies to lag behind population growth and demand. Until the early 1970s, there were frequent references to the fact that technology had advanced to such an extent that weather should no longer be expected to have a damaging impact on agricultural production. However, because of widespread bad weather in 1965, 1966 and 1972, food production, particularly in the developing countries, deteriorated seriously. The weather in 1972 was exceptionally bad in both developed and developing countries. Then, for the first time since the Second World War, world food production declined in absolute value by 35 million tons, while the annual average world consumption of foodstuffs increased by about 30 million tons.

Until recently, the world has been enjoying a comfortable margin of food security and price stability owing to surpluses of food reserves and the potential of idle cropland, mainly in North America. During the 1960s and early 1970s, for example, some 50 million acres out of a total United States cropland base of 350 million acres was held out of production to support prices. In the early 1960s, the combination of reserve stocks of grain in all exporting countries and the grain equivalent of the idle croplands in the world amounted to approximately 105 days of world grain consumption. By 1972, however, reserves were reduced to 69 days. Thereafter, stocks continued to fall sharply, to 55 days in 1973 and 35 days in 1975. Although all of the idle cropland in the United States of America has been released for production since 1973, food reserves have not yet been completely replenished, partly because of the considerable food demand in the international market.

Trends in international trade in grain cereals have drastically changed direction in recent decades. Before the Second World War, all of the world's regions, with the exception of Western Europe, were net exporters of grain. By the mid 1970s, all the regions, except North America and Oceania, had become net food importers. Population growth played a leading role in bringing about these changes. An analysis of disaggregated country data shows that the world today consists almost entirely of food deficit countries. For example, Mexico was until recently a grain-exporting country. During the period 1965–1969, Mexico exported 10 per cent of its grain production, but it was soon overwhelmed by one of the world's highest rates of population growth. By the mid 1970s, it was importing one fifth of its grain requirements. The Philippines provides another illustration. Owing to the advent of the "green revolution", the Philippines succeeded in ending half a century of dependence on rice imports, to become a net exporter of rice in the late 1960s. Today, however, it is again a net importer, as the food trade surpluses that were made possible by green revolution technology were in the long run offset by rapid population growth. Between 1949 and 1972 the gross imports of cereals by developing countries rose from 12 million tons to 36 million. Before 1972, between a third and a half of this tonnage was obtained under United States and other food assistance programmes. Although food aid has been justifiably criticized because it has tended to discourage domestic agricultural investments, there can be no doubt that it has contributed substantially to the increase in *per capita* food supplies and consumption. It has thereby improved the average nutritional level of diets and the benefits of this have been reflected in the significant rise in life expectancy (of between five and 10 years per decade in many countries).

The stability of food supplies and prices during the two decades prior to the 1970s was the result of an uninterrupted growth in production, the existence of large grain stockpiles, the absence of severe weather and the free movements of food through trade and aid. While evidence is not conclusive to support calamitous predictions of climatic changes, events of 1972 and 1974 nonetheless demonstrated that adverse weather conditions can significantly reduce food production. In "normal" weather, however, the main sources for the potential expansion of the food supply are to be found in the expanded use of land, water, fertilizer and energy, and in a number of factors that are social, political and environmental in character.

As for land, the world is currently cultivating but a small proportion of the land that might be made available. The land surface of the earth, outside the ice-covered Antarctica and Greenland, has an area of 13 billion hectares, but only about 3.2 billion hectares of it is currently considered to be potentially arable land. The latter is more than twice the area currently being cultivated (about 1.4 billion hectares) and about four times the area actually harvested in any given year. It may be noted that the area of 3.2 billion hectares of arable land includes about 0.5 billion hectares in the humid tropics, which cannot at present be adequately cultivated with known technology and engineering methods.

There are essentially two methods of expanding the world food production from the land itself. One is to expand the area under cultivation, which was the characteristic method prior to 1950. The other is to raise

yields through the use of modern technology. Intensification of cultivation has increased steadily since 1950. During the early 1970s, it accounted for about four fifths of the annual growth in world food output, far surpassing the expansion of the cultivated area. Population pressure has been responsible in some countries for the transition from the area-expanding method of increasing food production to the yield-raising method.

In many parts of the world (both more developed and less developed), the available good agricultural land is constantly diminishing as a result of population pressure and the needs for housing, highways, recreation facilities and industrial and urban development. In the past two decades, urbanization, highway construction and other special uses have annually taken up more than 1 million hectares of arable land in the United States and more than 20,000 hectares of cultivated land in Japan. The Indian subcontinent, Western Asia, the Sahel zone in Africa and the Amazon basin in Latin America have also been losing considerable agricultural land each year because of soil erosion, deforestation and desertification caused essentially by man's pressure on the food-producing ecosystem. Deserts, in particular, have been advancing as a result of the destruction of natural ecosystems by over-cultivation, over-grazing and the expanding use of wood for fuel. Desertification caused by man's misuse of land is estimated at about 6.7 per cent of the earth's surface—an area larger than Brazil. The scale and rapidity of the ecological deterioration of the Sahara has been most alarming. The initial southward movement of the Sahara affected only the seven sparsely populated countries on the desert's immediate southern fringe, having a total population of about 27 million (Chad, the Gambia, Mali, Mauritania, the Niger, Senegal, and the Upper Volta). But as the movement has continued it has affected several more densely populated countries, including Nigeria and Ethiopia.[34] Despite all this, it would seem that the amount of potentially arable land remaining is still large, particularly in the developing countries.

The rapid increase in the demand for water presents many problems. Since water can no longer be taken for granted, it is becoming increasingly apparent that water should be viewed as an economic input in the evolving relationship between a constant water supply and dynamic demand. Although water statistics are still in their infancy and localized in nature, there is every reason to believe that the current increase in the demand for water will continue. The most important factor is probably the growth of population, which, on the assumption of a growth rate of 2 per cent per annum, could double the demand for water every 35 years.

In many parts of the world, additional agricultural land could be made available if adequate irrigation could be provided. Slightly more than 1,000 cubic kilometres—less than 4 per cent of the total world river flow—now irrigates about 200 million hectares. About 10 times that amount of water is evaporated and transpired each year from the remaining 1.2 billion hectares of the earth's cultivated lands. Most river waters flow to the sea almost unused by man. For example, Latin America, with less than 15 per cent of the earth's land area, accounts for a third of the run-off, whereas South-West Asia, North Africa, the south-western United States, Temperate Latin America and Australia, with 25 per cent of total land area, account for less than 5 per cent of the total run-off. Agriculture is the largest user of water, accounting for some 80 per cent of world consumption. The results of a recent world-wide survey covering 103 countries with a total irrigated area of about 200 million hectares revealed that the proportion of irrigated areas to total cultivated areas was 100 per cent in two countries (Egypt and north-western Nigeria), that it exceeded 50 per cent in five others (China, Guyana, Iraq, Japan and Madagascar), and that it exceeded 20 per cent in 15 more countries (Albania, Chile, India, Indonesia, Iran, Israel, Jamaica, Mexico, Pakistan, the Republic of Korea, Saudi Arabia, Sri Lanka, Suriname, Swaziland and Thailand).[35]

Many technological devices are being used either to desalinate water or to replace water in the hydrological cycle. Of the various known technologies, so far desalination is the only one to have produced significant, if modest, results. A few islands and countries, such as Kuwait, derive virtually all their fresh water from desalination plants. Between 1961 and 1971, the output of large desalting plants from brackish or ocean water expanded at an annual rate of 18 per cent. By 1975, the number of plants of at least 100 cubic metre capacity had increased to 1,036, and the world capacity had risen to 2.1 million cubic metres. The environmental effects of irrigation can include morbidity due to water-borne diseases, especially in the tropical countries. Domestic water supplies are hazardous to the health of at least one quarter of the world's population. Thus, the trade-off between the benefit of extra food production and the cost of morbidity and mortality to a population as a result of health hazards involved in irrigation should be carefully monitored. On a global basis, the potential for irrigation development would appear to be considerable, although there is a limitation due to the geographic distribution of river systems whose water can be made available at present engineering costs.

In order to expand the world food supply to meet population growth and demand a substantial increase is needed in the amount of energy available. In order to increase yields, modern food and agricultural technology has become more and more energy-intensive. Recent investigations have revealed that in the past 50 years energy inputs in food systems throughout the world have increased significantly. In the United States of America, for example, energy inputs at the farm level more than tripled, and the over-all ratio of output to

[34] Food and Agriculture Organization of the United Nations, *Etude prospective pour le développement agricole des pays de la zone sahélienne, 1975–1990: le système d'exploitation agricole,* vol. I, *Rapport principal* (Rome, 1976), pp. 58–66.

[35] International Commission on Irrigation and Drainage, *Irrigation and Drainage in the World* (New Delhi, 1969), as cited in *The Demand for Water* (United Nations publication, Sales No. E.76.II.A.1), pp. 82–84.

input, in terms of energy, decreased from 3.7 in 1945 to about 2.8 in 1970. During this period, however, the average yield per acre of corn more than doubled, from 34 bushels in 1945 to 81 bushels in 1970. In both traditional and modern food systems the energy expended in food processing, distribution and cooking is much greater than the energy expended in food production. For example, in rural India, about twice as much fuel energy is used to cook a kilogramme of rice as the amount of food energy in the rice. Of the energy currently used in the food system in the United States (which is between 12 to 15 per cent of total annual energy consumption), more than twice as much energy is consumed outside the farms in processing, packaging, transporting, distributing, refrigerating and cooking food as the farmers use to grow it.

Until recently, the expansion of food output could be achieved through modernization of the food system by increasing energy inputs while the farm population decreased. The agricultural population in the United States, for example, declined from 30 per cent of the total population in 1920 to 4.4 per cent in 1974. However, recent studies suggest that in the future it will be more difficult to substitute energy-intensive cultivation for further reductions in the farm populations. Changes will be required, and in practice it can be expected that, as energy becomes more and more costly, countries will be induced to seek alternative food systems that require less energy. Since a substantial amount of energy is used in food systems after the food leaves the farm, considerable energy could be saved by modifying the methods of food transportation and distribution and by convincing people to eat less processed food.

The present high prices and anticipated exhaustion of fossil fuels raise serious questions whether the energy-intensive methods of food production used in the more developed countries can be either sustained or transferred to other parts of the world. In principle, most of the energy needed in modern high-yield agriculture could be provided by the farmers themselves. For every ton of cereal grain there may be as much as two tons of humanly inedible crop residue with an energy content that is considerably greater than the food energy in the grain. If only half of this energy could be recovered by fermentation of methane or alcohol, the energy requirements for modern agriculture, including energy for production of chemical fertilizers, could be adequately satisfied.

A comparison of a simple natural food system with a complex energy-intensive-technology food system indicates that each unit of energy used in the former system provides from 5 to 50 units of food energy whereas the latter may require from 5 to 20 energy calories to produce a single food calorie. Studies of "primitive" food systems indicate that for each calorie of energy invested one can acquire more than 50 food calories.

The increased use of energy and green revolution agriculture have successfully increased crop yields but they could also cause a number of demographic, social and environmental problems. For example, in the United States of America, the ratio of the non-farm population to the farm worker increased from 10 persons in 1930 to 45 in 1973. This may involve important changes in the social and economic structure of a country as the untrained and unskilled farm population migrates to crowded cities, which are normally short of housing facilities, adequate health conditions and employment opportunities. In addition, the cost to the environment could be significant in view of possible deterioration caused by depleted soil, pollution, and disruption of the natural ecosystem of plant and animal populations.

Population growth and improvement in dietary standards and habits accompanying socio-economic growth are expected to increase substantially the demand for food during the rest of the century. Fertilizers and pesticides are expected to make important contributions to meet this demand. In the absence of alternative technologies, about 200 million metric tons of nitrogen fertilizer will be required annually by the end of the century—as opposed to only 3.5 million metric tons 25 years ago and 40 million in 1974. Recent shortages and high prices of fertilizers have been important obstacles in achieving expanded food production. During the past decade and a half, fertilizer output has increased at a rate of less than 13 per cent per annum in the developing countries (the centrally planned economies excepted). In the developed countries it has increased at about half that rate. However, in the early 1970s, the more developed regions were still using as much as four times the amount of fertilizer used in the less developed regions. The amount of food produced for each additional ton of fertilizer applied is beginning to diminish world-wide, largely because of the high levels of use in such areas as North America, Western Europe and Japan. The recent scarcity and high prices of fertilizers have created renewed interest in the potential use of organic fertilizers, which, as estimated in 1970–1971, contain 7 or 8 times the nutrient content of chemical fertilizers. Other technologies, such as the planting of legumes like soybeans and pulses, with their nitrogen-fixing properties in the roots, are also being considered.

New strategies for pest control continue to offer hope for a reduction in costs, lower energy requirements and fewer deleterious effects on the environment. Hand application of pesticides requires more labour than machine or aircraft application, but it also reduces the energy expenditure from about 18,000 calories per acre to only 300. It is generally recognized that direct losses of food from pests could be substantially reduced, perhaps by 30 to 50 per cent, by making better use of available technology. The result could mean an increase of 10 to 15 per cent in the world food supply without bringing new land into production. The increasing use of chemical fertilizers and pesticides to produce more food also produces run-off that damages health, land, water, atmosphere, food chains and other environmental amenities. However, the ecological deterioration caused by human activities in agriculture is much more likely to occur through the expansion of traditional agriculture than through energy-intensive modern agriculture, which tends to improve the environment.

A number of recent studies of small farms in the developing countries have shown that farmers can produce considerably higher yields of food per hectare with proper labour-intensive techniques than with large-scale mechanization. For example, the output per hectare in Guatemala, Brazil and India was found to be substantially greater on smaller farms than on larger ones. Small-scale operations, therefore, do not necessarily constitute obstacles to raising agricultural yields. The question is how to achieve conditions conducive to high yields and expanded total food production to meet expanding population needs. The recent shifts in policy by the World Bank and the United States Agency for International Development, whereby priority is now given to studies on agricultural population and rural development, are designed to achieve these objectives. In the last few years the Bank has published a series of policy papers on the subject and has expanded substantially its lending-for-action programmes in rural development. This is reflected in the fact that half of all the rural development lending in the history of the Bank occurred in 1974. Also, the newly formed International Fund for Agricultural Development of FAO and the Arab Authority for Agricultural Investment and Development established by the Organization of Petroleum Exporting Countries are concentrating their efforts on developing agricultural resources and improving rural life. The latter organization is especially interested in developing the resources of the southern Sudan, which is considered to be potentially one of the world's richest agricultural regions.

In most developing countries, the progress achieved in food production on small farms could contribute simultaneously to the solution of several critical problems. It could help to improve patterns of income distribution, increase employment levels, reduce, if not stop, trends in urbanization, curtail energy requirements and expand country, regional and global food supplies. This could have a further important implication: as various studies indicate, an integrated rural development programme, which aims at a more equitable distribution of the benefits of economic progress among various groups of the population, could create a new social environment and provide the motivation required for modern population development.

Factors affecting food demand

A distinction should be made at the outset between the physiological requirements of a population, on the one hand, and the demand for food, on the other. Physiological requirements are based on nutritional standards in calories, protein and other, minor nutrients. Food demand, however, is the quality and quantity of food consumed by a given population. The effective demand depends primarily on food prices, average income and the size of the population. If the income of the majority of the population, in the developing countries for example, rises faster than food prices, food demands will increase. Conversely, if food prices rise faster than income, the effective demand will decrease and may drop below the critical level where the diet of most people will not meet nutritional requirements.

Food production in relation to population growth and demand

During the 1950s and 1960s, the rate of growth of food production was the same in both the more developed and the less developed regions. The rate of food production declined from an average of 3.1 per cent during the first decade to 2.7 per cent during the second. However, during the two decades the population of the less developed regions grew nearly twice as fast as that of the more developed regions. Food production kept ahead of population in all regions of the world, but the margin was smaller in the 1960s than it had been in the 1950s, and it was much smaller in the developing than in the developed regions (see table 59). In the first four

TABLE 59. PERCENTAGE RATES OF GROWTH OF FOOD PRODUCTION IN RELATION TO POPULATION, WORLD AND MAIN REGIONS, 1952-1962, 1962-1972 AND 1970-1974

	Annual average percentage growth of population			*Annual average percentage growth of food production*					
				Total			Per capita		
	1952-1962	*1962-1972*	*1970-1974*	*1952-1962*	*1962-1972*	*1970-1974*	*1952-1962*	*1962-1972*	*1970-1974*
World	2.0	1.9	1.9	3.1	2.7	2.1	1.1	0.8	0.2
Developed regions	1.3	1.0	0.9	3.1	2.7	2.8	1.8	1.7	1.9
Developed market economies	1.2	1.0	1.0	2.5	2.4	2.3	1.3	1.4	1.3
Western Europe	0.8	0.8	0.7	2.9	2.2	2.5	2.1	1.4	1.8
North America	1.8	1.2	0.9	1.9	2.4	1.9	0.1	1.2	1.0
Oceania	2.2	2.0	1.6	3.1	2.7	3.5	0.9	0.7	1.9
Eastern Europe and USSR	1.5	1.0	0.8	4.5	3.5	3.6	3.0	2.5	2.8
Developing regions	2.4	2.4	2.3	3.1	2.7	1.7	0.7	0.3	-0.6
Developing market economies	2.4	2.5	2.6	3.1	2.7	1.5	0.7	0.2	-1.1
Africa	2.2	2.5	2.7	2.2	2.7	0.7	–	0.2	-2.0
Asia and the Pacific	2.3	2.5	2.5	3.1	2.7	1.2	0.8	0.2	-1.3
Latin America	2.8	2.9	2.9	3.2	3.1	1.9	0.4	0.2	-1.0
Western Asia	2.6	2.8	3.0	3.4	3.0	3.2	0.8	0.2	0.1
Asian centrally planned economies	1.8	1.9	1.7	3.2	2.6	2.1	0.4	0.7	0.4

years of the 1970s, population growth outstripped food production in all developing regions except the Asian centrally planned economies (where population growth had slowed down considerably) and Western Asia (where the rate of growth of food production had been fairly high). In the meantime, the growth rate of most of the developing regions increased slightly. In the more developed countries, however, the rates of population growth, already much lower than those of the developing countries, continued to decline while the rate of expansion of food production remained high—even during the early 1970s, when there were poor harvests.

The rates of growth of *per capita* food production in the developing countries fell from 0.7 per cent in the 1950s to 0.3 per cent in the 1960s and then to as low as – 0.6 per cent in the early 1970s. In recent years, Africa, the Far East and Latin America have experienced significant declines in the *per capita* growth rate of food production. It may thus be stated that in the early 1970s a point was reached where, due mainly to poor harvests and also to continuing population growth, the rate of growth of food production was depressed for the first time, much below the rate of growth of the population. In the more developed countries, on the contrary, the rate of growth of *per capita* food production remained about the same, fluctuating around 1.8 per cent during the past quarter of a century.

The vulnerability observed at the global and regional levels becomes more apparent at the country level. Table 60 shows that, out of 86 developing countries for which data are available, the increase in food production (f) failed to match population growth (p) in 39 countries (representing approximately 23.9 per cent of the total population considered). The increase in food production equalled or exceeded demand in only 27 of the countries, representing 20 per cent of the population).

TABLE 60. RELATIONSHIPS BETWEEN GROWTH RATES OF FOOD PRODUCTION, POPULATION AND DEMAND FOR FOOD AMONG 86 DEVELOPING COUNTRIES, 1961–1974

Relation[a]	Number of countries	Population	
		Number (millions)	Percentage of total
Total	86	1 808	100.0
$f<p$	39	431	23.9
$f<d$	37	428	23.7
$f\geq d$	2	3	0.2
$f\geq p$	47	1 377	76.1
$f<d$	22	1 017	56.3
$f\geq d$	25	359	19.8

[a] The notations f, p and d stand for the average rate of growth of food production, population and domestic demand for food respectively over the period 1961–1974.

In a large number of the developing countries, including many of those with the biggest populations, food production is lagging behind population growth and demand. The extent to which such problems have actually been caused by rapid population growth is difficult to ascertain in the absence of detailed studies. In the meantime, by arranging the available data for 96 developing countries according to their average rate of population growth, as is shown in table 61, it appears that the failure to increase food production with respect to population growth is independent of the rate of population growth. Countries where the increase in food production has either lagged behind or exceeded population growth are found at every level of population growth.

The trends in food production discussed above do not reflect fully the trends in food supplies, because external trade and changes in stocks have not been taken into account. Annex table 174 summarizes trends in the international trade of cereals. The most alarming changes have occurred in recent years. During the 1960s, the outstanding feature was a large surplus of world grain stockpiles, which were found mainly in North America. During the 1970s, however, cereal stocks were reduced abruptly, to a point where they are now hardly sufficient to ensure world food security or price stability. The widespread bad harvests of 1972 and the resulting rises in import demand have also caused sharp fluctuations in the world cereal supplies. For example, from 1971–1972 to 1972–1973, the volume of world trade in cereals soared by 21 per cent while cereal stocks in the main exporting countries were reduced by 35 per cent. The changes in trade and the fall in stocks were caused by harvest shortfalls in the major exporting countries as well as by drastic changes adopted in food strategies. Although 1973 was a good crop year, most of the crops went out of the main exporting countries and their stockpiles were reduced by a further 18 per cent in 1973–74. This took them to the lowest level since the 1951–1952 season. With poor harvests in Asia and North America in 1974, and in Eastern Europe and the USSR in 1975, there was a tendency for

TABLE 61. RELATIONSHIPS BETWEEN POPULATION GROWTH AND FOOD PRODUCTION AMONG 96 DEVELOPING COUNTRIES, 1961–1974

Average annual growth rate of population, 1961–1971	Growth in food production (f) in relation to population growth (p)					
	f < p			f ≥ p		
	Number of countries	Population		Number of countries	Population	
		Number (millions)	Percentage of total		Number (millions)	Percentage of total
Total	45	544	19.7	51	2 211	80.3
Less than 1.5	2	3	0.1	3	2	0.1
1.5–1.9	3	28	1.0	2	826	30.0
2.0–2.4	17	175	6.4	13	684	24.8
2.5–2.9	9	118	4.3	14	405	14.7
3.0–3.4	11	120	4.4	17	226	8.2
3.5 and over	3	100	3.6	2	68	2.5

stocks of major exporters to remain at critically low levels. The early 1970s clearly demonstrated how weather and climatic variations could cause significant fluctuations in food availabilities.

Food consumption, nutrition and demand

Adequate nutrition depends on whether the quantity and quality of commodities will meet a population's requirements. It is only when effective demand and requirements are more or less identical that the problem of nutrition becomes essentially one of production. Otherwise, malnutrition will remain even after adequate supplies become available. Trends in food supply can be measured by the *per capita* food value in terms of energy and protein, and these can be compared with established nutritional standards.[36] Annex table 175 shows that the average world dietary requirement for energy is approximately matched by energy supplies, but the available *per capita* energy supply is unevenly distributed between the developed and developing countries.[37] The developed regions had 23 per cent more food energy available in 1970 than they needed. However, despite a slight improvement during the 1960s, in 1970 the developing regions still fell 5 per cent short of their requirements. The dietary energy deficit in 1970 was found in each of the developing regions, except Latin America and West Asia. The *per capita* supply of protein in 1970 was 96.4 grams per day in the developed regions and only about 57.4 grams per day in the developing regions.[38]

Table 62 provides an analysis of dietary energy supplies in relation to requirements among 86 developing countries for which information is available. Energy supplies are below requirements in 52 countries that had a total population of 1,303 million in the period 1961–1974. In 23 of these countries, food production also failed to match population growth. In the 47 countries (containing 1,377 million people) where the increase in food production equalled or exceeded population growth, dietary energy supplies met or surpassed requirements in only 18 countries, which had a total population of about 368 million.

TABLE 62. RELATIONSHIPS BETWEEN FOOD PRODUCTION, POPULATION, FOOD DEMAND AND DIETARY ENERGY SUPPLIES AMONG 86 DEVELOPING COUNTRIES, 1961–1974

	Dietary energy supplies (S) in relation to requirements (Q)					
	S<Q			S≥Q		
		Population			*Population*	
Relation[a]	*Number of countries*	*Number (millions)*	*Percentage of total*	*Number of countries*	*Number (millions)*	*Percentage of total*
Total	52	1 303	100.0	34	505	100.0
$f < p$	23	294	22.6	16	137	27.1
$f < d$	21	291	22.3	16	137	27.1
$f \geq d$	2	3	0.3	—	—	—
$f \geq p$	29	1 009	77.4	18	368	72.9
$f < d$	12	687	52.7	10	330	65.5
$f \geq d$	17	322	24.7	8	38	7.5

[a] The notations *f*, *p* and *d* stand for the average rate of growth of food production, population and domestic demand for food, respectively, over the period 1961–1974.

Annex table 175 shows the *per capita* energy situation in selected countries of Asia and the Pacific and in Latin America. In 1970–1974 *per capita* energy consumption exceeded nutritional requirements in nine of the countries of Asia and the Pacific (which accounted for 13 per cent of the combined population). Ten other countries (representing 87 per cent of the population) experienced a considerable deterioration in their food supplies but there were substantial variations from country to country and from year to year. In some cases, energy supplies fell below 90 per cent of the physiological requirements. This is a critical point for populations which have large numbers of people already subsisting at subnutritional levels. Similarly, in Latin America there were 11 countries (representing about 72 per cent of Latin America's total population) that had an average energy intake in excess of nutritional requirements. However, 10 others (including 28 per cent of the total population) had levels of energy intake well below requirements. Nevertheless, the position of Latin American countries as a whole was not essentially worse in 1974 than it was in 1970. No recent data on *per capita* food supplies are available for Africa and Western Asia. Although the Western Asia situation may not have deteriorated much below the 1970 levels, there were some countries whose food supplies were affected by bad weather and poor harvests in the early 1970s. Also, serious deteriorations in *per capita* energy intakes occurred in some countries in the East Africa, and the portion of

[36] See Food and Agriculture Organization of the United Nations/World Health Organization, *Energy and Protein Requirements: Report of a Joint FAO/WHO* Ad Hoc *Expert Committee, Rome, 22 March–2 April 1971*, FAO Nutrition Meeting Report Series No. 552 (Rome/Geneva, 1973).

[37] The energy requirements are based on the average need of a moderately active reference man whose body weight is the prevailing mean for the particular region. The requirements are slightly different for 1961 and 1970 owing to changes in the sex and age structure of the populations between those years.

[38] According to a 1973 study of a joint FAO/WHO expert committee, it is improbable that any dietary intake that meets energy requirements will be inadequate for protein needs. In the absence of any energy deficiency, protein deficiency is thus unlikely to occur. A possible exception is the population that subsists on cassava, yams and plantains, all of which are extremely low in protein. Furthermore, if a diet is adequate in protein content but not enough food is eaten to meet energy needs, some of the protein will be used mainly as a source of energy, instead of being fully used to meet protein needs.

the West Africa bordering on the Sahel recently experienced extreme food shortages due to widespread drought and other unfavourable ecological conditions.

The worsening of the food supply situation in some developing regions is bound to have repercussions on the nutritional status of the most disadvantaged countries, for which a small downward shift in their already low consumption levels is likely to expose marginal population groups to the increased risk of nutritional deficiency diseases and higher death rates. Preliminary data suggest a decline in the consumption of body-building foods in some areas, with consequences that adversely affect the nutritional status of especially vulnerable groups such as pregnant women, lactating mothers and pre-school children. But even where on the average food supplies are adequate, there may be extreme inequalities of food distribution within a population, which will be worsened in periods of food shortages such as those experienced after recent harvest failures.

The latest estimate by FAO is that in 1970 more than 460 million people suffered from severe protein-calorie malnutrition (see table 63). Of these, about 28 million

TABLE 63. ESTIMATED POPULATION SUFFERING FROM PROTEIN-CALORIE MALNUTRITION, BY REGIONS, 1970

	Population (millions)	Population below the lower limit[a]	
		Number (millions)	Percentage of total area
World[b]	2 830	462	16
Developed regions	1 070	28	3
Developing regions[b]	1 750	434	25
Latin America	280	36	13
Asia and the Pacific	1 020	301	30
Western Asia	170	30	18
Africa	280	67	25

[a] The value of the limit varies from region to region. An individual with an intake below this limit will be exposed to a high risk of either an inevitable reduction in his activity or growth (in the case of a child), or a continuous loss of body weight.

[b] Excluding Asian centrally planned economies.

live in developed countries while more than 434 million live in the developing market economies. The latter represent one quarter of the total population of the developing regions. It is estimated that in the developing countries some 10 million children under five years of age suffer from malnutrition, 80 million suffer from moderate malnutrition and 120 million suffer from forms of malnutrition that are less obvious and more difficult to define. Recent studies suggest that in some Latin American countries more than half of the deaths of children under five are associated with nutritional deficiencies.[39] Death rates have also risen sharply in a number of other developing countries as a consequence of worsening nutrition. For example, infant mortality rates for countries with severe calorie and protein deficiencies (below 90 per cent of the requirement) are estimated to have risen from an average of 70 deaths per 1,000 live births to 100 deaths per 1,000 such births. However, infant mortality does not depend solely on the food available. It is also affected by the environment, so it gives an indication of general health conditions only, rather than of the adequacy of current food consumption.

Apart from food shortages, ecological conditions, social habits, food taboos and infectious and parasitic diseases are also important factors in nutritional deficiency. Available household survey data suggest, however, that food deficiencies are primarily a function of poverty. Most of the poor people in the developing countries live in rural areas. The most vulnerable are the landless agricultural labourers living off meagre and uncertain seasonal incomes, but there are far more subsistence farmers who are only slightly better off and sometimes have difficulties in feeding their families adequately, even in years of good harvests. The urban poor, but especially the migrants from rural areas, are probably in the worst nutritional situation, as they are deprived of access to subsistence food production and, often unemployed, are without the resources to acquire nutritionally adequate food.

Determinants of food demand

Aside from a wide range of unquantifiable factors, the foremost determinants of food demand are average family income and family size and composition. Other factors of importance are price changes, urban or rural residence, occupation, social status and a number of sociological, cultural, psychological and environmental conditions. As income increases, the demand for food and the proportion of family expenditure on food change. Annex table 176 illustrates the proportion of total expenditure on food in India and Japan. In India cereal purchases accounted for about 74 per cent of all expenditure among the lowest income groups, compared with 42 per cent among the highest. For Japan, the corresponding figures were only about 32 per cent and 23 per cent. The opposite is true for high quality animal products. In India, the proportion of all expenditure on high quality food ranged from about 6 per cent among the poor to about 24 per cent among high income groups and the corresponding figures for Japan were about 25 and 31 per cent respectively. Table 177 also indicates the pattern of food expenditure changes associated with increased income and modernization. In Japan, from 1965 to 1969, there was a drop of 2 per cent in the proportion of total expenditure on food (from 38 to 36 per cent). The percentage of food expenditure on cereals fell from 30 to 23 per cent, while that of meat and other animal products rose from 27 to 30 per cent. Using the elasticity concept, it has been found that the expenditure elasticity of demand for food, as a whole, is between 0.5 and 1.0 for the poor countries and less than 0.5 for the rich countries. This implies that, in the case of the former, food demand would increase much further with the increase in national income. The expenditure elasticity for cereals in developing countries varies from 0.3 to 0.5 whereas it is less than 0.2 in the developed countries.

Another factor affecting food consumption and demand is change in income distribution. The findings of

[39] Ruth Rice Puffer and Carlos V. Serrano, *Patterns of Mortality in Childhood: Report of the Inter-American Investigation of Mortality in Childhood,* Scientific Publication No. 262 (Washington, D.C., Pan American Health Organization/Pan American Sanitary Bureau/Regional Office of the World Health Organization, 1973), pp. 164-166.

an FAO study on the effects of changes in income distribution upon the projection of demand for food in a number of Latin American countries indicated substantial increases in demand for food as a result of changes in income distribution.[40] The impact of urbanization on food consumption and demand is equally important.[41] In many cases, demographic characteristics of urban populations differ from those of rural populations. The population distribution, as well as the associated economic, social and psychological factors affecting city dwellers, exerts considerable influence on the patterns of food consumption and dietary habits of the urban population, and hence on *per capita* effective demand for food. Annex table 178 illustrates the pattern of urban-rural differentials in food consumption patterns in Japan between 1951 and 1968. Calorie intake in urban areas, which was 95 per cent of that in rural areas in 1951, increased and almost equalled that of rural areas by 1968, owing to increased consumption of wheat and rice. Differentials in the consumption of all proteins between rural and urban areas remained practically the same throughout the period. The consumption of starchy roots and sugar, which were different in urban and rural areas in 1951, moved in different directions and attained the same level by 1968. It may be noted that such analyses need to take into account the impact of such factors as income and price, which may affect the quantities and values of various items purchased. However, evidence from many household budget surveys corroborates the above findings. In many developing countries, income elasticities of demand for total food are found to be higher in rural than in urban areas. There are also lower expenditure elasticities for cereal and other basic food and higher expenditure for quality food in urban compared with rural areas.

In recent years, food prices in both developed and developing countries have increased rapidly. Drastic price increases of over 10 per cent had affected about 20 per cent of the developing countries for which information was available at the beginning of the 1970s, and more than 90 per cent by 1973–1974.[42] The adverse effects of rising food prices have been very significant even in the developed countries. In the developing countries, where up to 70 per cent of disposable income may be spent on food, and even more among the poorest subsistence farmers and unemployed labourers, the hardship caused by recent increases in food prices has been very serious.

Factors affecting food supplies

In recent years there has been some disagreement as to whether there have been fundamental shifts in the structure of the world food supply. Since the Second World War the prevailing view has changed from a pessimistic one following the two successive bad harvests of 1965–1966 to an optimistic one in the green revolution years after 1967, but the poor harvests of 1971–1972 produced a new wave of pessimism. Short-term fluctuations in supplies, prices and stocks, however, should not obscure the more basic long-term forces that are operating. A number of factors affect efforts to increase the world food supplies required to meet the growing world population. These factors include weather and long-term climatic changes, fertilizer production cycles, changing trade patterns and government policies. Various production input functions such as land and water, labour, material requisites and the various types of capital and technical know-how should also be considered.

Fluctuations in food production may be caused by variations in rainfall, temperature and other climatic conditions. These fluctuations, when considered at the regional or global levels, may offset each other. However, when conditions deteriorate in a large number of major countries at the same time, the implications may be serious for world agriculture as a whole. For instance, a comparison of cereal production in four major producing countries (China, India, the USSR and the United States of America) revealed that in the period 1961–1975 major crop failures occurred simultaneously in all countries only once (1972). In 1974 there were crop failures in three of the four countries, and in each of three other years (1965, 1968 and 1971) there were failures in two countries.

Apart from climate, factors such as price, employment, income and demand may influence the course of fluctuations in food production, but their effects are difficult to isolate from those of climate alone. In this respect, the findings of an FAO study indicate that there is no evidence of significant changes in the distribution of the "instability indices" of total food production in 125 countries between the periods (1952–1962 and 1962–1972). This suggests that factors affecting food availability, such as weather and the others just enumerated, have tended to balance one another out at the global level. As table 64 shows, the instability index of cereal production during the period 1952–1972 was 4 for the world. This indicates that normal fluctuations fell within the limits of 8 per cent. The index for the

TABLE 64. INSTABILITY INDICES OF CEREAL PRODUCTION BETWEEN 1952–1962 AND 1962–1972

Region	*Instability index*
World	4
Developed regions	6
North America	10
Western Europe	6
Eastern Europe and the USSR	13
Oceania	42
Other developed market economies	10
Developing regions	3
Africa	6
Latin America	7
Western Asia	8
Asia and the Pacific	6
Asian centrally planned economies	4

[40] Food and Agriculture Organization of the United Nations, "The impact of demand on changes in income distribution: a case study of eleven Latin American countries", *Monthly Bulletin of Agricultural Economics and Statistics*, vol. 21, No. 3 (March, 1972).

[41] Food and Agriculture Organization of the United Nations, "The impact of urbanization on food demand", *Monthly Bulletin of Agricultural Economics and Statistics*, vol. 22, No. 9 (September, 1973), pp. 1–16.

[42] "Mid-term review and appraisal of progress in the food and agriculture sector during the Second United Nations Development Decade" (C75/16), p. 41. Document submitted to the FAO Conference at its eighteenth session, held at Rome from 8 to 27 November 1975.

developed countries was 6, as compared to 3 for the developing countries. The magnitude of crop shortfalls in current production may be greater than instability. Particularly wide shortfalls have been recorded for certain countries of North Africa and the Near East, which are subject to droughts. Even though there is no conclusive evidence that food production fluctuations from weather alone have worsened at the global level in recent years, there is little doubt that their effects are now much greater, especially with regard to world cereal supplies and stocks.

Adequate information is not available for a thorough assessment of trends in potential arable land, particularly in the developing countries. However, there is evidence to the effect that, while the practical ceiling of land development may have been attained in some developing countries, significant land resources remain elsewhere that are not used at all or only at very low yields. The largest such "land reserves" are in Latin America, Africa and parts of South-East Asia. All of these areas face problems—such as heavy rainfall, high temperature, difficulty of access and management, and the high cost of exploitation—which make selective and step-by-step development unavoidable. Table 65 indicates that during 1961–1970 the total available arable land and land under permanent crops increased in Africa and Asia by 10 per cent each or at an annual growth rate of nearly 1 per cent. In the Americas they expanded by 0.7 per cent per annum. Because of simultaneous increases in population, the cultivated area *per capita* declined by about 10 per cent in the developing regions during the period. Proposals presented at the World Food Conference included expansion of arable land in developing countries from 740 million hectares in 1970 to nearly 900 million hectares in 1985, or by 1.2 per cent per annum.

Water is an agricultural input of particular importance. Table 65 shows that while in Africa there are only 7 million hectares of irrigated land, in Asia there are about 160 million hectares. However, it is estimated that at present only 93 million of the 740 million hectares of arable land in the developing countries are being irrigated, and a large proportion of that is in the Far East. It is not possible to make an accurate quantitative assessment of the recent annual additions to the irrigated areas, but available data seem to point to an annual rate of growth of around 2 per cent in Africa and 1.2 per cent in Asia. Achievements in irrigation and multiple cropping appear to be well below expectations in several regions. In many countries the irrigated area has expanded more slowly than planned and the increase has often been partly offset by a decline in productivity or even complete sterility as a result of poor irrigation practices and ecological deterioration.

The importance of the extension of arable land for the purposes of expanding food supply can be perceived by studying cereal production, which accounts for over one half of the total food energy supply, apart from its importance as a source of animal feed. The present critical world food situation is directly related to the fluctuations in world cereal production. Table 66 shows that cereal production in the developing regions grew faster than

TABLE 65. ESTIMATES OF ARABLE LAND, LAND UNDER PERMANENT CULTIVATION AND IRRIGATED LAND, 1961–1970

		Arable land and land under permanent crops	*Irrigated land*	*Arable land and land under permanent crops*	*Irrigated land*
		(thousands of hectares)		(per capita)	
Africa	1961	195 703	5 679	0.70	0.02
	1970	216 735	7 001	0.62	0.02
North America and Latin America	1961	336 916	24 093	0.80	0.06
	1970	365 549	27 798	0.72	0.05
Asia	1961	426 505	140 248	0.25	0.08
	1970	476 032	158 446	0.23	0.08
Europe	1961	382 049	17 666	0.59	0.03
	1970	379 216	21 900	0.54	0.03
Oceania	1961	32 212	1 078	2.00	0.07
	1970	45 541	1 587	2.36	0.08

TABLE 66. PERCENTAGE RATES OF POPULATION GROWTH, LAND AREA CULTIVATED, YIELDS AND PRODUCTION OF CEREALS: A COMPARISON OF TWO LONG-TERM SERIES 1952–1972 AND 1961–1974

	Population		*Area*		*Total output*		*Yield*	
	1952–1972	*1961–1974*	*1952–1972*	*1961–1974*	*1952–1972*	*1961–1974*	*1952–1972*	*1961–1974*
World	2.0	1.9	0.5	0.6	2.7	3.1	2.2	2.4
Developed regions	1.2	1.0	-0.2	0.0	2.8	3.2	3.1	3.3
North America	1.5	1.1	-1.3	0.1	2.4	2.7	3.7	2.7
Western Europe	0.8	0.7	0	0	3.0	3.4	3.0	3.5
Eastern Europe and the USSR	1.2	1.0	0	-0.3	3.2	4.1	3.2	4.3
Oceania	2.0	1.8	4.4	2.7	4.8	3.0	0.3	0.5
Other developed countries	1.3	1.4	0.1	-0.7	1.4	-0.2	1.3	0.9
Developing regions	2.4	2.3	1.1	1.3	2.6	2.9	1.5	1.8
Africa	2.3	2.6	1.2	1.2	2.4	2.0	1.2	0.7
Latin America	2.8	2.8	2.2	1.0	3.8	3.4	1.5	1.7
Western Asia	2.7	2.7	1.5	0.9	2.4	2.2	0.9	1.1
Asia and the Pacific	2.4	2.5	1.1	0.8	2.8	2.8	1.7	1.9
Asian centrally planned economies	1.9	1.8	0.6	1.2	2.2	3.1	1.6	1.0

population throughout the period 1952–1972 in all but West Asia. In the period 1961–1974 the production rate of growth also fell below the population growth rate in Africa. As previously noted, these relationships arose from bad cereal harvests in the early 1970s.[43] No such shortfall can be detected in the developed countries.

Table 66 also shows that in the developing countries growth rates of land area, rather than of yields per unit of area, have generally determined the over-all production rates since the early 1950s. This situation contrasts with the one prevailing in the bulk of the more developed countries. While yield growth rates in the more developed regions amounted to more than 3 per cent, exceeding population growth rates by about 1 per cent, in the developing countries neither yield growth rates nor growth rates in area exceeded the prevailing rates of population growth. However, for the world as a whole, the growth rates in yield exceeded those of population growth over the period 1952–1974.

The cereal situation is complicated by the fact that a large proportion of the world's production is not consumed directly by the human population but is fed instead to animals and consumed indirectly, entailing substantial energy losses in the conversion process. The cereals fed to livestock rose from about 320 million tons in 1964–1966 (30 per cent of the world's production), to about 420 million tons in 1969–1971 (35 per cent of the world's production). However, all but a small quantity was used for livestock feeding in the developed countries, where cereal production increased from about 280 million tons in 1964–1966 to about 320 million tons in 1969–1971. It is estimated that almost half of the increase occurred in Eastern Europe and the USSR. The 320 million tons of cereals fed annually to livestock in the developed countries is believed to be greater than the total consumption of cereals by the populations of China and India together.

Since the increase in area under cultivation (particularly in large parts of the more densely populated countries) will be difficult to maintain, it will be necessary for increased yields to assume a greater role in the future growth of food production. The trends are not very encouraging, although for the world as a whole increases in yield have so far continued to grow faster than population, owing to increased yields in the developed regions. The situation in some of the developing countries that have had good results in this respect is illustrated in table 67. The growth of wheat production in India and rice in Pakistan, for example, has been spectacular as a result of the increases in yields achieved on small and medium farms. These sustained production increases of the green revolution technology are based on the use of high-yield hybrids combined with fertilizers and assured water.

TABLE 67. AVERAGE ANNUAL PERCENTAGE RATES OF GROWTH OF PRODUCTION, AREA AND YIELD OF SELECTED CROPS, SELECTED DEVELOPING COUNTRIES, 1961–1974

Crop	*Production*	*Area*	*Yield*
Wheat			
Brazil	13.4	10.6	2.6
India	8.2	3.6	4.4
Rice			
Pakistan	7.1	1.9	5.2
Venezuela	7.2	3.2	3.8
Maize			
Thailand	10.8	10.2	0.5
Sorghum			
Argentina	12.5	10.0	2.3
Mexico	21.4	20.6	0.6
Soybeans			
Argentina	36.9	32.9	3.0
Brazil	28.6	24.8	3.1
Palm oil			
Peninsular Malaysia	20.1	17.9	1.9
Cocoa beans			
Ivory Coast	7.5	4.0	3.4
Papua New Guinea	7.0	7.0	—
Tea			
Kenya	11.9	9.2	2.4
Uganda	13.6	8.8	4.5

The increased use of fertilizers has been a key factor in the higher crop yields that have been achieved in recent years. However, the recent shortages and high prices of fertilizers have seriously impeded agricultural development in the developing countries. Table 68 shows that in the developing market economies the rate of increase was 13.2 per cent a year during the period 1961–1973. The rate fell slightly, to 12.1 per cent, in 1970–1973. The recent shortages and high prices of chemical fertilizer have stimulated renewed interest in organic fertilizers. It is estimated that the organic fertilizers potentially available in the developing countries in 1970–1971 had the equivalent of 7 or 8 times the nutrient content (in terms of nitrogen, phosphorus and potash) of the chemical fertilizers used in that year. Most of this material now goes to waste, but effective programmes to expand its use deserve to be given high priority, not only in view of the chemical fertilizer situation but also because of the relevance of such programmes for environmental protection and soil conservation.

Population growth, in addition to increasing the number of people needing to be fed, contributes to the expansion of the labour force that may be used to produce food. The latest estimates of labour force and agricultural population show that the share of agriculture in the total labour force of the developing countries declined from about 80 per cent in 1950 to around 67 per cent in 1970 and about 64 per cent in 1975. In the developed countries, the decline was much faster—from about 38 per cent in 1950 to 18 per cent in 1970 and about 15 per cent in 1975 (see table 69). This relative decline has been accompanied by an absolute decline of the agricultural labour force in the developed countries, from 149 million in 1950 to 76 million in 1975, while in

[43] The country information available indicates that about 40 per cent of the developing countries had rates of cereal production that failed to keep pace with population growth. Up to 60 per cent had rates of cereal production that failed to match the rate of growth of cereal demand. The position regarding developed countries was different: only half a dozen countries had rates of cereal production lower than rates of growth of cereal demand.

TABLE 68. USE OF CHEMICAL FERTILIZERS, 1961–1974[a]

Regions	Annual percentage rate of increase[b] 1961–1973	Amounts of fertilizers used (millions of metric tons) 1970–1971	1971–1972	1972–1973	1973–1974[c]	Annual percentage rate of increase 1970–1973[b]
World	8.7	68.2	72.0	77.5	83.6	7.0
Developed regions	7.6	54.8	57.2	60.5	65.0	5.9
Developed market economies[d]	5.3	37.9	38.7	40.5	43.2	4.5
North America	7.3	16.4	16.5	17.3	18.6	4.3
Western Europe	5.0	17.4	18.1	18.7	19.4	3.7
Oceania	6.4	1.4	1.4	1.7	2.1	10.7
Eastern Europe and the USSR	12.5	16.9	18.5	20.0	21.7	8.7
Developing regions	14.1	13.5	14.8	16.7	18.6	11.3
Developing market economies	13.2	8.8	9.9	11.4	12.4	12.1
Africa	13.4	0.7	0.8	0.9	0.9	8.8
Asia and the Pacific	13.7	4.1	4.7	5.3	5.6	10.9
Latin America	13.0	2.9	3.1	3.6	4.1	12.2
Western Asia	12.9	1.1	1.3	1.6	1.8	17.8
Asian centrally planned economies	15.5	4.7	4.9	5.3	6.2	9.7

[a] Nitrogen, phosphorus, potash nutrient content; July to June.
[b] Compound interest formula.
[c] Preliminary.
[d] Including countries in other regions that have not been specified.

the developing countries the agricultural labour force increased from 558 million in 1950 to 713 million in 1975. The increase of the latter is likely to continue for a long time unless population growth can be slowed down and the expansion of non-agricultural employment can be accelerated.

TABLE 69. AGRICULTURAL LABOUR FORCE, SHARE OF LABOUR FORCE AND GROWTH RATES, 1950–1975

	Specification	1950		1955		1960		1965		1970		1975
World	Total (in millions)	707		727		749		756		769		769
	Share (percentage)	64.3		60.9		57.7		54.2		50.9		48.0
	Growth rate (per cent)		0.55		0.61		0.19		0.33		0.51	
Developed regions	Total (in millions)	149		139		124		108		89		76
	Share (percentage)	37.6		33.0		28.1		23.1		18.3		14.7
	Growth rate (per cent)		-1.41		-2.26		-2.76		-3.75		-3.15	
Developing regions	Total (in millions)	558		588		625		648		679		713
	Share (percentage)	79.5		76.2		73.1		69.8		66.6		63.5
	Growth rate (per cent)		1.85		1.24		0.74		0.94		0.96	

Table 70 illustrates recent trends in the productivity of the agricultural labour force. Agricultural output per worker is related to the general level of agricultural development. Thus, it is higher in the North American region than in the developing regions of Africa and the Far East. The output per worker in agriculture is in general inversely related to the proportion of the labour force engaged in agriculture. During the period 1961–1974 the value of agricultural output rose fairly substantially in almost all regions, but the level of agricultural labour productivity in all developing regions remained almost constant or increased only slightly. This was because of the relatively greater increase in the labour force of those regions in comparison to the increase in output. In the more developed countries higher productivity levels that continue to increase are correlated with decreasing participation rates in the agricultural labour force. Generally speaking, high levels of productivity are also correlated with the application of high levels of technology to agriculture.

TABLE 70. LABOUR PRODUCTIVITY IN AGRICULTURE, BY REGIONS, 1961–1974

	1961–1965	1965–1970	1970–1974	1961–1974
Developed regions	1.31	1.62	1.99	1.63
North America	11.09	13.99	17.56	13.65
Western Europe	1.33	1.66	2.08	1.66
Oceania	12.11	14.33	16.33	14.38
Other developed countries	0.42	0.54	0.66	0.53
Eastern Europe and the USSR	0.69	0.88	1.09	0.88
Developing regions	0.18	0.20	0.22	0.20
Africa	0.16	0.17	0.17	0.17
Latin America	0.58	0.64	0.69	0.64
Asia and the Pacific	0.15	0.16	0.17	0.16
Western Asia	0.29	0.32	0.35	0.32
Asian centrally planned economies	0.15	0.17	0.19	0.17

The agricultural labour force of developing countries consists predominantly of small farmers and landless labourers. Levels of underemployment are usually high in these areas because of increasing population pressure and inequitable systems of land tenure. The levels of agricultural employment would have been much higher if many of the developing countries had been able to achieve better production performance instead of becoming increasingly dependent on food imports—which amounts to losing employment opportunities to the more developed countries. The application of appropriate technology to raise yields should be stressed. In many countries there are only limited possibilities for increasing production by cultivating more land, a measure which generally results in a directly proportional increase in employment. Therefore, much depends on the use of technology to raise yields. Studies on the employment effects of the green revolution have revealed that it tends to increase labour requirements per hectare but to reduce the labour expended per unit of product. Consequently, labour requirements increase only as long as agricultural production grows faster than labour productivity. In view of the considerable opportunities for food import substitution, it appears that this is likely to be the case in most developing countries for some time to come.

Annex

STATISTICAL DATA: TABLES 71-177

TABLE 71. POPULATION OF REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950-2000

Population (*thousands*)

Region and country or area	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
World total	2 501 213	2 722 326	2 985 979	3 288 118	3 610 377	3 967 864	4 374 110	4 816 537	5 280 017	5 762 564	6 254 377
More developed regions	857 305	914 772	975 748	1 036 355	1 084 018	1 131 684	1 181 002	1 230 706	1 277 396	1 319 849	1 360 245
Less developed regions	1 643 908	1 807 554	2 010 230	2 251 763	2 526 359	2 836 180	3 193 108	3 585 832	4 002 621	4 442 714	4 894 133
Africa	218 803	243 315	272 795	308 787	351 727	401 314	460 915	531 701	614 085	708 453	813 681
Eastern Africa	61 878	68 807	77 193	87 727	99 818	114 498	131 992	152 868	177 581	206 659	239 861
British Indian Ocean Territory	2	2	2	2	2	2	2	2	2	2	2
Burundi	2 435	2 654	2 908	3 210	3 350	3 765	4 288	4 904	5 618	6 417	7 280
Comoros	184	200	219	242	270	306	347	391	428	454	475
Ethiopia	16 675	18 202	20 024	22 231	24 855	27 975	31 522	35 739	40 708	46 673	53 665
Djibouti	74	77	81	85	95	106	119	135	152	169	187
Kenya	6 018	7 001	8 115	9 527	11 247	13 251	15 688	18 605	22 102	26 263	31 020
Madagascar	4 330	4 803	5 370	6 079	6 932	8 020	9 329	10 909	12 800	15 079	17 782
Malawi	3 033	3 252	3 481	3 890	4 360	4 916	5 577	6 369	7 306	8 360	9 540
Mauritius[a]	479	570	662	761	824	899	969	1 039	1 113	1 188	1 257
Mozambique	5 742	6 090	6 604	7 349	8 234	9 239	10 375	11 747	13 401	15 375	17 649
Reunion	244	286	338	393	447	501	548	594	639	686	732
Rwanda	2 189	2 439	2 740	3 193	3 679	4 200	4 865	5 654	6 568	7 607	8 707
Seychelles	36	39	42	47	52	59	66	74	83	92	102
Somalia	1 826	2 005	2 226	2 500	2 789	3 170	3 652	4 236	4 907	5 679	6 544
Southern Rhodesia	2 276	2 818	3 538	4 425	5 308	6 276	7 495	8 985	10 757	12 815	15 147
Uganda	5 969	6 687	7 551	8 578	9 806	11 353	13 222	15 423	17 996	20 932	24 160
United Republic of Tanzania	7 892	8 875	10 073	11 520	13 273	15 438	18 052	21 142	24 805	29 130	34 045
Zambia	2 473	2 807	3 219	3 696	4 295	5 022	5 875	6 919	8 195	9 739	11 566
Middle Africa	26 258	28 758	31 775	35 766	40 446	45 310	51 201	58 356	66 735	76 485	87 732
Angola	3 969	4 337	4 723	5 154	5 670	6 353	7 181	8 188	9 385	10 808	12 462
Central African Empire	1 145	1 225	1 326	1 452	1 612	1 790	2 004	2 276	2 590	2 949	3 360
Chad	2 461	2 701	2 975	3 290	3 640	4 023	4 473	4 978	5 546	6 187	6 912
Congo	815	885	969	1 069	1 191	1 345	1 532	1 762	2 032	2 349	2 720
Equatorial Guinea	227	238	251	267	285	310	339	372	410	452	497
Gabon	434	440	452	469	500	526	546	568	593	625	660
Sao Tome and Principe	60	62	64	69	74	80	85	87	88	88	88
United Republic of Cameroon	4 092	4 402	4 865	5 346	5 836	6 398	7 088	7 987	9 030	10 218	11 583
Zaire	13 055	14 468	16 151	18 651	21 638	24 485	27 952	32 139	37 061	42 809	49 450
Northern Africa	51 806	58 051	65 732	74 268	85 627	98 185	113 055	130 334	149 748	170 525	191 824
Algeria	8 753	9 715	10 800	11 923	14 330	16 792	19 828	23 501	27 741	32 226	36 663
Egypt	20 461	22 990	25 929	29 389	33 329	37 543	42 144	47 191	52 640	58 438	64 588
Libyan Arab Jamahiriya	1 029	1 126	1 349	1 617	1 938	2 255	2 638	3 086	3 590	4 144	4 737
Morocco	8 953	10 132	11 640	13 139	15 126	17 504	20 384	23 788	27 633	31 752	35 904
Sudan	9 067	10 210	11 770	13 540	15 695	18 268	21 420	25 147	29 425	34 123	38 977
Tunisia	3 530	3 860	4 221	4 620	5 137	5 747	6 561	7 537	8 629	9 748	10 853
Western Sahara	13	18	23	40	72	75	79	84	89	95	101
Southern Africa	14 324	16 122	18 206	20 866	24 335	27 853	32 179	37 143	42 692	49 050	56 231
Botswana	421	460	506	554	617	691	795	923	1 072	1 240	1 429
Lesotho	766	821	885	954	1 043	1 148	1 284	1 440	1 617	1 813	2 027
Namibia	426	492	570	660	766	883	1 024	1 192	1 390	1 621	1 883
South Africa	12 458	14 065	15 925	18 337	21 500	24 663	28 533	32 955	37 881	43 539	49 951
Swaziland	253	284	320	360	409	468	543	633	732	838	941
Western Africa	64 538	71 578	79 889	90 160	101 501	115 469	132 488	153 000	177 329	205 734	238 034
Benin	1 732	1 907	2 113	2 365	2 686	3 074	3 534	4 070	4 681	5 324	5 921
Cape Verde	152	176	202	233	268	295	323	351	379	406	432
Gambia	347	366	391	422	463	509	563	624	694	772	852
Ghana	5 024	5 833	6 776	7 740	8 628	9 873	11 446	13 395	15 710	18 355	21 164
Guinea	2 687	2 912	3 183	3 510	3 921	4 416	5 014	5 718	6 538	7 454	8 455
Guinea-Bissau	511	513	520	492	487	525	573	631	695	767	842
Ivory Coast	2 822	3 102	3 433	3 835	4 310	4 885	5 579	6 399	7 358	8 435	9 617
Liberia	1 066	1 153	1 256	1 376	1 523	1 708	1 937	2 199	2 500	2 843	3 219
Mali	3 426	3 730	4 089	4 530	5 047	5 697	6 470	7 374	8 455	9 746	11 257
Mauritania	796	867	950	1 050	1 162	1 283	1 427	1 596	1 795	2 025	2 281
Niger	2 291	2 572	2 913	3 513	4 016	4 592	5 272	6 077	7 049	8 212	9 568
Nigeria	34 331	38 241	42 947	48 676	55 073	62 925	72 596	84 400	98 497	115 258	134 924
Senegal	2 600	2 848	3 110	3 490	3 925	4 418	4 989	5 642	6 408	7 262	8 171
St. Helena[b]	5	5	5	5	5	5	5	6	6	6	6
Sierra Leone	1 779	1 944	2 136	2 367	2 644	2 983	3 392	3 870	4 419	5 043	5 716
Togo	1 201	1 324	1 465	1 697	1 960	2 248	2 596	3 008	3 494	4 050	4 640
Upper Volta	3 769	4 084	4 400	4 858	5 384	6 032	6 774	7 639	8 651	9 776	10 969

TABLE 71. POPULATION OF REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950–2000 *(continued)*

Population *(thousands)*

Region and country or area	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
Latin America	163 925	187 627	215 577	247 324	283 020	324 092	371 631	425 635	485 585	550 603	619 929
Caribbean	16 725	18 314	20 226	22 489	24 616	27 116	30 016	33 272	36 847	40 662	44 504
Antigua	45	50	55	61	70	73	75	78	80	83	85
Bahamas	79	91	113	143	177	204	230	255	280	304	330
Barbados	211	221	231	235	239	245	252	259	269	278	285
British Virgin Islands	7	7	7	9	10	11	13	15	16	18	19
Cayman Islands	7	7	8	9	11	11	12	12	12	13	13
Cuba	5 752	6 347	7 019	7 802	8 565	9 481	10 533	11 660	12 855	14 069	15 267
Dominica	51	57	60	65	71	75	80	85	88	90	91
Dominican Republic	2 313	2 685	3 160	3 703	4 343	5 118	6 052	7 171	8 492	10 022	11 762
Grenada	76	85	90	92	94	96	98	100	102	104	106
Guadeloupe	206	236	273	301	328	354	382	412	440	467	493
Haiti	3 097	3 335	3 630	3 950	4 235	4 552	4 956	5 441	5 980	6 558	7 045
Jamaica	1 403	1 542	1 629	1 760	1 882	2 029	2 172	2 316	2 464	2 609	2 726
Martinique	222	245	278	307	338	363	391	419	443	465	485
Montserrat	14	13	12	12	12	13	13	13	14	14	14
Netherlands Antilles	162	176	192	208	222	242	267	298	331	363	389
Puerto Rico	2 219	2 250	2 362	2 626	2 743	2 902	3 075	3 257	3 431	3 587	3 723
St. Kitts-Nevis-Anguilla	49	53	57	61	65	66	67	67	68	69	70
St. Lucia	79	87	94	96	101	108	115	122	127	130	130
St. Vincent	67	73	80	84	88	93	98	102	106	108	109
Trinidad and Tobago	632	721	843	908	955	1 009	1 062	1 116	1 172	1 230	1 280
Turks and Caicos Islands	6	6	6	6	6	6	6	6	6	6	6
United States Virgin Islands	27	28	32	52	63	66	68	70	73	74	76
Middle America	35 835	41 538	48 689	57 202	67 003	78 652	92 631	109 180	128 160	149 315	172 670
Belize	67	78	92	106	120	140	162	184	205	223	234
Costa Rica	866	1 036	1 250	1 495	1 737	1 994	2 286	2 611	2 954	3 311	3 695
El Salvador	1 931	2 190	2 527	2 954	3 516	4 108	4 813	5 643	6 595	7 654	8 803
Guatemala	3 023	3 438	3 990	4 583	5 298	6 129	7 100	8 210	9 460	10 849	12 374
Honduras	1 390	1 604	1 873	2 209	2 553	3 037	3 595	4 241	4 997	5 875	6 881
Mexico	26 606	30 949	36 369	42 859	50 313	59 204	69 965	82 803	97 585	114 055	132 244
Nicaragua	1 109	1 278	1 472	1 701	1 970	2 318	2 733	3 218	3 778	4 422	5 154
Panama[c]	800	927	1 082	1 261	1 458	1 678	1 930	2 217	2 533	2 871	3 230
Canal Zone	42	39	35	35	39	43	47	52	53	54	55
Temperate South America	25 437	28 065	30 821	33 493	36 073	38 747	41 564	44 407	47 152	49 719	52 078
Argentina	17 150	18 928	20 611	22 179	23 748	25 384	27 064	28 678	30 189	31 584	32 861
Chile	6 091	6 743	7 585	8 510	9 369	10 253	11 235	12 303	13 379	14 405	15 355
Falkland Islands (Malvinas)	2	2	2	2	2	2	2	2	2	2	2
Uruguay	2 194	2 392	2 623	2 802	2 955	3 108	3 263	3 425	3 582	3 729	3 861
Tropical South America	85 928	99 709	115 841	134 139	155 328	179 578	207 421	238 774	273 426	310 907	350 676
Bolivia	3 019	3 375	3 782	4 246	4 780	5 410	6 162	7 013	7 974	9 054	10 267
Brazil	52 901	61 864	71 539	82 541	95 204	109 730	126 389	145 082	165 757	188 273	212 507
Colombia	11 689	13 593	15 905	18 691	22 075	25 890	30 215	35 050	40 324	45 874	51 464
Ecuador	3 224	3 700	4 328	5 095	6 031	7 090	8 303	9 689	11 251	12 962	14 773
French Guiana	25	29	33	41	51	60	71	82	94	106	118
Guyana	423	486	560	633	709	791	884	984	1 080	1 172	1 256
Paraguay	1 371	1 564	1 774	2 016	2 301	2 647	3 062	3 540	4 074	4 655	5 274
Peru	7 915	8 775	9 993	11 440	13 248	15 326	17 711	20 424	23 478	26 871	30 561
Surinam	215	250	290	332	371	422	491	584	688	797	904
Venezuela	5 145	6 073	7 635	9 105	10 559	12 213	14 134	16 326	18 706	21 143	23 552
Northern America	166 073	181 741	198 662	214 040	226 389	236 841	248 833	262 344	275 136	286 163	296 199
Bermuda	37	41	44	48	52	56	60	64	68	72	76
Canada	13 737	15 736	17 909	19 644	21 406	22 801	24 576	26 511	28 357	30 000	31 613
Greenland	23	27	33	40	47	54	59	63	67	71	75
St. Pierre and Miquelon	5	5	5	5	5	5	5	5	5	5	5
United States of America	152 271	165 932	180 671	194 303	204 879	213 925	224 133	235 701	246 639	256 015	264 430
East Asia	674 821	728 914	787 980	854 378	926 866	1 006 380	1 087 749	1 164 848	1 233 498	1 301 942	1 370 061
China	558 190	605 081	654 488	710 324	771 840	838 803	907 609	973 155	1 031 142	1 089 572	1 147 987
Japan	83 625	89 815	94 096	98 881	104 331	111 120	117 546	122 445	126 213	129 567	132 929
Other East Asia	33 005	34 018	39 396	45 173	50 694	56 456	62 594	69 247	76 143	82 803	89 145
Hong Kong	1 974	2 490	3 075	3 692	3 942	4 225	4 522	4 841	5 147	5 405	5 625
Korea	30 096	30 524	35 221	40 189	45 257	50 514	56 111	62 179	68 486	74 604	80 448
Democratic People's Republic of Korea	9 740	9 100	10 526	12 100	13 892	15 852	17 926	20 179	22 581	25 022	27 457
Republic of Korea	20 356	21 424	24 695	28 089	31 365	34 663	38 185	42 000	45 905	49 583	52 991
Macau	188	180	169	223	248	271	292	314	334	353	372
Mongolia	747	824	931	1 070	1 248	1 446	1 669	1 914	2 176	2 441	2 701
South Asia	692 916	762 815	855 711	970 157	1 101 199	1 249 793	1 426 843	1 624 722	1 836 258	2 053 610	2 267 266

TABLE 71. POPULATION OF REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950–2000 *(continued)*

Population *(thousands)*

Region and country or area	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
Eastern South Asia	173 228	191 741	216 986	247 747	282 969	323 836	370 855	423 221	478 712	535 640	591 622
Brunei	46	65	90	114	133	147	160	175	189	202	216
Burma	18 380	20 166	22 254	24 754	27 748	31 240	35 195	39 687	44 573	49 701	54 902
Democratic Kampuchea	4 163	4 702	5 364	6 142	7 060	8 110	9 409	10 911	12 491	14 139	15 819
Indonesia[d]	75 449	82 791	92 701	105 070	119 467	36 044	54 869	175 471	196 576	217 623	237 507
Lao People's Democratic Republic	1 949	2 146	2 382	2 652	2 962	3 303	3 721	4 182	4 678	5 199	5 725
Malaysia	6 187	6 934	7 908	9 080	10 466	12 093	13 998	16 076	18 260	20 239	22 054
Philippines	20 988	23 913	27 561	32 030	37 604	44 437	52 203	60 842	70 119	79 876	89 707
Portuguese Timor	433	462	500	549	604	672	755	846	943	1 044	1 145
Singapore	1 022	1 306	1 634	1 880	2 075	2 248	2 437	2 636	2 829	2 993	3 126
Thailand	20 010	22 762	26 392	30 641	35 745	42 093	49 473	57 784	66 752	76 135	85 618
Viet Nam	24 600	26 495	30 200	34 835	39 106	43 451	48 634	54 612	61 302	68 491	75 802
Former Democratic Republic of Viet-Nam	12 973	14 080	16 100	18 711	21 154	23 798	26 901	30 455	34 431	38 729	43 141
Former Republic of South Viet-Nam	11 627	12 415	14 100	16 124	17 952	19 653	21 733	24 157	26 871	29 762	32 661
Middle South Asia	475 345	520 353	580 563	655 811	741 710	837 799	953 997	1 083 462	1 221 669	1 362 961	1 501 213
Afghanistan	11 660	12 552	13 736	15 097	16 978	19 280	22 038	25 207	28 739	32 598	36 654
Bangladesh	41 037	45 607	51 446	58 795	67 692	73 746	84 803	98 003	112 694	128 298	144 347
Bhutan	726	782	853	939	1 045	1 173	1 327	1 505	1 701	1 921	2 145
India	352 664	384 235	427 802	482 365	543 132	613 217	694 309	782 890	876 051	969 748	1 059 429
India-Sikkim	136	148	161	176	201	222	246	274	305	341	381
Iran	16 913	19 020	21 554	24 662	28 359	32 923	38 492	44 904	51 897	59 221	66 593
Maldives	82	86	92	98	108	119	132	147	165	184	205
Nepal	8 000	8 590	9 180	10 100	11 232	12 572	14 231	16 186	18 348	20 771	23 196
Pakistan	36 450	40 609	45 851	52 415	60 449	70 560	82 952	97 354	113 239	129 877	146 924
Sri Lanka	7 678	8 723	9 889	11 164	12 514	13 986	15 465	16 992	18 530	20 002	21 339
Western South Asia	44 343	50 721	58 161	66 599	76 520	88 158	101 992	118 039	135 877	155 009	174 432
Bahrain	127	143	162	185	215	251	294	344	403	468	536
Cyprus	494	530	573	594	633	673	714	755	791	821	846
Democratic Yemen	907	997	1 109	1 252	1 436	1 660	1 928	2 241	2 601	3 002	3 425
Iraq	5 180	5 940	6 847	7 976	9 356	11 067	13 145	15 578	18 277	21 242	24 445
Israel	1 258	1 748	2 114	2 563	2 958	3 417	3 898	4 364	4 791	5 186	5 566
Jordan	1 237	1 447	1 695	1 955	2 280	2 688	3 177	3 752	4 397	5 114	5 889
Kuwait	152	199	278	475	760	1 085	1 439	1 816	2 229	2 690	3 183
Lebanon	1 443	1 613	1 857	2 151	2 469	2 869	3 360	3 956	4 637	5 373	6 118
Oman	390	437	494	565	657	766	898	1 053	1 231	1 429	1 639
Palestine-Gaza Strip	198	325	377	428	501	594	707	843	999	1 166	1 348
Qatar	47	52	59	68	79	92	108	127	148	172	197
Saudi Arabia	4 890	5 376	5 979	6 750	7 740	8 966	10 423	12 132	14 094	16 285	18 600
Syrian Arab Republic	3 495	3 967	4 561	5 320	6 247	7 259	8 536	10 081	11 823	13 750	15 824
Turkey	20 809	23 859	27 509	31 151	35 232	39 882	45 363	51 692	58 656	65 843	72 588
United Arab Emirates	94	105	119	150	190	222	260	304	356	413	474
Yemen	3 622	3 982	4 429	5 016	5 767	6 668	7 741	9 000	10 445	12 054	13 753
Europe	391 968	407 616	425 154	444 990	459 085	473 098	486 541	499 972	513 605	526 755	539 500
Eastern Europe	88 500	92 967	96 709	100 055	102 942	106 267	109 647	112 771	115 607	118 405	121 437
Bulgaria	7 251	7 499	7 867	8 201	8 490	8 793	9 075	9 323	9 554	9 789	10 036
Czechoslovakia	12 389	13 093	13 654	14 159	14 339	14 793	15 250	15 646	15 996	16 356	16 796
German Democratic Republic[e]	18 387	17 944	17 240	17 019	17 058	17 127	17 228	17 368	17 532	17 710	17 932
Hungary	9 338	9 825	9 984	10 153	10 338	10 534	10 721	10 841	10 907	10 972	11 069
Poland	24 824	27 281	29 561	31 496	32 473	33 841	35 316	36 685	37 824	38 822	39 846
Romania	16 311	17 325	18 403	19 027	20 244	21 178	22 057	22 908	23 793	24 755	25 758
Northern Europe	72 477	73 832	75 834	78 566	80 309	81 975	83 740	85 501	87 424	89 355	91 320
Channel Islands	104	106	110	114	122	128	133	138	143	147	152
Denmark	4 271	4 439	4 581	4 758	4 929	5 026	5 104	5 172	5 238	5 303	5 361
Faeroe Islands	31	33	35	37	39	40	41	43	44	45	47
Finland	4 009	4 235	4 430	4 564	4 606	4 652	4 688	4 708	4 734	4 744	4 747
Iceland	143	158	176	192	204	216	229	243	256	267	278
Ireland	2 969	2 921	2 834	2 876	2 954	3 131	3 298	3 476	3 658	3 834	4 002
Isle of Man	55	52	48	48	56	58	60	63	65	66	68
Norway	3 265	3 427	3 581	3 723	3 877	4 007	4 121	4 222	4 314	4 400	4 483
Sweden	7 014	7 262	7 480	7 734	8 043	8 291	8 546	8 770	8 981	9 184	9 390
United Kingdom	50 616	51 199	52 559	54 520	55 480	56 427	57 519	58 667	59 993	61 363	62 794
Southern Europe	108 552	113 120	118 098	123 357	127 696	132 354	137 106	141 875	146 669	151 293	155 685
Andorra	6	6	8	14	19	23	25	28	31	34	37
Albania	1 243	1 410	1 640	1 903	2 169	2 482	2 831	3 207	3 584	3 934	4 263
Gibraltar	23	24	24	25	26	27	28	29	30	31	31
Greece	7 566	7 966	8 327	8 551	8 793	8 930	9 080	9 223	9 369	9 506	9 621
Holy See	1	1	1	1	1	1	1	1	1	1	1
Italy	46 769	48 200	50 223	51 944	53 565	55 023	56 319	57 508	58 677	59 801	60 876
Malta	312	314	329	320	326	329	335	340	341	340	336
Portugal	8 405	8 610	8 826	9 235	8 628	8 762	8 957	9 201	9 463	9 707	9 918
San Marino	13	14	15	17	19	20	21	22	23	24	25
Spain	27 868	29 056	30 303	31 913	33 779	35 433	37 209	39 080	41 041	43 008	44 924
Yugoslavia	16 346	17 519	18 402	19 434	20 371	21 322	22 299	23 236	24 107	24 908	25 653

TABLE 71. POPULATION OF REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950–2000 *(continued)*

Population *(thousands)*

Region and country or area	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
Western Europe	122 439	127 697	134 513	143 012	148 137	152 503	156 049	159 825	163 906	167 702	171 058
Austria	6 935	6 947	7 048	7 255	7 447	7 538	7 628	7 733	7 856	7 985	8 118
Belgium	8 639	8 868	9 153	9 464	9 638	9 846	10 061	10 273	10 464	10 625	10 781
France	41 736	43 428	45 684	48 758	50 670	52 913	55 103	57 052	58 816	60 508	62 131
Germany, Federal Republic of[e]	49 989	52 382	55 433	59 012	60 700	61 682	62 023	62 858	64 188	65 370	66 242
Liechtenstein	14	15	16	19	21	22	23	24	25	27	28
Luxembourg	296	305	314	332	339	342	345	347	350	352	353
Monaco	22	21	23	23	23	24	25	26	27	28	28
Netherlands	10 114	10 751	11 480	12 292	13 032	13 599	14 107	14 614	15 116	15 588	16 010
Switzerland	4 694	4 980	5 362	5 857	6 267	6 535	6 734	6 898	7 063	7 219	7 366
Oceania	12 632	14 139	15 771	17 507	19 323	21 308	23 482	25 777	28 109	30 431	32 715
Australia-New Zealand	10 127	11 376	12 687	14 015	15 371	16 840	18 403	19 997	21 549	23 038	24 512
Australia	8 219	9 240	10 315	11 387	12 552	13 809	15 140	16 490	17 796	19 034	20 245
New Zealand	1 908	2 136	2 372	2 628	2 820	3 031	3 263	3 507	3 753	4 004	4 267
Melanesia	1 827	1 983	2 190	2 458	2 771	3 126	3 555	4 057	4 630	5 246	5 847
New Caledonia	57	67	79	92	109	125	144	167	192	219	247
New Hebrides	52	58	65	74	84	96	111	129	148	169	190
Norfolk Island	1	1	1	2	2	2	2	2	2	2	2
Papua New Guinea	1 613	1 744	1 920	2 148	2 413	2 716	3 082	3 510	4 001	4 528	5 039
Solomon Islands	104	113	125	142	163	187	216	250	287	328	369
Micronesia-Polynesia	678	780	894	1 034	1 181	1 341	1 524	1 722	1 930	2 147	2 356
Micronesia	167	191	208	233	267	306	350	398	448	502	556
Gilbert Island and Tuvalu	38	41	46	50	56	66	77	87	99	111	123
Guam	59	68	67	74	88	99	113	130	147	165	184
Nauru	4	4	5	6	7	8	8	9	9	10	10
Niue	4	4	4	5	5	5	6	6	7	7	7
Pacific Islands	57	66	78	89	101	117	135	155	175	196	218
Other Micronesia[f]	6	7	8	9	10	10	11	12	13	14	15
Polynesia	511	589	686	801	914	1 036	1 174	1 324	1 482	1 645	1 800
American Samoa	19	19	21	24	27	32	38	44	52	60	67
Cook Islands	14	16	18	20	21	25	29	34	40	46	52
Fiji	289	336	394	464	520	577	635	691	745	798	847
French Polynesia	60	69	79	91	109	128	151	177	207	238	269
Tonga	46	53	61	72	86	101	119	140	163	188	212
Wallis and Futuna Islands	7	7	7	8	9	9	9	9	9	9	9
Western Samoa	78	91	107	123	141	164	194	228	266	306	345
USSR	180 075	196 159	214 329	230 936	242 768	255 038	268 115	281 540	293 742	304 607	315 027

[a] Including Agalega, Rodrigues and St. Brandon.

[b] Including Ascension and Tristan da Cunha.

[c] Excluding Panama Canal Zone.

[d] Including West Irian.

[e] The data which relate to the Federal Republic of Germany and the German Democratic Republic include the relevant data relating to Berlin for which separate data have not been supplied. This is without prejudice to any question of status which may be involved.

[f] Including Christmas Island, Midway Islands, Tokelau, Wake Island, Cocos (Keeling) Islands, Canton and Enderbury Islands, Johnston Island and Pitcairn Island.

TABLE 72. RATES OF GROWTH, REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950-2000

(Percentage)

	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000
World total	1.69	1.85	1.93	1.87	1.89	1.95	1.93	1.84	1.75	1.64
More developed regions	1.30	1.29	1.21	0.90	0.86	0.85	0.82	0.74	0.65	0.60
Less developed regions	1.90	2.13	2.27	2.30	2.31	2.37	2.32	2.20	2.09	1.94
Africa	2.12	2.29	2.48	2.60	2.64	2.77	2.86	2.88	2.86	2.77
Eastern Africa	2.12	2.30	2.56	2.58	2.74	2.84	2.94	3.00	3.03	2.98
British Indian Ocean Territory	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Burundi	1.72	1.83	1.98	0.85	2.33	2.60	2.69	2.72	2.66	2.52
Comoros	1.65	1.85	2.02	2.18	2.50	2.51	2.39	1.80	1.18	0.94
Ethiopia	1.75	1.91	2.09	2.23	2.36	2.39	2.51	2.60	2.73	2.79
Djibouti	0.79	1.01	0.96	2.22	2.19	2.31	2.52	2.37	2.12	2.02
Kenya	3.03	2.95	3.21	3.32	3.28	3.38	3.41	3.45	3.45	3.33
Madagascar	2.07	2.23	2.48	2.63	2.92	3.02	3.13	3.20	3.28	3.30
Malawi	1.39	1.36	2.22	2.28	2.40	2.52	2.65	2.74	2.69	2.64
Mauritius[a]	3.48	2.99	2.79	1.58	1.76	1.49	1.39	1.38	1.30	1.13
Mozambique	1.18	1.62	2.14	2.27	2.30	2.32	2.48	2.64	2.75	2.76
Réunion	3.18	3.34	3.01	2.59	2.27	1.80	1.60	1.47	1.42	1.29
Rwanda	2.16	2.33	3.06	2.84	2.65	2.94	3.01	3.00	2.94	2.70
Seychelles	1.60	1.48	2.25	2.02	2.53	2.24	2.29	2.30	2.06	2.06
Somalia	1.86	2.10	2.32	2.19	2.56	2.83	2.97	2.94	2.92	2.84
Southern Rhodesia	4.27	4.55	4.47	3.64	3.35	3.55	3.63	3.60	3.50	3.34
Uganda	2.27	2.43	2.55	2.68	2.93	3.05	3.08	3.09	3.02	2.87
United Republic of Tanzania	2.35	2.53	2.69	2.83	3.02	3.13	3.16	3.20	3.21	3.12
Zambia	2.53	2.74	2.76	3.01	3.13	3.14	3.27	3.38	3.45	3.44
Middle Africa	1.82	2.00	2.37	2.46	2.27	2.44	2.62	2.68	2.73	2.74
Angola	1.77	1.71	1.75	1.91	2.27	2.45	2.62	2.73	2.82	2.85
Central African Empire	1.36	1.58	1.82	2.09	2.09	2.27	2.54	2.59	2.60	2.60
Chad	1.86	1.93	2.01	2.02	2.00	2.12	2.14	2.16	2.19	2.22
Congo	1.66	1.81	1.96	2.16	2.44	2.60	2.80	2.84	2.90	2.93
Equatorial Guinea	0.95	1.06	1.24	1.30	1.71	1.76	1.86	1.96	1.95	1.88
Gabon	0.27	0.54	0.75	1.27	1.00	0.76	0.77	0.90	1.03	1.10
Sao Tome and Principe	0.66	0.63	1.50	1.40	1.56	1.21	0.47	0.23	0.0	0.0
United Republic of Cameroon	1.46	2.00	1.88	1.75	1.84	2.05	2.39	2.45	2.47	2.51
Zaire	2.05	2.20	2.88	2.97	2.47	2.65	2.79	2.85	2.88	2.88
Northern Africa	2.28	2.49	2.44	2.85	2.74	2.82	2.84	2.78	2.60	2.35
Algeria	2.09	2.12	1.98	3.68	3.17	3.32	3.40	3.32	3.00	2.58
Egypt	2.33	2.41	2.51	2.52	2.38	2.31	2.26	2.19	2.09	2.00
Libyan Arab Jamahiriya	1.80	3.61	3.63	3.62	3.03	3.14	3.14	3.03	2.87	2.67
Morocco	2.47	2.77	2.42	2.82	2.92	3.05	3.09	3.00	2.78	2.46
Sudan	2.37	2.84	2.80	2.95	3.04	3.18	3.21	3.14	2.96	2.66
Tunisia	1.79	1.79	1.81	2.12	2.25	2.65	2.77	2.71	2.44	2.15
Western Sahara	5.57	5.57	11.06	11.64	0.90	1.01	1.11	1.27	1.30	1.20
Southern Africa	2.36	2.43	2.73	3.08	2.70	2.89	2.87	2.78	2.78	2.73
Botswana	1.77	1.91	1.81	2.15	2.27	2.79	2.99	2.99	2.91	2.84
Lesotho	1.39	1.50	1.50	1.78	1.92	2.23	2.29	2.32	2.29	2.23
Namibia	2.86	2.93	2.95	2.96	2.84	2.98	3.03	3.07	3.07	3.00
South Africa	2.43	2.48	2.82	3.18	2.74	2.92	2.88	2.79	2.78	2.75
Swaziland	2.31	2.39	2.34	2.55	2.73	2.98	3.05	2.92	2.70	2.31
Western Africa	2.07	2.20	2.42	2.37	2.58	2.75	2.88	2.95	2.97	2.92
Cape Verde	2.97	2.74	2.86	2.79	1.91	1.79	1.67	1.55	1.38	1.24
Benin	1.93	2.05	2.26	2.54	2.70	2.79	2.83	2.80	2.57	2.13
Gambia	1.11	1.33	1.52	1.83	1.92	2.01	2.04	2.13	2.12	1.98
Ghana	2.99	3.00	2.66	2.17	2.70	2.96	3.14	3.19	3.11	2.85
Guinea	1.61	1.78	1.96	2.21	2.38	2.54	2.63	2.68	2.62	2.52
Guinea-Bissau	0.09	0.26	-1.08	-0.21	1.51	1.76	1.92	1.94	1.96	1.87
Ivory Coast	1.89	2.03	2.22	2.33	2.51	2.66	2.74	2.79	2.73	2.62
Liberia	1.58	1.71	1.82	2.03	2.29	2.52	2.54	2.57	2.57	2.48
Mali	1.70	1.84	2.05	2.16	2.42	2.54	2.62	2.74	2.84	2.88
Mauritania	1.71	1.83	2.00	2.02	1.99	2.13	2.24	2.35	2.41	2.38
Niger	2.31	2.49	3.75	2.68	2.68	2.76	2.84	2.97	3.06	3.06
Nigeria	2.16	2.32	2.50	2.47	2.67	2.86	3.01	3.09	3.14	3.15
Senegal	1.82	1.76	2.30	2.35	2.37	2.43	2.46	2.55	2.50	2.36
St. Helena[b]	0.0	0.0	0.0	0.0	0.78	0.75	0.73	0.70	0.68	0.66
Sierra Leone	1.77	1.88	2.05	2.21	2.41	2.57	2.64	2.65	2.64	2.51
Togo	1.95	2.02	2.94	2.89	2.74	2.88	2.95	2.99	2.96	2.72
Upper Volta	1.61	1.49	1.98	2.05	2.27	2.32	2.40	2.49	2.45	2.30

TABLE 72. RATES OF GROWTH, REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950–2000 *(continued)*

(Percentage)

	1950–1955	1955–1960	1960–1965	1965–1970	1970–1975	1975–1980	1980–1985	1985–1990	1990–1995	1995–2000
Latin America	2.70	2.78	2.75	2.70	2.71	2.74	2.71	2.64	2.51	2.37
Caribbean	1.82	1.99	2.12	1.81	1.93	2.03	2.06	2.04	1.97	1.81
Antigua	2.09	1.79	2.20	2.56	0.76	0.68	0.66	0.63	0.62	0.60
Bahamas	2.83	4.38	4.70	4.22	2.79	2.40	2.11	1.83	1.70	1.64
Barbados	0.89	0.90	0.39	0.32	0.50	0.58	0.53	0.76	0.63	0.51
British Virgin Islands	0.0	0.0	3.88	2.22	3.47	2.80	2.32	2.08	1.77	1.63
Cayman Islands	0.0	2.67	2.36	3.65	0.73	0.70	0.68	0.66	0.48	0.47
Cuba	1.97	2.01	2.11	1.87	2.03	2.10	2.03	1.95	1.81	1.63
Dominica	2.22	1.03	1.72	1.59	1.07	1.37	1.17	0.83	0.45	0.15
Dominican Republic	2.98	3.25	3.17	3.19	3.28	3.35	3.39	3.38	3.31	3.20
Grenada	2.24	1.14	0.46	0.41	0.42	0.41	0.40	0.40	0.39	0.38
Guadeloupe	2.72	2.91	1.93	1.73	1.55	1.51	1.49	1.32	1.22	1.08
Haiti	1.48	1.70	1.69	1.39	1.45	1.70	1.86	1.89	1.85	1.43
Jamaica	1.89	1.10	1.55	1.34	1.50	1.37	1.28	1.24	1.14	0.88
Martinique	2.00	2.52	1.99	1.90	1.44	1.44	1.40	1.12	0.96	0.84
Montserrat	−1.48	−1.60	0.0	0.17	0.65	0.63	0.61	0.59	0.43	0.42
Netherlands Antilles	1.66	1.74	1.60	1.31	1.71	1.96	2.20	2.12	1.87	1.38
Puerto Rico	0.28	0.97	2.12	0.88	1.13	1.16	1.15	1.04	0.89	0.74
St. Kitts-Nevis-Anguilla	1.57	1.46	1.45	1.08	0.28	0.27	0.27	0.27	0.23	0.26
St. Lucia	1.93	1.55	0.40	1.09	1.37	1.21	1.11	0.76	0.48	0.12
St. Vincent	1.72	1.83	0.86	0.94	1.22	1.01	0.88	0.65	0.45	0.22
Trinidad and Tobago	2.63	3.13	1.49	1.01	1.09	1.03	1.00	0.97	0.97	0.79
Turks and Caicos Islands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
United States Virgin Islands	0.73	2.67	9.71	3.77	0.93	0.75	0.61	0.59	0.41	0.40
Middle America	2.95	3.18	3.22	3.16	3.21	3.27	3.29	3.21	3.06	2.91
Belize	3.04	3.19	2.94	2.48	3.11	2.90	2.53	2.17	1.69	0.95
Costa Rica	3.58	3.77	3.57	3.00	2.76	2.73	2.66	2.47	2.28	2.20
El Salvador	2.52	2.86	3.12	3.49	3.11	3.16	3.18	3.12	2.98	2.80
Guatemala	2.57	2.98	2.77	2.90	2.92	2.94	2.91	2.83	2.74	2.63
Honduras	2.86	3.11	3.29	2.89	3.48	3.37	3.31	3.28	3.24	3.16
Mexico	3.02	3.23	3.28	3.21	3.25	3.34	3.37	3.29	3.12	2.96
Nicaragua	2.84	2.82	2.90	2.93	3.26	3.29	3.27	3.21	3.15	3.06
Panama[c]	2.93	3.09	3.06	2.91	2.80	2.80	2.77	2.66	2.51	2.35
Canal Zone	−1.48	−2.16	0.0	2.22	1.99	1.81	1.97	0.38	0.41	0.33
Temperate South America	1.97	1.87	1.66	1.48	1.43	1.40	1.32	1.20	1.06	0.93
Argentina	1.97	1.70	1.47	1.37	1.33	1.28	1.16	1.03	0.90	0.79
Chile	2.04	2.35	2.30	1.92	1.80	1.83	1.82	1.68	1.48	1.28
Falkland Islands (Malvinas)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Uruguay	1.73	1.84	1.32	1.06	1.01	0.97	0.97	0.90	0.80	0.69
Tropical South America	2.97	3.00	2.93	2.93	2.90	2.88	2.82	2.71	2.57	2.41
Bolivia	2.23	2.27	2.31	2.37	2.48	2.60	2.59	2.57	2.54	2.51
Brazil	3.13	2.91	2.86	2.85	2.84	2.83	2.76	2.66	2.55	2.42
Colombia	3.02	3.14	3.23	3.33	3.19	3.09	2.97	2.80	2.58	2.30
Ecuador	2.75	3.14	3.26	3.37	3.24	3.16	3.09	2.99	2.83	2.61
French Guiana	2.53	2.96	4.20	4.22	3.51	3.27	3.01	2.70	2.41	2.10
Guyana	2.78	2.83	2.45	2.28	2.17	2.22	2.14	1.86	1.64	1.39
Paraguay	2.63	2.52	2.56	2.64	2.80	2.91	2.90	2.81	2.67	2.50
Peru	2.06	2.60	2.70	2.93	2.91	2.89	2.85	2.79	2.70	2.57
Suriname	3.02	2.97	2.72	2.20	2.57	3.05	3.45	3.31	2.93	2.51
Venezuela	3.32	4.58	3.52	2.96	2.91	2.92	2.88	2.72	2.45	2.16
Northern America	1.80	1.78	1.49	1.12	0.90	0.99	1.06	0.95	0.79	0.69
Bermuda	1.64	1.65	1.86	1.55	1.47	1.37	1.25	1.18	1.14	1.11
Canada	2.72	2.59	1.85	1.72	1.26	1.50	1.52	1.35	1.13	1.05
Greenland	3.85	3.66	3.66	3.31	2.80	1.78	1.32	1.24	1.17	1.08
St. Pierre and Miquelon	0.0	0.0	0.40	0.77	0.0	0.0	0.0	0.0	0.0	0.0
United States of America	1.72	1.70	1.45	1.06	0.86	0.93	1.01	0.91	0.75	0.65
East Asia	1.54	1.56	1.62	1.63	1.65	1.56	1.37	1.15	1.08	1.02
China	1.61	1.57	1.64	1.66	1.66	1.58	1.39	1.16	1.10	1.04
Japan	1.43	0.93	0.99	1.07	1.26	1.12	0.82	0.61	0.52	0.51

TABLE 72. RATES OF GROWTH, REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950–2000 *(continued)*
(Percentage)

	1950–1955	1955–1960	1960–1965	1965–1970	1970–1975	1975–1980	1980–1985	1985–1990	1990–1995	1995–2000
Other East Asia	0.60	2.94	2.74	2.31	2.15	2.06	2.02	1.90	1.68	1.48
Hong Kong	4.64	4.22	3.66	1.31	1.39	1.36	1.36	1.22	0.98	0.80
Korea	0.28	2.86	2.64	2.38	2.20	2.10	2.05	1.93	1.71	1.51
Democratic People's Republic of Korea	-1.36	2.91	2.79	2.76	2.64	2.46	2.37	2.25	2.05	1.86
Republic of Korea	1.02	2.84	2.58	2.21	2.00	1.94	1.90	1.78	1.54	1.33
Macau	-0.87	-1.26	5.55	2.16	1.72	1.54	1.40	1.25	1.13	1.02
Mongolia	1.94	2.44	2.78	3.08	2.95	2.87	2.74	2.57	2.30	2.03
South Asia	1.92	2.30	2.51	2.53	2.53	2.65	2.60	2.45	2.24	1.98
Eastern South Asia	2.03	2.47	2.65	2.66	2.70	2.71	2.64	2.46	2.25	1.99
Brunei	6.91	6.50	4.73	3.13	1.90	1.80	1.70	1.56	1.35	1.30
Burma	1.85	1.97	2.13	2.28	2.37	2.38	2.40	2.32	2.18	1.99
Democratic Kampuchea	2.43	2.64	2.71	2.78	2.77	2.97	2.96	2.70	2.48	2.25
Indonesia[d]	1.86	2.26	2.50	2.57	2.60	2.59	2.50	2.27	2.03	1.75
Lao People's Democratic Republic	1.92	2.09	2.14	2.21	2.18	2.38	2.33	2.24	2.11	1.93
Malaysia	2.28	2.63	2.76	2.84	2.89	2.93	2.77	2.55	2.06	1.72
Philippines	2.61	2.84	3.01	3.21	3.34	3.22	3.06	2.84	2.61	2.32
Portuguese Timor	1.29	1.59	1.85	1.94	2.13	2.31	2.28	2.18	2.03	1.85
Singapore	4.90	4.48	2.81	1.97	1.61	1.61	1.57	1.42	1.12	0.88
Thailand	2.58	2.96	2.99	3.08	3.27	3.23	3.11	2.89	2.63	2.35
Viet Nam	1.48	2.62	2.86	2.31	2.11	2.25	2.32	2.31	2.22	2.03
Former Democratic Republic of Viet-Nam	1.64	2.68	3.01	2.45	2.36	2.45	2.48	2.45	2.35	2.16
Former Republic of South Viet-Nam	1.31	2.55	2.68	2.15	1.81	2.01	2.11	2.13	2.04	1.86
Middle South Asia	1.81	2.19	2.44	2.46	2.44	2.60	2.55	2.40	2.19	1.93
Afghanistan	1.48	1.80	1.89	2.35	2.54	2.67	2.69	2.62	2.52	2.35
Bangladesh	2.11	2.41	2.67	2.82	1.71	2.79	2.89	2.79	2.59	2.36
Bhutan	1.49	1.73	1.93	2.13	2.31	2.47	2.52	2.44	2.44	2.20
India	1.71	2.15	2.40	2.37	2.43	2.48	2.40	2.25	2.03	1.77
India-Sikkim	1.62	1.75	1.78	2.62	2.00	2.10	2.10	2.20	2.20	2.20
Iran	2.35	2.50	2.69	2.79	2.98	3.13	3.08	2.89	2.64	2.35
Maldives	0.95	1.24	1.45	1.88	1.95	2.10	2.15	2.20	2.20	2.20
Nepal	1.42	1.33	1.91	2.12	2.25	2.48	2.57	2.51	2.48	2.21
Pakistan	2.16	2.43	2.68	2.85	3.09	3.24	3.20	3.02	2.74	2.47
Sri Lanka	2.55	2.51	2.42	2.28	2.22	2.01	1.88	1.73	1.53	1.29
Western South Asia	2.69	2.74	2.71	2.78	2.83	2.92	2.92	2.81	2.63	2.36
Bahrain	2.37	2.50	2.66	3.01	3.08	3.17	3.18	3.12	2.99	2.74
Cyprus	1.41	1.56	0.72	1.27	1.23	1.19	1.11	0.93	0.75	0.60
Democratic Yemen	1.89	2.13	2.43	2.74	2.90	2.99	3.01	2.98	2.87	2.64
Iraq	2.74	2.84	3.05	3.19	3.36	3.44	3.40	3.20	3.01	2.81
Israel	6.58	3.80	3.85	2.87	2.88	2.64	2.26	1.87	1.59	1.41
Jordan	3.14	3.16	2.85	3.08	3.29	3.34	3.32	3.17	3.02	2.82
Kuwait	5.37	6.67	10.71	9.40	7.13	5.63	4.66	4.10	3.76	3.36
Lebanon	2.23	2.82	2.94	2.75	3.00	3.16	3.26	3.18	2.95	2.60
Oman	2.28	2.45	2.69	3.02	3.08	3.17	3.18	3.12	2.99	2.74
Palestine Gaza Strip	9.91	2.97	2.54	3.15	3.40	3.50	3.50	3.40	3.10	2.90
Qatar	2.02	2.53	2.84	3.00	3.10	3.17	3.18	3.12	2.99	2.74
Saudi Arabia	1.90	2.12	2.43	2.74	2.94	3.01	3.04	3.00	2.89	2.66
Syrian Arab Republic	2.53	2.79	3.08	3.21	3.00	3.24	3.33	3.19	3.02	2.81
Turkey	2.74	2.85	2.49	2.46	2.48	2.58	2.61	2.53	2.31	1.95
United Arab Emirates	2.21	2.50	4.63	4.73	3.08	3.17	3.18	3.12	2.99	2.74
Yemen	1.90	2.12	2.49	2.79	2.90	2.99	3.01	2.98	2.87	2.64
Europe	0.78	0.84	0.91	0.62	0.60	0.56	0.54	0.54	0.51	0.48
Eastern Europe	0.98	0.79	0.68	0.57	0.64	0.63	0.56	0.50	0.48	0.51
Bulgaria	0.67	0.96	0.83	0.69	0.70	0.63	0.54	0.49	0.49	0.50
Czechoslovakia	1.11	0.84	0.73	0.25	0.62	0.61	0.51	0.44	0.45	0.53
German Democratic Republic[e]	-0.49	-0.80	-0.26	0.05	0.08	0.12	0.16	0.19	0.20	0.25
Hungary	1.02	0.32	0.34	0.36	0.38	0.35	0.22	0.12	0.12	0.18
Poland	1.89	1.61	1.27	0.61	0.83	0.85	0.76	0.61	0.52	0.52
Romania	1.21	1.21	0.67	1.24	0.90	0.81	0.76	0.76	0.79	0.79
Northern Europe	0.37	0.54	0.71	0.44	0.41	0.43	0.42	0.44	0.44	0.44
Channel Islands	0.38	0.74	0.71	1.39	0.85	0.80	0.75	0.70	0.65	0.55
Denmark	0.77	0.63	0.76	0.71	0.39	0.31	0.26	0.25	0.25	0.22
Faeroe Islands	0.95	1.25	1.34	0.85	0.71	0.69	0.67	0.55	0.58	0.52

TABLE 72. RATES OF GROWTH, REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950–2000 *(continued)*

(Percentage)

	1950–1955	1955–1960	1960–1965	1965–1970	1970–1975	1975–1980	1980–1985	1985–1990	1990–1995	1995–2000
Finland	1.10	0.90	0.60	0.18	0.20	0.16	0.09	0.11	0.04	0.01
Iceland	2.00	2.16	1.74	1.22	1.15	1.17	1.14	1.04	0.90	0.78
Ireland	-0.33	-0.60	0.29	0.53	1.17	1.04	1.05	1.02	0.94	0.86
Isle of Man	-1.12	-1.60	0.0	3.05	0.77	0.78	0.75	0.66	0.49	0.33
Norway	0.97	0.88	0.78	0.81	0.66	0.56	0.49	0.43	0.40	0.37
Sweden	0.69	0.59	0.67	0.78	0.61	0.61	0.52	0.47	0.45	0.44
United Kingdom	0.23	0.52	0.73	0.35	0.34	0.38	0.40	0.45	0.45	0.46
Southern Europe	0.82	0.86	0.87	0.69	0.72	0.71	0.68	0.66	0.62	0.57
Andorra	0.0	5.75	11.19	6.11	3.47	2.34	2.02	1.90	1.79	1.76
Albania	2.52	3.02	2.97	2.62	2.70	2.63	2.50	2.22	1.86	1.61
Gibraltar	0.85	0.0	0.82	1.09	0.74	0.65	0.56	0.54	0.40	0.39
Greece	1.03	0.89	0.53	0.56	0.31	0.33	0.31	0.32	0.29	0.24
Holy See	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy	0.60	0.82	0.67	0.61	0.54	0.47	0.42	0.40	0.38	0.36
Malta	0.13	0.93	-0.55	0.35	0.23	0.34	0.27	0.11	-0.09	-0.22
Portugal	0.48	0.50	0.91	-1.36	0.31	0.44	0.54	0.56	0.51	0.43
San Marino	1.48	1.38	2.50	2.43	1.02	0.87	0.84	0.80	0.77	0.82
Spain	0.83	0.84	1.04	1.14	0.96	0.98	0.98	0.98	0.94	0.87
Yugoslavia	1.39	0.98	1.09	0.94	0.91	0.90	0.82	0.74	0.65	0.59
Western Europe	0.84	1.04	1.23	0.70	0.58	0.46	0.48	0.50	0.46	0.40
Austria	0.03	0.29	0.58	0.52	0.24	0.24	0.27	0.32	0.33	0.33
Belgium	0.52	0.63	0.67	0.36	0.43	0.43	0.42	0.37	0.31	0.29
France	0.79	1.01	1.30	0.77	0.87	0.81	0.70	0.61	0.57	0.53
Germany, Federal Republic of[e]	0.94	1.13	1.25	0.56	0.32	0.11	0.27	0.42	0.36	0.27
Liechtenstein	1.38	1.29	3.44	2.19	1.01	0.88	0.92	0.80	0.85	0.74
Luxembourg	0.60	0.58	1.12	0.43	0.18	0.15	0.14	0.13	0.11	0.10
Monaco	-0.93	1.82	0.0	0.17	0.84	0.81	0.70	0.68	0.51	0.43
Netherlands	1.22	1.31	1.37	1.17	0.85	0.73	0.71	0.68	0.62	0.53
Switzerland	1.18	1.48	1.77	1.35	0.84	0.60	0.48	0.47	0.44	0.40
Oceania	2.25	2.18	2.09	1.97	1.96	1.94	1.86	1.73	1.59	1.45
Australia-New Zealand	2.33	2.18	1.99	1.85	1.83	1.78	1.66	1.49	1.34	1.24
Australia	2.34	2.20	1.98	1.95	1.91	1.84	1.71	1.52	1.34	1.23
New Zealand	2.26	2.10	2.05	1.41	1.45	1.47	1.44	1.36	1.30	1.27
Melanesia	1.64	1.98	2.30	2.40	2.41	2.57	2.64	2.64	2.50	2.17
New Caledonia	3.23	3.22	3.11	3.31	2.84	2.89	2.88	2.79	2.68	2.34
New Hebrides	2.18	2.34	2.44	2.62	2.78	2.74	3.01	2.79	2.67	2.35
Norfolk Island	0.0	3.65	5.75	4.46	0.0	0.0	0.0	0.0	0.0	0.0
Papua New Guinea	1.56	1.92	2.24	2.33	2.36	2.53	2.60	2.62	2.47	2.14
Solomon Islands	1.66	2.01	2.60	2.67	2.81	2.89	2.88	2.79	2.67	2.35
Micronesia-Polynesia	2.80	2.73	2.91	2.65	2.55	2.55	2.45	2.28	2.12	1.86
Micronesia	2.69	1.71	2.29	2.69	2.70	2.71	2.59	2.36	2.26	2.06
Gilbert Island and Tuvalu	1.88	2.20	1.67	2.27	3.38	2.94	2.59	2.41	2.33	2.08
Guam	3.00	-0.45	2.11	3.47	2.34	2.69	2.75	2.46	2.30	2.16
Nauru	3.11	3.35	3.33	2.43	1.38	1.29	1.21	1.14	1.08	1.03
Niue Island	1.24	1.17	1.32	1.24	1.54	1.43	1.33	1.25	1.18	1.11
Pacific Islands	2.93	3.23	2.80	2.54	2.90	2.86	2.69	2.43	2.34	2.09
Other Micronesia[f]	2.71	2.88	1.64	1.47	1.45	1.31	1.37	1.36	1.39	1.40
Polynesia	2.84	3.05	3.10	2.64	2.50	2.50	2.41	2.26	2.08	1.80
American Samoa	0.53	1.52	2.73	3.07	3.13	3.24	3.32	3.09	2.81	2.38
Cook Islands	1.89	2.77	1.82	1.58	3.11	3.19	3.33	3.11	2.77	2.41
Fiji	3.01	3.18	3.27	2.29	2.08	1.91	1.69	1.50	1.37	1.20
French Polynesia	2.78	2.78	2.99	3.60	3.12	3.27	3.29	3.09	2.81	2.38
Tonga	2.86	2.90	3.28	3.76	3.12	3.27	3.28	3.09	2.80	2.39
Wallis and Futuna Islands	1.19	1.40	2.05	1.86	0.0	0.0	0.0	0.0	0.0	0.0
Western Samoa	3.05	3.29	2.84	2.64	3.13	3.28	3.26	3.09	2.82	2.38
USSR	1.71	1.77	1.49	1.00	0.99	1.00	0.98	0.85	0.73	0.67

[a] Including Rodrigues, Agalega and St. Brandon.
[b] Including Ascension and Tristan da Cunha.
[c] Excluding Panama Canal Zone.
[d] Including West Irian.
[e] See table 71, foot-note *e*.
[f] Including Christmas Island, Midway Islands, Tokelau, Wake Island, Cocos (Keeling) Islands, Canton and Enderbury Islands, Johnston Island and Pitcairn Island.

TABLE 73. CRUDE DEATH RATES, REGIONS AND COUNTRIES OF THE WORLD, 1950–2000*

(Deaths per 1,000 population)

	1950–1955	1955–1960	1960–1965	1965–1970	1970–1975	1975–1980	1980–1985	1985–1990	1990–1995	1995–2000
World Total	18.8	16.4	14.7	13.5	12.8	11.9	11.0	10.2	9.5	8.9
More developed regions	10.1	9.3	9.0	9.1	9.2	9.4	9.6	9.8	9.9	9.9
Less developed regions	23.3	19.9	17.4	15.5	14.3	12.8	11.5	10.4	9.4	8.6
Africa	26.7	24.9	23.1	21.4	19.8	18.0	16.2	14.5	12.9	11.4
Eastern Africa	28.6	26.4	24.1	22.3	20.7	19.0	17.1	15.4	13.7	12.1
Burundi	31.2	29.9	29.0	27.0	24.7	21.3	18.8	16.8	14.9	13.1
Comoros	32.7	30.2	27.2	24.0	21.7	19.5	17.2	15.3	12.9	12.1
Ethiopia	33.9	31.9	29.6	27.7	25.8	24.8	23.0	21.2	19.2	17.2
Kenya	20.5	19.1	17.4	16.5	16.0	14.3	12.6	11.1	9.8	8.6
Madagascar	29.3	27.9	25.3	23.1	21.1	19.1	17.1	15.2	13.5	11.9
Malawi	31.0	30.2	29.4	26.8	23.7	21.1	18.9	16.8	14.9	13.1
Mauritius	15.1	11.9	9.7	8.6	7.7	7.0	6.6	6.5	6.6	6.7
Mozambique	30.3	26.2	22.1	20.6	20.1	18.2	16.7	15.3	13.9	12.5
Réunion	18.1	14.1	11.0	9.3	7.5	7.3	7.0	6.8	6.7	6.8
Rwanda	31.2	29.0	26.1	24.0	23.6	21.9	19.8	17.6	15.4	13.2
Somalia	28.7	26.4	24.6	23.0	21.7	20.0	18.3	16.4	14.6	12.9
Southern Rhodesia	18.8	17.7	16.6	15.5	14.4	12.9	11.6	10.2	9.1	8.1
Uganda	24.5	21.9	19.6	17.6	15.9	14.3	12.6	11.2	9.9	8.7
United Republic of Tanzania	28.2	26.0	23.7	22.2	20.1	18.0	16.1	14.2	12.6	11.1
Zambia	24.3	21.9	21.0	20.7	20.3	18.1	16.4	14.6	13.0	11.5
Middle Africa	28.4	26.9	25.3	23.4	21.7	19.8	18.1	16.4	14.6	13.0
Angola	33.0	31.5	29.8	27.5	24.5	22.5	20.6	18.8	16.9	15.1
Central African Empire	31.1	29.9	27.6	25.1	22.5	20.3	18.7	16.9	15.1	13.5
Chad	28.4	26.7	25.0	24.1	24.0	22.8	21.6	19.6	17.7	16.0
Congo	27.7	27.0	24.7	22.8	20.8	18.9	17.2	15.4	13.7	12.1
Equatorial Guinea	25.6	24.6	23.3	22.1	19.7	17.9	16.6	15.4	14.2	13.0
Gabon	30.0	27.4	26.3	25.0	22.2	20.3	18.8	18.0	17.4	16.6
United Republic of Cameroon	28.8	27.1	25.0	22.8	22.0	20.4	19.2	17.5	15.7	14.0
Zaire	26.7	25.3	24.0	22.3	20.5	18.5	16.7	15.0	13.3	11.8
Northern Africa	23.6	21.2	19.1	17.0	15.2	13.4	11.8	10.4	9.1	8.0
Algeria	23.9	21.2	19.4	17.4	15.4	13.3	11.5	10.0	8.5	7.2
Egypt	21.6	19.9	18.0	15.9	14.0	12.4	11.1	10.0	9.0	8.3
Libyan Arab Jamahiriya	22.5	19.9	18.3	16.8	14.7	13.0	11.5	10.1	8.8	7.7
Morocco	25.7	22.7	19.6	17.4	15.7	13.4	11.6	10.0	8.5	7.4
Sudan	26.3	23.0	21.3	19.0	17.5	15.7	14.0	12.3	10.7	9.2
Tunisia	22.7	20.3	17.9	15.8	13.8	12.6	11.5	10.0	8.5	7.3
Southern Africa	18.4	18.1	17.9	17.3	16.2	14.5	12.8	11.3	10.0	9.0
Botswana	28.9	27.4	26.1	24.6	23.0	20.1	17.7	15.3	13.3	11.5
Lesotho	25.3	23.5	22.4	21.0	19.7	17.9	15.9	14.2	12.6	11.3
Namibia	25.0	22.5	20.0	18.0	16.7	15.0	13.4	11.8	10.5	9.1
South Africa	17.1	17.0	17.0	16.6	15.5	13.9	12.3	10.8	9.6	8.7
Swaziland	28.8	27.5	25.6	23.5	21.8	19.4	17.3	14.9	12.8	11.0
Western Africa	28.7	27.2	25.7	24.4	23.0	21.0	19.2	17.2	15.3	13.5
Benin	32.4	30.5	27.7	25.5	23.0	20.8	18.6	16.6	14.5	12.4
Cape Verde	18.0	17.0	16.5	15.2	13.7	11.8	10.7	9.8	9.1	8.6
Gambia	30.0	28.6	26.6	25.7	24.1	22.9	21.4	19.3	17.3	15.4
Ghana	27.5	26.5	25.0	23.7	21.9	19.1	17.0	15.0	13.1	11.4
Guinea	31.6	29.2	27.7	25.1	22.9	20.7	18.8	16.9	15.0	13.2
Guinea-Bissau	35.1	33.1	30.1	27.3	25.1	23.2	21.3	19.3	17.4	15.5
Ivory Coast	27.1	25.7	23.9	22.7	20.6	18.7	16.9	15.2	13.5	11.8
Liberia	29.1	26.7	24.6	22.5	20.7	19.0	17.1	15.3	13.6	12.0
Mali	33.1	31.7	29.0	26.6	25.9	24.0	22.6	20.4	18.4	16.5
Mauritania	27.8	26.4	24.9	24.4	24.9	23.5	22.3	20.2	18.2	16.3
Niger	29.4	27.4	25.8	25.5	25.5	24.1	22.7	20.5	18.4	16.4
Nigeria	27.5	26.2	25.0	24.0	22.7	20.7	18.8	16.9	15.1	13.4
Senegal	29.0	26.0	24.7	24.0	23.9	22.9	21.5	19.4	17.3	15.2
Sierra Leone	27.0	25.8	24.3	22.7	20.7	18.7	16.8	15.0	13.4	11.8
Togo	31.3	30.7	27.7	25.5	23.3	21.0	18.8	16.8	14.9	12.9
Upper Volta	33.5	31.9	29.8	28.0	25.8	24.8	22.8	21.1	18.8	16.6
Latin America	14.4	12.5	11.2	10.1	9.2	8.3	7.5	6.8	6.2	5.7
Caribbean	14.3	12.3	10.9	9.7	9.1	8.5	8.0	7.4	6.9	6.4
Barbados	13.2	10.7	9.7	9.1	8.9	8.8	8.6	8.3	8.0	7.8
Cuba	10.5	9.2	8.3	6.5	5.9	6.0	6.2	6.1	5.9	5.8
Dominican Republic	20.3	17.1	14.2	12.6	11.0	9.5	8.1	6.8	5.6	4.6
Guadeloupe	13.3	10.3	8.4	7.9	7.3	7.0	6.8	6.7	6.6	6.7
Haiti	23.2	20.4	18.5	17.0	16.3	14.6	13.2	11.7	10.3	9.1
Jamaica	11.5	9.8	9.1	7.8	7.3	6.7	6.3	6.1	5.9	5.7
Martinique	12.6	9.9	8.5	7.5	6.8	6.3	5.9	5.8	5.7	5.7
Puerto Rico	9.0	7.1	6.9	6.6	6.6	6.5	6.5	6.6	6.7	6.9
Trinidad and Tobago	11.3	9.6	7.3	6.9	6.7	6.4	6.0	6.0	6.2	6.6
Windward Islands	15.1	13.5	11.6	10.5	8.9	7.7	6.7	6.3	5.8	5.5
Other Caribbean	9.5	8.4	7.3	7.3	7.3	6.8	6.4	6.2	6.0	5.9

TABLE 74. CRUDE BIRTH RATES, REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950–2000

	1950–1955	1955–1960	1960–1965	1965–1970	1970–1975	1975–1980	1980–1985	1985–1990	1990–1995	1995–2000
World total	35.6	34.6	33.7	32.1	31.5	31.1	30.1	28.4	26.8	25.1
More developed regions	22.9	21.9	20.5	18.1	17.2	17.4	17.4	16.8	16.0	15.6
Less developed regions	42.1	40.9	39.9	38.4	37.5	36.4	34.6	32.3	30.2	27.8
Africa	48.1	48.0	47.7	47.2	46.3	45.7	44.8	43.3	41.5	39.1
Eastern Africa	49.3	49.0	48.7	48.5	48.1	47.4	46.4	45.3	44.0	41.9
Burundi	48.4	48.2	47.7	48.1	48.0	47.3	45.6	43.9	41.5	38.3
Comoros	49.2	48.6	48.2	47.5	46.6	44.5	41.1	33.3	24.7	21.5
Ethiopia	51.4	51.0	50.5	50.0	49.4	48.7	48.0	47.2	46.5	45.1
Kenya	48.3	48.7	49.0	49.0	48.7	48.0	46.6	45.5	44.2	41.8
Madagascar	50.0	50.2	49.4	50.0	50.2	49.3	48.3	47.1	46.2	44.8
Malawi	49.0	49.1	49.6	49.0	47.7	46.3	45.4	44.2	41.8	39.5
Mauritius[a]	46.2	41.0	38.9	32.9	24.4	21.4	20.4	20.3	19.6	18.0
Mozambique	42.5	42.5	43.3	43.3	43.1	41.3	41.5	41.6	41.3	40.0
Réunion	49.4	46.7	44.0	37.5	31.2	25.5	23.0	21.5	21.0	19.6
Rwanda	52.8	52.2	51.4	50.0	50.0	51.3	49.8	47.5	44.7	40.2
Somalia	47.3	47.3	47.8	47.5	47.2	48.3	47.9	45.8	43.7	41.2
Southern Rhodesia	48.7	49.2	47.9	48.4	47.9	48.3	47.7	46.1	44.0	41.4
Uganda	47.2	46.2	45.7	45.3	45.2	44.7	43.4	42.0	40.0	37.4
United Republic of Tanzania	51.6	51.3	50.5	50.5	50.2	49.3	47.6	46.1	44.7	42.2
Zambia	49.6	49.3	49.6	49.8	51.5	49.4	49.1	48.4	47.5	45.8
Middle Africa	46.7	46.5	45.9	45.6	44.4	44.2	44.3	43.2	41.9	40.5
Angola	51.0	50.5	49.5	48.2	47.2	47.0	46.8	46.0	45.1	43.6
Central African Empire	46.2	46.1	45.7	45.0	43.4	43.0	44.0	42.7	41.1	39.5
Chad	46.0	45.5	45.0	44.5	44.0	44.0	43.0	41.2	39.6	38.2
Congo	44.6	43.3	43.7	44.4	45.1	44.9	45.2	43.8	42.6	41.4
Equatorial Guinea	35.1	35.2	35.7	35.0	36.8	35.5	35.1	35.0	33.6	31.7
Gabon	32.8	32.8	31.1	32.5	32.2	27.9	26.5	27.0	27.7	27.6
United Republic of Cameroon	43.7	43.2	42.7	41.5	40.4	40.9	43.0	42.0	40.4	39.1
Zaire	47.2	47.3	46.7	46.8	45.2	44.9	44.5	43.4	42.1	40.6
Northern Africa	48.0	47.8	46.9	45.3	43.3	42.0	40.5	38.3	35.2	31.6
Algeria	51.0	50.8	50.4	49.6	48.7	47.4	46.1	43.5	38.7	33.1
Egypt	44.9	44.0	43.1	41.1	37.8	35.5	33.7	31.8	29.9	28.3
Libyan Arab Jamahiriya	48.0	48.5	47.3	45.9	45.0	44.3	42.8	40.4	37.4	34.5
Morocco	50.4	50.4	50.1	48.2	46.2	44.5	42.9	40.3	36.5	32.0
Sudan	50.0	51.4	49.3	48.5	47.8	47.5	46.0	43.6	40.2	35.8
Tunisia	46.5	46.7	46.5	42.9	40.0	41.0	40.6	37.9	33.5	29.2
Southern Africa	41.7	42.0	43.0	43.1	43.0	43.2	41.3	38.9	37.6	36.2
Botswana	46.6	46.5	46.0	46.2	45.6	47.9	47.5	45.2	42.3	39.9
Lesotho	38.9	38.8	37.4	38.8	39.0	40.1	38.8	37.4	35.4	33.5
Namibia	47.0	46.5	46.0	45.5	45.0	44.7	43.7	42.5	41.1	39.0
South Africa	41.4	41.8	43.0	43.0	42.9	43.1	41.1	38.6	37.4	36.1
Swaziland	51.9	51.4	50.5	50.0	49.0	49.2	47.7	44.1	39.8	34.1
Western Africa	49.0	49.0	49.3	49.0	48 7	48.5	47.9	46.7	45.0	42.7
Benin	51.7	51.0	50.2	50.9	49.9	48.6	46.9	44.5	40.1	33.7
Cape Verde	46.3	46.8	45.8	41.5	32.8	29.8	27.4	25.3	22.9	21.0
Gambia	42.3	42.4	42.9	43.0	43.3	43.0	41.9	40.6	38.5	35.1
Ghana	51.0	50.5	50.0	49.5	48.8	48.6	48.4	46.8	44.2	39.8
Guinea	47.7	47.0	47.3	47.2	46.6	46.1	45.0	43.6	41.1	38.4
Guinea-Bissau	40.1	40.9	39.8	40.7	40.1	40.8	40.4	38.6	37.0	34.1
Ivory Coast	46.0	46.0	46.1	46.0	45.6	45.3	44.3	43.1	40.7	38.0
Liberia	45.0	43.8	42.8	42.8	43.6	44.2	42.5	40.9	39.3	36.8
Mali	50.1	50.1	49.4	49.8	50.1	49.4	48.8	47.7	46.8	45.2
Mauritania	44.8	44.7	44.9	44.8	44.8	44.7	44.7	43.7	42.2	40.1
Niger	52.4	52.3	52.4	52.2	52.2	51.7	51.1	50.1	48.9	46.9
Nigeria	49.1	49.4	50.0	49.6	49.3	49.2	48.9	47.7	46.4	44.8
Senegal	48.0	47.9	47.7	47.5	47.6	47.2	46.1	44.8	42.3	38.8
Sierra Leone	44.6	44.6	44.8	44.8	44.7	44.4	43.2	41.5	39.8	36.8
Togo	50.8	50.9	51.0	50.9	50.6	49.7	48.3	46.6	44.4	40.0
Upper Volta	49.6	49.6	49.7	49.4	48.5	47.9	46.9	45.9	43.2	39.6

TABLE 74. CRUDE BIRTH RATES, REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950–2000 (*continued*)

	1950–1955	1955–1960	1960–1965	1965–1970	1970–1975	1975–1980	1980–1985	1985–1990	1990–1995	1995–2000
Latin America	41.0	40.5	39.5	38.1	36.9	36.1	35.0	33.4	31.5	29.6
Caribbean	36.9	36.9	37.5	34.9	32.8	31.9	31.2	30.1	28.4	26.1
Barbados	32.5	31.8	29.6	24.1	21.6	22.0	21.1	19.4	17.7	16.2
Cuba	30.3	30.1	34.8	31.4	29.1	27.8	27.2	26.3	24.6	22.8
Dominican Republic	50.1	49.6	47.4	47.1	45.8	44.7	43.5	41.8	39.8	37.5
Guadeloupe	38.6	38.5	36.3	32.5	29.3	28.0	25.5	21.9	19.8	18.4
Haiti	40.3	39.4	38.1	37.1	35.8	36.2	35.6	34.1	31.2	25.6
Jamaica	34.8	39.2	39.6	37.3	33.2	30.6	28.8	27.7	25.9	22.7
Martinique	39.0	39.4	35.3	30.4	29.7	27.2	24.8	21.6	19.6	18.3
Puerto Rico	36.6	33.7	31.2	26.7	22.6	21.4	20.4	19.2	17.8	16.4
Trinidad and Tobago	37.7	38.3	37.0	28.0	25.3	23.2	21.8	19.9	18.6	17.0
Windward Islands[b]	40.0	47.4	43.1	39.3	35.9	33.5	30.8	27.6	24.5	21.7
Other Caribbean[c]	35.3	35.4	33.2	30.9	30.0	28.7	26.8	25.2	22.8	20.6
Middle America	47.3	46.6	45.3	43.3	42.2	41.6	40.8	39.1	36.9	34.8
Costa Rica	47.6	48.3	44.9	37.3	33.4	32.4	31.2	29.1	27.1	26.4
El Salvador	48.1	48.9	48.0	44.2	42.2	41.1	40.0	38.3	36.1	33.5
Guatemala	48.7	50.5	45.5	44.6	42.8	41.4	39.4	37.2	35.0	32.7
Honduras	54.6	53.3	51.8	51.1	49.3	46.3	44.0	42.2	40.5	38.5
Mexico	46.6	45.6	44.7	42.8	42.0	41.7	41.1	39.5	37.3	35.2
Nicaragua	53.4	51.3	50.0	48.6	48.3	46.6	44.6	42.4	40.2	38.1
Panama	40.7	41.2	41.2	38.4	36.2	35.5	34.6	33.1	31.1	29.2
Temperate South America	27.5	27.3	26.1	24.0	23.3	22.8	21.9	20.7	19.3	18.1
Argentina	25.4	24.3	23.0	22.0	21.8	21.4	20.4	19.4	18.3	17.4
Chile	35.2	37.5	35.7	30.0	27.9	27.2	26.2	24.4	22.0	19.8
Uruguay	23.2	22.8	22.4	21.8	20.4	19.8	19.3	18.7	17.9	16.8
Tropical South America	43.1	42.2	40.9	39.8	38.3	37.0	35.4	33.5	31.5	29.3
Bolivia	47.1	46.0	44.8	43.9	43.7	43.9	41.8	39.8	38.0	36.3
Brazil	41.4	40.2	38.8	38.0	37.1	36.0	34.5	32.9	31.2	29.4
Colombia	46.4	45.7	45.0	43.5	40.6	38.3	36.0	33.4	30.3	26.9
Ecuador	46.0	46.6	45.4	44.6	41.8	39.7	37.9	36.1	33.8	31.2
Guyana	42.9	43.6	41.6	36.5	32.4	31.1	28.5	25.3	22.0	19.5
Paraguay	45.5	43.8	42.2	41.4	39.8	39.1	37.9	36.2	34.0	31.6
Peru	44.2	44.7	42.7	43.0	41.0	39.2	37.4	35.5	33.5	31.4
Surinam	43.8	44.4	44.0	43.6	41.6	41.9	42.2	39.6	35.0	30.3
Venezuela	46.5	46.3	44.6	39.6	36.1	35.6	34.8	32.7	29.6	26.4
Northern America	25.1	25.1	22.8	18.3	16.5	17.5	18.4	17.5	15.9	15.1
Canada	27.8	27.9	25.3	18.8	18.6	20.4	20.8	19.4	17.6	17.2
United States of America	24.8	24.8	22.6	18.3	16.2	17.2	18.1	17.3	15.7	14.9
East Asia	35.6	30.9	28.5	27.0	26.2	24.6	22.3	19.6	18.8	18.1
China	37.3	32.1	29.5	27.9	26.9	25.2	22.8	19.9	19.0	18.3
Japan	23.7	18.1	17.2	17.8	19.2	18.0	15.4	13.9	13.9	14.5
Other East Asia	36.8	41.9	38.5	33.0	30.2	28.7	27.8	25.9	23.2	21.0
Hong Kong	33.1	36.3	33.1	23.5	19.4	19.4	19.9	18.9	16.9	15.5
Korea	37.0	42.4	39.0	33.7	30.9	29.3	28.2	26.3	23.5	21.2
Democratic People's Republic of Korea	37.0	42.5	39.5	38.8	35.7	32.7	31.0	29.1	26.6	24.4
Republic of Korea	37.0	42.4	38.7	31.4	28.8	27.4	26.6	24.8	22.1	19.8
Mongolia	40.0	41.0	41.2	41.9	38.8	36.7	34.5	32.1	28.8	25.7
South Asia	44.0	45.1	44.8	42.9	41.9	40.7	38.4	35.4	32.0	28.4
Eastern South Asia	44.7	45.6	44.9	43.4	42.4	40.6	38.3	35.1	31.7	28.1
Burma	43.6	43.6	42.3	40.3	39.5	38.0	36.7	34.5	31.8	28.9
Democratic Kampuchea	49.4	49.4	48.0	46.9	46.7	46.5	44.4	39.8	35.8	32.0
East Timor	44.4	45.6	45.6	44.7	44.3	44.1	41.6	38.5	35.2	31.7
Indonesia[d]	45.0	47.0	46.9	44.9	42.9	40.9	38.1	34.2	30.6	26.7
Lao People's Democratic Republic	44.2	43.3	44.0	45.0	44.6	44.1	41.5	38.5	35.3	31.9
Malaysia	45.4	45.7	44.3	40.1	38.7	37.8	35.2	32.2	26.5	22.6
Philippines	45.3	44.8	44.2	44.2	43.8	41.2	38.4	35.2	32.1	28.6
Singapore	44.4	41.6	34.0	24.9	21.2	21.4	21.1	19.8	17.1	14.9
Thailand	46.9	47.2	44.9	43.7	43.4	41.6	39.1	35.8	32.5	29.1
Viet Nam	41.3	41.5	41.5	41.5	41.5	40.5	39.3	37.4	34.8	31.5
Former Democratic Republic of Viet-Nam	41.3	41.5	41.5	41.5	41.4	40.1	38.7	36.8	34.4	31.3
Former Republic of South Viet-Nam	41.3	41.5	41.5	41.5	41.7	41.0	40.0	38.2	35.4	31.8

TABLE 14. CRUDE BIRTH RATES, REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950–2000 (*continued*)

	1950–1955	1955–1960	1960–1965	1965–1970	1970–1975	1975–1980	1980–1985	1985–1990	1990–1995	1995–2000
Middle South Asia	43.9	45.1	44.9	42.7	41.7	40.7	38.4	35.4	32.0	28.3
Afghanistan	49.5	48.5	47.6	49.8	49.2	48.1	46.1	43.2	40.1	36.5
Bangladesh	49.2	50.3	50.8	49.7	49.5	49.7	48.1	44.9	40.7	36.4
Bhutan	46.3	45.6	44.8	44.4	43.6	43.2	41.7	39.0	37.4	33.3
India	42.3	44.1	44.0	41.3	39.9	38.7	36.2	33.3	29.9	26.3
Iran	48.0	47.0	46.5	45.3	45.3	44.8	42.5	39.0	35.0	31.0
Nepal	46.1	46.5	45.0	44.4	42.9	43.3	42.4	39.8	37.9	33.4
Pakistan	49.6	48.8	48.1	47.1	47.4	46.8	44.4	40.8	36.5	32.5
Sri Lanka	38.5	36.6	34.7	31.5	28.6	25.9	24.4	22.8	20.8	18.7
Western South Asia	46.2	45.9	44.1	43.5	42.8	42.0	40.7	38.2	35.2	31.4
Cyprus	27.4	25.7	25.0	23.3	22.2	21.9	21.0	19.4	17.7	16.3
Democratic Yemen	50.9	50.7	50.4	50.0	49.6	48.3	46.6	44.4	41.4	37.4
Iraq	49.4	49.4	49.3	48.8	48.1	47.3	45.3	41.7	38.6	35.5
Israel	32.5	27.9	25.5	25.5	26.4	26.4	24.4	21.9	20.3	19.4
Jordan	45.4	46.8	47.5	47.5	47.6	46.2	44.3	41.3	38.5	35.5
Kuwait	45.2	44.3	44.5	47.5	47.1	45.4	43.3	41.2	39.3	36.3
Lebanon	41.0	43.4	42.7	39.3	39.8	40.4	40.5	38.7	35.6	31.4
Saudi Arabia	50.9	50.7	50.4	50.0	49.5	48.3	46.5	44.3	41.4	37.4
Syrian Arab Republic	46.6	46.6	47.4	47.8	45.4	45.6	44.6	41.6	38.5	35.3
Turkey	44.9	44.7	41.0	40.1	39.4	38.1	37.1	34.7	31.3	26.5
Yemen	50.9	50.7	50.7	50.3	49.6	48.3	46.6	44.4	41.4	37.4
Other Western South Asia[e]	51.1	51.0	50.7	50.4	49.6	48.5	46.8	44.3	41.3	37.3
Europe	19.8	19.2	18.7	17.7	16.1	16.1	16.1	16.1	15.7	15.3
Eastern Europe	23.7	21.4	17.5	16.8	16.6	16.8	16.4	15.7	15.3	15.3
Bulgaria	21.7	18.7	16.9	15.8	16.2	15.9	15.6	15.6	15.8	16.0
Czechoslovakia	22.0	18.5	16.3	15.5	16.9	17.3	16.6	16.0	15.8	16.3
German Democratic Republic[f]	16.6	16.1	17.4	15.1	14.0	14.6	15.1	14.9	14.2	13.8
Hungary	21.1	17.8	13.6	14.3	15.2	15.4	14.4	13.5	13.5	13.8
Poland	30.1	27.2	20.1	16.6	16.8	17.6	17.0	15.5	14.5	14.3
Romania	24.9	22.9	16.7	21.3	19.3	18.2	17.6	17.5	17.7	17.5
Northern Europe	16.7	16.7	17.9	17.3	15.8	16.1	16.1	16.3	16.1	15.8
Denmark	17.9	16.8	17.0	16.6	14.0	13.7	13.6	13.9	14.0	13.7
Finland	22.8	19.9	18.1	16.3	13.2	13.0	12.8	12.5	12.2	12.1
Iceland	27.9	28.3	26.1	22.5	19.2	19.3	19.1	18.2	16.9	15.9
Ireland	21.4	21.1	21.8	21.5	22.1	21.9	21.5	20.8	19.7	18.4
Norway	18.7	18.1	17.4	17.7	16.7	16.2	15.7	15.4	15.2	14.9
Sweden	15.5	14.5	14.5	15.0	14.2	14.7	14.3	14.1	14.2	14.3
United Kingdom	15.9	16.4	18.2	17.6	16.1	16.5	16.6	17.0	16.8	16.5
Southern Europe	21.2	20.8	20.7	19.6	17.7	17.3	17.2	17.1	16.7	16.2
Albania	38.0	40.9	39.3	34.5	33.4	32.4	30.7	27.8	24.1	21.5
Greece	19.4	19.3	18.1	18.0	15.4	15.4	15.2	15.3	15.1	14.6
Italy	18.3	18.0	18.8	18.3	16.0	15.2	14.9	15.0	14.9	14.6
Malta	29.3	26.7	22.6	16.6	17.5	18.7	18.1	16.5	14.6	13.7
Portugal	24.1	24.2	24.0	21.4	18.4	18.0	18.2	17.8	16.9	15.9
Spain	20.3	21.3	21.5	20.5	19.5	19.3	19.4	19.5	19.1	18.6
Yugoslavia	28.8	24.8	22.1	19.8	18.2	18.3	17.8	17.2	16.5	16.1
Western Europe	17.6	17.6	18.2	17.0	14.6	14.4	14.9	15.2	14.7	14.1
Austria	15.0	16.8	18.5	17.3	14.7	14.8	15.2	15.4	15.1	14.5
Belgium	16.7	17.1	17.1	15.5	14.8	15.4	15.6	15.2	14.4	14.1
France	19.5	18.4	18.0	17.2	17.0	17.0	16.1	15.4	15.1	14.9
Germany, Federal Republic of[f]	15.8	16.5	18.0	16.6	12.0	11.6	13.5	15.0	14.3	13.1
Luxembourg	14.7	15.8	16.0	14.7	13.5	13.6	13.9	14.0	13.8	13.5
Netherlands	22.1	21.3	20.9	19.2	16.8	16.1	16.2	16.1	15.6	14.8
Switzerland	17.3	17.5	18.5	17.7	14.7	14.0	13.8	13.9	13.9	13.6

TABLE 74. CRUDE BIRTH RATES, REGIONS, COUNTRIES AND AREAS OF THE WORLD, 1950–2000 (*continued*)

	1950–1955	1955–1960	1960–1965	1965–1970	1970–1975	1975–1980	1980–1985	1985–1990	1990–1995	1995–2000
Oceania	27.6	27.4	26.7	24.4	24.8	25.1	24.7	23.7	22.5	21.2
Australia-New Zealand	23.5	23.3	22.6	20.3	21.2	21.6	21.2	20.2	19.2	18.7
Australia	23.0	22.6	21.9	19.8	21.0	21.4	21.0	19.9	18.9	18.3
New Zealand	25.7	26.3	25.9	22.6	22.3	22.5	22.3	21.5	20.9	20.6
Melanesia	44.0	44.1	43.7	42.4	40.7	40.7	39.8	38.2	35.3	30.5
Papua New Guinea	44.4	44.3	43.7	42.4	40.6	40.8	39.9	38.5	35.4	30.5
Other Melanesia[g]	40.9	42.5	43.4	43.1	41.2	40.2	39.0	36.7	34.4	30.3
Micronesia-Polynesia	44.6	45.4	41.9	37.0	32.9	32.1	30.7	28.5	26.7	24.0
Micronesia[h]	38.8	40.4	39.0	37.4	35.9	34.9	32.9	29.9	28.5	26.3
Polynesia	46.5	47.0	42.7	36.9	32.0	31.3	30.0	28.1	26.1	23.3
Fiji	44.3	44.7	39.4	32.0	25.0	23.2	21.1	19.4	18.4	17.1
Other Polynesia[i]	49.3	50.2	47.3	43.4	40.9	41.1	40.2	37.3	33.6	28.9
USSR	26.3	25.3	22.3	17.6	17.8	18.4	18.7	17.8	16.8	16.3

Note: Data for small countries or areas, generally those with a population of 250,000 or less in 1970, are not given in this table separately. They have been included in the regional population figures.

[a] Including Agalega, Rodrigues and St. Brandon.

[b] Including Dominica, Grenada, St. Lucia and St. Vincent.

[c] Including Antigua, Bahamas, British Virgin Islands, Cayman Islands, United States Virgin Islands, Montserrat, Netherlands Antilles, St. Kitts-Nevis-Anguilla and Turks and Caicos Islands.

[d] Including West Irian.

[e] Including Bahrain, Oman, Qatar and United Arab Emirates.

[f] See table 71, foot-note *e*.

[g] Including Solomon Islands, New Caledonia, New Hebrides and Norfolk Islands.

[h] Including Canton and Enderbury Islands, Christmas Island, Cocos (Keeling) Islands, Gilbert Islands and Tuvalu, Guam, Johnston Island, Midway Islands, Nauru, Niue, Pacific Islands, Pitcairn Island, Tokelau and Wake Island.

[i] Including American Samoa, Cook Islands, French Polynesia, Samoa, Tonga and Wallis and Futuna Islands.

TABLE 75. EXPECTATION OF LIFE AT BIRTH, 1950–1975*

	1950–1955			1955–1960			1960–1965			1965–1970			1970–1975**		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Africa	36.1	34.9	37.5	38.5	37.1	39.9	40.8	39.4	42.3	43.0	41.6	44.5	45.0	43.5	46.6
Eastern Africa	34.7	33.2	36.3	37.2	35.7	38.8	39.8	38.3	41.5	42.1	40.5	43.8	43.8	42.2	45.4
Burundi	31.3	30.0	32.6	33.5	31.9	35.1	36.0	34.4	37.6	38.5	36.9	40.1	39.0	37.5	40.6
Comoros	32.5	31.1	34.0	35.0	33.5	36.5	37.5	36.5	39.6	40.0	38.5	41.6	42.5	40.9	44.1
Ethiopia	31.0	29.6	32.5	33.5	32.0	35.0	36.5	35.0	38.1	38.0	36.5	39.6	38.0	36.5	39.6
Kenya	40.0	38.4	41.6	42.5	40.9	44.1	45.0	43.4	46.6	47.5	45.9	49.1	50.0	48.3	51.7
Madagascar	33.5	31.9	35.1	35.9	34.4	37.6	38.4	36.9	40.1	40.9	39.4	42.6	43.5	41.9	45.1
Malawi	33.5	32.0	35.0	35.0	33.5	36.5	36.5	35.0	38.1	38.5	37.0	40.1	41.0	39.4	42.6
Mauritius	55.0	53.5	56.5	57.6	56.1	59.2	60.4	58.8	62.0	63.2	61.5	64.9	65.5	63.7	67.4
Mozambique	33.5	31.9	35.1	36.0	34 4	37.6	38.5	36.9	40.1	41.0	39.4	42.6	43.5	41.9	45.1
Réunion	52.6	51.2	54.0	55.0	53.6	56.6	57.6	56.1	59.2	60.5	57.5	63.5	63.0	61.2	64.9
Rwanda	33.5	31.9	35.1	36.0	34.4	37.6	38.5	36.9	40.1	41.0	39.4	42.6	41.0	39.4	42.6
Somalia	33.5	31.9	35.1	35.1	33.6	36.8	36.8	35.2	38.4	38.5	36.9	40.1	41.0	39.4	42.6
Southern Rhodesia	41.8	40.2	43.4	44.3	42.7	45.9	46.8	45.2	48.5	48.9	47.3	50.5	51.5	49.8	53.3
Uganda	40.0	38.5	41.6	42.5	40.9	44.1	45.0	43.4	46.6	47.5	45.9	49.2	50.0	48.3	51.7
United Republic of Tanzania	34.2	32.7	35.9	36.7	35.2	38.4	39.2	37.6	40.9	41.8	40.2	43.4	44.5	42.9	46.1
Zambia	36.0	34.4	37.6	38.5	36.9	40.1	41.0	39.4	42.6	43.5	41.9	45.1	44.5	42.9	46.1
Middle Africa	35.2	33.7	36.7	36.8	35.3	38.4	38.5	37.0	40.1	40.4	38.9	42.0	41.9	40.3	43.5
Angola	30.0	28.6	31.5	32.0	30.6	33.5	34.0	32.5	35.5	36.0	34.5	37.5	38.5	37.0	40.1
Central African Empire	33.0	31.5	34.5	35.0	33.5	36.5	37.0	35.5	38.6	39.0	37.5	40.6	41.0	39.4	42.6
Chad	31.3	30.0	32.6	33.5	31.9	35.1	36.0	34.4	37.6	38.0	36.5	39.6	38.5	37.0	40.1
Congo	33.5	31.9	35.1	35.9	34.4	37.6	38.4	36.9	40.1	41.0	39.4	42.6	43.5	41.9	45.1
Equatorial Guinea	33.5	31.9	35.1	36.0	34.4	37.6	38.5	36.9	40.1	41.0	39.4	42.6	43.5	41.9	45.1
Gabon	31.3	30.0	32.6	33.5	31.9	35.1	36.0	34.4	37.6	38.5	36.9	40.1	41.0	39.4	42.6
United Republic of Cameroon	33.5	31.9	35.1	35.9	34.4	37.6	38.4	36.9	40.1	41.0	39.4	42.6	41.0	39.4	42.6
Zaire	38.5	37.0	40.1	39.5	38.0	41.1	40.5	39.0	42.1	42.0	40.4	43.6	43.5	41.9	45.1
Northern Africa	42.0	41.0	43.1	44.5	43.4	45.6	47.0	45.8	48.2	49.5	48.2	50.8	52.0	50.6	53.4
Algeria	43.1	42.1	44.2	45.6	44.5	46.8	48.1	46.9	49.4	50.7	49.3	52.2	53.2	51.7	54.8
Egypt	42.4	41.2	43.6	44.9	43.7	46.1	47.4	46.2	48.6	49.9	48.2	51.1	52.4	51.2	53.6
Libyan Arab Jamahiriya	42.9	41.9	43.9	45.4	44.3	46.6	47.9	46.7	49.2	50.4	49.0	51.8	52.9	51.4	54.5
Morocco	42.9	41.9	44.0	45.4	44.3	46.6	47.9	46.7	49.2	50.4	49.0	51.8	52.9	51.4	45.5
Sudan	38.6	37.9	39.3	41.1	40.2	42.0	43.6	42.6	44.7	46.1	44.9	47.3	48.6	47.3	49.9
Tunisia	43.6	42.6	44.7	46.1	45.0	47.3	48.6	47.3	50.0	51.6	50.2	53.1	54.1	52.5	55.7
Southern Africa	43.0	42.1	43.9	45.3	44.3	46.4	47.4	46.2	48.6	48.1	47.0	49.4	50.6	48.9	52.4
Botswana	33.4	32.8	34.0	35.9	35.3	36.5	38.4	37.7	39.1	41.0	39.4	42.6	43.5	41.9	45.1
Lesotho	35.9	35.3	36.5	38.4	37.7	39.1	40.9	40.1	41.7	43.5	41.9	45.1	46.0	44.4	47.6
Namibia	31.3	30.8	31.8	33.4	32.8	34.0	35.9	34.8	37.0	38.5	36.9	40.1	41.0	39.4	42.6
South Africa	44.4	43.5	45.4	46.7	45.6	47.8	48.6	47.4	49.8	49.0	47.8	50.3	51.5	49.8	53.3
Swaziland	33.4	32.8	34.0	35.9	35.3	36.5	38.4	37.2	39.6	41.0	39.4	42.6	43.5	41.9	45.1
Western Africa	32.0	30.8	33.3	34.1	32.7	35.7	36.5	35.1	38.0	38.8	37.3	40.3	40.9	39.4	42.5
Benin	31.3	30.0	32.6	33.5	31.9	35.1	36.0	34.4	37.6	38.5	36.9	40.1	41.0	39.4	42.6
Cape Verde	40.0	38.5	41.6	42.5	40.9	44.1	45.0	43.4	46.6	46.0	44.4	47.6	50.0	48.3	51.7
Gambia	33.5	32.0	35.0	36.0	34.5	37.5	37.5	36.0	39.1	38.5	37.0	40.1	40.0	38.5	41.6
Ghana	34.0	33.4	34.6	36.5	35.4	37.6	39.0	37.3	40.7	41.5	39.9	43.1	43.5	41.9	45.1
Guinea	31.3	30.0	32.6	33.5	31.9	35.1	36.0	34.4	37.6	38.5	36.9	40.1	41.0	39.4	42.6
Guinea-Bissau	28.0	26.6	29.4	30.5	29.1	32.0	33.5	32.0	35.0	36.5	35.0	38.1	38.5	37.0	40.1
Ivory Coast	33.5	31.9	35.1	35.9	34.4	37.6	38.4	36.9	40.1	41.0	39.4	42.6	43.5	41.9	45.1
Liberia	34.5	33.0	36.0	36.5	35.0	38.1	38.5	36.5	40.1	41.0	39.5	42.6	43.5	41.9	45.1
Mali	33.5	32.7	34.2	34.7	34.0	35.5	36.0	35.2	36.7	37.2	36.5	38.0	38.0	36.5	39.6
Mauritania	33.5	31.9	35.1	35.9	34.4	37.6	38.4	36.9	40.1	41.0	39.4	42.6	38.5	37.0	40.1

TABLE 75. EXPECTATION OF LIFE AT BIRTH, 1950–1975* *(continued)*

	1950–1955			1955–1960			1960–1965			1965–1970			1970–1975**		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Niger	33.5	31.9	35.1	35.9	34.4	37.6	38.4	36.9	40.1	38.5	37.0	40.2	38.5	37.0	40.1
Nigeria	31.3	30.0	32.6	33.5	31.9	35.1	36.0	34.4	37.6	38.5	36.9	40.1	41.0	39.4	42.6
Senegal	33.5	31.9	35.1	35.9	34.4	37.6	38.0	37.4	38.7	40.0	39.2	40.7	40.0	38.5	41.6
Sierra Leone	33.5	31.9	35.1	36.0	34.4	37.6	38.5	36.9	40.1	41.0	39.4	42.6	43.5	41.9	45.1
Togo	31.3	30.0	32.6	33.5	31.9	35.1	36.0	34.4	37.6	38.5	36.9	40.1	41.0	39.4	42.6
Upper Volta	31.0	30.3	31.8	32.2	31.5	33.0	34.0	33.4	34.6	35.5	34.9	36.1	38.0	36.5	39.6
Latin America	52.3	50.2	54.5	55.3	53.2	57.4	57.7	55.6	59.8	59.5	57.5	61.7	61.4	59.2	63.7
Caribbean	52.9	51.4	54.5	56.4	54.8	58.1	59.6	57.8	61.4	61.8	60.1	63.5	63.1	61.4	64.8
Barbados	57.5	56.0	59.0	62.7	60.5	65.0	66.0	63.5	68.5	67.6	65.1	70.2	69.1	66.7	71.6
Cuba	58.8	56.7	61.0	61.8	59.6	64.1	65.1	63.0	67.3	69.2	67.5	70.9	69.8	68.1	71.5
Dominican Republic	45.1	43.6	46.7	49.3	47.7	50.9	53.0	51.4	54.8	55.4	53.6	57.2	57.8	55.9	59.6
Guadeloupe	56.5	55.0	58.1	61.5	59.5	63.7	65.4	63.5	67.4	67.4	65.4	69.4	69.4	67.4	71.4
Haiti	40.5	40.0	41.0	43.2	43.0	43.5	45.5	45.0	46.0	47.7	47.0	48.5	50.0	49.0	51.0
Jamaica	57.9	56.4	59.5	62.7	60.6	64.8	65.8	63.8	67.9	67.8	65.9	69.7	69.5	67.9	71.2
Martinique	56.5	55.0	58.1	61.5	59.5	63.6	65.4	63.5	67.4	67.4	65.4	69.4	69.4	67.4	71.4
Puerto Rico	64.4	63.0	66.7	68.6	66.8	70.2	69.5	66.7	72.4	71.0	68.0	73.5	72.1	69.7	74.7
Trinidad and Tobago	57.8	56.4	59.4	62.3	60.6	64.3	65.8	63.8	67.9	67.8	65.9	69.7	69.5	67.9	71.2
Windward Islands	53.3	52.2	54.5	57.7	56.5	58.9	60.6	59.2	62.1	63.3	61.7	64.9	65.5	63.5	67.6
Other Caribbean	57.6	56.2	59.1	62.1	60.4	63.9	64.4	63.0	65.8	66.2	64.7	67.8	67.8	66.1	69.6
Middle America	49.6	48.3	51.1	53.9	52.5	55.3	57.2	55.8	58.7	59.1	57.4	60.8	61.5	59.7	63.3
Costa Rica	58.2	56.9	59.7	60.5	59.1	62.0	62.8	61.3	64.4	65.4	64.0	66.9	68.2	66.5	69.9
El Salvador	45.3	44.1	46.5	48.6	47.3	50.0	52.3	50.8	54.0	55.9	54.1	57.8	59.1	57.1	61.2
Guatemala	41.6	41.0	42.3	44.6	43.8	45.4	47.5	46.7	48.4	50.6	49.7	51.6	53.8	52.8	54.8
Honduras	36.9	35.5	38.4	41.0	39.5	42.5	45.1	43.6	46.6	49.4	48.0	50.9	53.5	52.1	55.0
Mexico	51.6	50.2	53.2	56.3	54.9	57.8	59.5	58.1	61.1	61.0	59.2	62.8	63.2	61.3	65.2
Nicaragua	43.0	41.5	44.6	45.5	43.9	47.1	47.9	46.4	49.6	50.4	48.9	52.1	52.9	51.2	54.6
Panama	58.8	57.6	60.1	60.9	59.5	62.3	62.9	61.5	64.5	64.9	63.4	66.5	66.5	65.0	68.2
Temperate South America	60.3	58.1	62.7	62.0	59.5	64.7	63.3	60.5	66.3	65.3	62.2	68.6	66.5	63.5	69.7
Argentina	62.7	60.4	65.1	64.7	62.1	67.4	66.0	63.1	69.1	67.4	64.1	70.8	68.2	65.2	71.4
Chile	54.1	52.3	56.0	56.1	53.7	58.6	57.7	55.0	60.4	60.6	57.6	63.6	62.6	59.5	65.7
Uruguay	66.3	63.3	69.4	67.2	64.2	70.3	68.3	65.3	71.4	69.3	66.4	72.3	69.8	66.9	72.8
Tropical South America	51.9	49.4	54.5	54.5	52.2	57.0	56.6	54.4	59.0	58.6	56.4	60.8	60.5	58.1	63.0
Bolivia	40.8	40.0	41.6	42.3	41.4	43.2	43.8	42.8	44.7	45.3	44.3	46.3	46.8	45.7	47.9
Brazil	54.2	51.0	57.4	56.0	53.1	59.1	57.9	55.2	60.8	59.7	57.1	62.4	61.4	58.5	64.4
Colombia	50.2	48.5	52.0	54.7	53.2	56.2	56.6	55.0	58.2	58.5	56.9	60.2	60.9	59.2	62.7
Ecuador	47.2	45.8	48.7	51.0	49.6	52.5	54.2	52.9	55.7	57.2	55.8	58.7	59.6	58.2	61.2
Guyana	55.8	53.7	58.3	59.3	57.2	61.8	62.4	60.2	64.7	65.2	62.9	67.5	67.9	65.3	70.6
Paraguay	51.5	49.1	54.0	54.4	52.3	56.7	57.0	55.3	58.8	60.1	58.6	61.7	61.9	60.3	63.6
Peru	43.4	42.5	44.4	46.7	45.7	47.8	49.4	48.3	50.5	52.0	50.8	53.2	54.6	53.3	55.9
Suriname	56.0	54.4	57.7	58.7	57.0	60.5	61.5	59.7	63.4	63.6	61.5	65.7	65.5	63.3	67.8
Venezuela	54.2	52.2	56.3	57.2	55.2	59.3	60.2	58.4	62.2	63.0	61.2	64.9	64.7	62.9	66.7
Northern America	69.0	66.2	72.0	69.7	66.7	73.1	70.0	66.7	73.4	70.5	66.9	74.1	71.3	67.5	75.3
Canada	69.1	66.9	71.2	70.5	67.8	73.2	71.4	68.5	74.4	72.2	68.9	75.4	72.8[a]	69.3[a]	76.4[a]
United States of America	68.7	65.9	71.8	69.7	66.6	72.9	70.0	66.8	73.4	70.3	66.8	74.0	71.1[a]	67.3[a]	74.9[a]
East Asia	46.7	45.3	48.3	51.8	50.3	53.4	56.5	54.8	58.3	59.9	58.1	61.8	62.5	60.7	64.3
China	45.0	43.6	46.5	50.5	49.1	52.0	55.5	53.9	57.2	59.0	57.3	60.8	61.6	59.9	63.3
Japan	62.4	60.6	64.2	66.5	64.3	68.7	68.8	66.3	71.3	71.2	68.6	73.9	73.0[b]	70.3[b]	75.6[b]
Other East Asia	48.2	46.6	49.9	53.2	51.5	55.0	55.9	54.2	57.8	58.3	56.5	60.1	61.1	59.3	63.0
Hong Kong	60.9	57.2	64.9	63.1	59.0	67.6	66.1	62.5	70.0	68.3	65.0	71.8	70.0	67.0	73.2
Korea	47.5	46.0	49.0	52.6	51.1	54.2	55.2	53.6	56.9	57.7	56.0	59.4	60.6	58.8	62.5
Democratic People's Republic of Korea	47.5	46.0	49.0	52.6	51.1	54.2	55.2	53.6	56.9	57.7	56.0	59.4	60.6	58.8	62.5

Republic of Korea	47.5	46.0	49.0	52.6	51.1	54.2	55.2	53.6	56.9	57.7	56.0	59.4	60.6	58.8	62.5
Mongolia	45.0	43.6	46.5	50.0	48.6	51.5	54.5	52.9	56.2	58.0	56.3	59.8	60.7	59.1	62.3
South Asia	39.1	39.0	39.1	41.9	41.8	41.9	44.6	44.5	44.6	47.0	46.8	47.1	48.5	48.4	48.7
Eastern South Asia	40.4	39.2	41.6	43.2	41.9	44.5	45.7	44.3	47.1	48.2	46.8	49.7	50.6	49.1	52.1
Burma	40.0	38.7	41.4	42.5	41.1	44.0	45.0	43.6	46.5	47.5	46.1	49.0	50.0	48.6	51.5
Democratic Kampuchea	39.4	38.1	40.8	41.4	40.0	42.8	43.4	42.0	44.9	45.4	44.0	46.9	45.4	44.0	46.9
East Timor	30.0	29.6	30.4	32.5	31.9	33.1	35.0	34.4	35.6	37.5	36.9	38.1	40.0	39.2	40.7
Indonesia	37.5	36.9	38.1	40.0	39.2	40.7	42.5	41.7	43.4	45.0	44.1	46.1	47.5	46.4	48.7
Lao People's Democratic Republic	37.8	36.5	39.2	40.4	39.1	41.8	40.4	39.1	41.8	40.4	39.1	41.8	40.4	39.1	41.8
Malaysia	48.5	47.0	50.0	51.7	50.0	53.5	54.2	52.5	56.0	56.7	55.0	58.5	59.4	57.5	61.3
Philippines	46.0	44.6	47.5	49.4	48.0	50.9	52.5	51.0	54.1	55.6	54.0	57.3	58.4	56.9	60.0
Singapore	60.4	58.8	62.1	63.2	61.5	64.9	65.8	64.1	67.6	68.0	66.0	70.0	69.5	67.4	71.8
Thailand	45.2	42.6	47.8	49.0	46.4	51.8	52.5	49.9	55.3	55.5	52.9	58.3	58.0	55.4	60.8
Viet Nam	37.8	36.5	39.2	40.4	39.1	41.7	41.7	40.4	43.2	43.1	41.7	44.6	44.6	43.2	46.0
Middle South Asia	38.6	39.1	38.1	41.5	41.9	41.0	44.3	44.7	43.8	46.7	47.1	46.3	48.0	48.4	47.6
Afghanistan	30.2	30.0	30.4	32.8	32.4	33.1	35.3	34.9	35.6	37.8	37.4	38.1	40.3	39.9	40.7
Bangladesh	36.7	36.8	36.5	38.7	38.8	38.5	40.8	41.0	40.5	43.3	43.5	43.0	35.8	35.8	35.8
Bhutan	33.1	31.9	34.3	35.6	34.4	36.9	38.1	36.9	39.4	40.6	39.2	42.0	43.6	42.2	45.0
India	38.7	39.4	38.0	41.7	42.4	41.0	44.7	45.3	44.0	47.2	47.8	46.5	49.5	50.1	48.8
Iran	42.4	41.7	43.3	44.4	43.9	45.1	46.6	46.2	47.1	48.8	48.4	49.2	51.0	50.7	51.3
Nepal	33.1	31.9	34.3	35.6	34.4	36.9	38.1	36.9	39.4	40.6	39.2	42.0	43.6	42.2	45.0
Pakistan	39.1	39.3	38.9	42.1	42.3	41.9	44.9	45.0	44.7	47.4	47.4	47.3	49.8	49.9	49.6
Sri Lanka	56.6	57.6	55.5	60.5	61.3	59.7	63.5	63.3	63.7	65.8	64.8	66.9	67.8	66.3	69.3
Western South Asia	43.9	42.9	44.9	46.4	45.2	47.5	48.7	47.4	50.0	51.2	49.8	52.7	53.8	52.3	55.4
Cyprus	67.0	65.1	69.0	68.1	66.2	70.1	69.2	67.3	71.2	70.2	68.3	72.2	71.4	69.5	73.4
Democratic Yemen	34.7	34.2	35.3	37.2	36.6	37.9	39.7	38.9	40.5	42.3	41.4	43.3	44.8	43.7	45.9
Iraq	42.7	41.7	43.7	45.2	44.1	46.4	47.7	46.5	49.0	50.2	48.8	51.6	52.7	51.2	54.3
Israel[c]	68.6	67.2	70.1	70.4	69.0	71.8	71.8	70.6	73.1	71.8	70.2	73.4	72.0	70.5	73.6
Jordan	43.2	42.2	44.3	45.7	44.6	46.9	48.2	47.0	49.5	50.7	49.3	52.2	53.2	51.7	54.8
Kuwait	55.8	54.1	57.5	58.3	56.6	60.0	60.8	59.1	62.5	64.4	62.5	66.4	67.2	65.3	69.2
Lebanon	54.0	52.4	55.6	56.5	54.8	58.3	58.7	56.9	60.6	60.9	59.0	62.9	63.2	61.4	65.1
Saudi Arabia	34.7	34.2	35.3	37.2	36.6	37.9	39.7	38.9	40.5	42.3	41.4	43.3	45.3	44.2	46.5
Syrian Arab Republic	43.8	42.8	44.9	46.3	45.1	47.5	48.8	47.5	50.2	51.3	49.9	52.8	54.0	52.4	55.7
Turkey	47.0	45.8	48.3	49.3	48.0	50.7	51.7	50.3	53.2	54.4	52.8	56.1	56.9	55.2	58.7
Yemen	34.7	34.2	35.3	37.2	36.6	37.9	39.7	38.9	40.5	42.3	41.4	43.3	44.8	43.7	45.9
Other Western South Asia	37.8	36.7	38.9	40.3	39.2	41.4	42.8	41.7	43.9	44.5	43.4	45.7	47.0	45.8	48.3
Europe	65.4	63.2	67.7	68.0	65.6	70.5	69.6	67.0	72.3	70.5	67.7	73.4	71.2	68.4	74.2
Eastern Europe	63.0	60.8	65.4	66.4	64.2	68.8	68.7	66.4	71.1	69.7	67.1	72.4	69.8	67.1	72.6
Bulgaria	62.2	60.5	64.0	66.3	64.6	68.1	69.8	68.0	71.6	70.8	68.8	72.9	71.1[d]	68.6[d]	73.9[d]
Czechoslovakia	65.4	63.1	67.8	69.2	66.6	71.7	70.4	67.5	73.2	70.2	67.0	73.4	70.0[e]	66.2[e]	73.1[e]
German Democratic Republic	66.8	64.8	68.8	68.5	66.2	70.8	69.6	67.0	72.1	70.6	68.1	73.2	71.1[b]	68.5[b]	73.8[b]
Hungary	64.2	62.1	66.3	67.2	65.1	69.2	68.5	66.2	70.7	69.4	67.0	71.9	69.4[a]	66.6[a]	72.3[a]
Poland	61.2	58.6	64.2	65.6	62.7	68.6	68.8	66.0	71.5	70.0	66.8	73.1	70.4[a]	66.8[a]	73.8[a]
Romania	61.1	59.5	62.8	63.8	62.0	65.5	66.8	64.8	68.9	68.0	65.9	70.1	68.6[a]	66.3[a]	70.8[a]
Northern Europe	69.2	67.0	71.7	70.4	67.9	73.1	71.2	68.5	74.1	71.8	68.9	74.9	72.5	69.5	75.6
Denmark	70.8	69.4	72.1	72.0	70.3	73.6	72.4	70.3	74.4	72.8	70.5	75.2	73.4[a]	70.7[a]	76.0[a]
Finland	65.7	62.4	69.0	67.9	64.6	71.2	68.8	65.3	72.4	69.6	65.8	73.4	70.1[f]	65.9[f]	74.2[f]
Iceland	71.8	69.8	73.9	73.0	70.7	75.2	73.4	70.8	76.0	73.5	70.7	76.3	73.9	70.9	77.2
Ireland	66.2	64.9	67.6	68.3	66.7	70.0	70.2	68.2	72.1	70.8	68.7	73.0	71.8	69.5	74.2
Norway	72.5	70.7	74.3	73.4	71.3	75.4	73.5	71.1	75.9	73.9	71.1	76.7	74.3[g]	71.2[g]	77.4[g]
Sweden	71.6	70.2	73.1	72.8	71.1	74.5	73.5	71.5	75.5	74.1	71.8	76.4	74.7[b]	72.1[b]	77.3[b]
United Kingdom	69.2[h]	66.6[h]	71.7[h]	70.4	67.7	73.2	70.8	67.9	73.7	71.6	68.5	74.6	71.9[a]	68.7[a]	75.1[a]
Southern Europe	63.3	61.4	65.4	66.3	64.2	68.6	68.1	65.7	70.5	69.6	67.0	72.2	70.9	68.3	73.6
Albania	54.8	54.0	55.6	60.0	59.2	60.8	65.2	64.0	66.3	66.8	65.8	67.8	68.6	67.2	69.9
Greece	65.7	64.1	67.5	68.0	66.3	69.9	69.6	67.9	71.5	70.9	68.8	73.3	71.8	69.7	74.0

TABLE 75. EXPECTATION OF LIFE AT BIRTH, 1950–1975* *(continued)*

	1950–1955			1955–1960			1960–1965			1965–1970			1970–1975**		
	Both sexes	*Male*	*Female*	*Both sexes*	*Male*	*Female*	*Both sexes*	*Male*	*Female*	*Both sexes*	*Male*	*Female*	*Both sexes*	*Male*	*Female*
Italy	65.8	64.0	67.6	68.4	66.2	70.6	70.0	67.4	72.5	71.0	68.2	73.8	71.9[a]	69.0[a]	74.9[a]
Malta	62.6	61.3	64.0	67.8	66.0	69.6	68.9	67.0	70.8	69.8	67.8	71.8	70.4[b]	68.4[b]	72.5[b]
Portugal	59.0	56.5	61.5	62.0	59.4	64.6	64.0	61.1	67.0	65.7	62.6	68.8	67.0[f]	63.7[f]	70.3[f]
Spain	63.6	61.3	65.8	67.3	65.0	69.6	70.2	67.8	72.5	71.6	69.0	74.1	72.3[i]	69.7[i]	75.0[i]
Yugoslavia	56.7	55.3	58.1	61.6	60.3	63.0	64.1	62.5	65.8	66.5	64.3	68.7	67.8[a]	65.4[a]	70.2[a]
Western Europe	67.6	65.3	70.1	69.7	67.0	72.5	70.7	67.8	73.8	71.2	68.0	74.5	72.0	68.9	75.2
Austria	65.3	62.6	68.0	67.5	64.5	70.5	69.5	66.3	72.7	70.0	66.6	73.4	70.4[b]	66.8[b]	74.0[b]
Belgium	66.6	63.9	69.3	68.8	66.0	71.6	70.6	67.7	73.6	70.9	67.8	74.0	71.0[j]	67.8[j]	74.2[j]
France	67.0	64.0	69.9	69.2	65.9	72.4	70.6	67.2	74.1	71.3	67.5	75.0	72.2[a]	68.3[a]	76.0[a]
Germany, Federal Republic of	67.2	65.1	69.3	68.8	66.4	71.3	69.9	67.1	72.8	70.5	67.5	73.6	70.6[a]	67.4[a]	73.8[a]
Luxembourg	66.0	63.2	68.9	67.5	64.5	70.6	68.8	65.7	72.1	69.9	66.8	73.2	70.8	67.8	74.1
Netherlands	71.9	70.6	73.5	73.0	71.3	74.6	73.4	71.2	75.7	73.6	71.0	76.3	73.8[b]	70.9[b]	76.8[b]
Switzerland	69.1	66.8	71.4	70.6	68.1	73.1	71.6	68.9	74.4	72.5	69.6	75.4	73.7	70.7	76.8
Oceania	60.8	59.0	62.6	62.4	60.4	64.5	63.9	61.8	66.1	64.5	62.3	66.7	65.8	63.6	68.2
Australia and New Zealand	69.8	67.2	72.5	70.6	67.8	73.6	71.3	68.4	74.4	71.8	68.8	75.1	72.3	69.2	75.5
Australia	69.6	66.9	72.4	70.4	67.5	73.5	71.2	68.2	74.4	71.9	68.8	75.1	72.4	69.3	75.6
New Zealand	69.5	67.4	71.6	70.7	68.2	73.2	71.2	68.4	73.9	71.3	68.2	74.4	72.0	68.9	75.2
Melanesia	36.1	36.5	35.6	39.6	39.9	39.2	43.5	43.7	43.3	45.9	45.9	45.9	48.4	48.2	48.6
Papua New Guinea	35.1	35.6	34.5	38.6	39.0	38.1	42.7	43.0	42.4	45.1	45.4	44.9	47.7	47.7	47.6
Other Melanesia	44.4	43.8	45.0	46.9	46.3	47.5	49.4	48.8	50.0	50.9	49.3	52.5	53.4	51.8	55.0
Micronesia and Polynesia	54.1	52.8	55.6	56.7	55.4	58.0	59.1	57.5	60.8	61.1	59.5	62.7	62.8	61.2	64.5
Micronesia	52.0	50.5	53.6	54.5	52.9	56.2	57.0	55.3	58.8	59.4	57.9	61.0	61.7	60.0	63.5
Polynesia	54.7	53.5	56.1	57.2	56.0	58.5	59.6	58.1	61.3	61.6	60.0	63.3	63.2	61.6	64.8
Fiji	60.6	59.5	61.8	63.1	62.1	64.1	65.7	64.1	67.3	68.1	66.4	69.9	70.0	68.5	71.7
Other Polynesia	47.8	46.4	49.3	50.3	48.9	51.8	52.8	51.3	54.4	55.1	53.7	56.6	57.7	56.2	59.3
USSR	61.7	60.0	63.5	68.4	64.0	71.0	70.0	65.5	73.2	70.0	65.5	74.0	70.0[g]	64.0[g]	74.0[g]

* Official national figures have been provided where available; where unavailable, national figures and corresponding regional life expectancies are weighted averages of estimates and projections by the Population Division of the United Nations Secretariat for each five-year period. Country data for Canada, the United States of America, Japan, the countries of Europe, Australia, New Zealand and the USSR refer to 1950–1954, 1955–1959, 1960–1964, 1965–1969 and 1970–1974.

** Unless otherwise indicated.

[a] For 1970–1972.

[b] For 1970–1973.

[c] For Jewish population.

[d] For 1969–1971.

[e] For 1970–1971.

[f] For 1971.

[g] For 1971–1972.

[h] Excluding Northern Ireland.

[i] For 1970.

[j] For 1968–1972.

TABLE 76. PERCENTAGE DISTRIBUTION OF DEATHS BY AGE, SELECTED MORE DEVELOPED COUNTRIES, 1950 AND 1970

	1950				1970			
	All ages[a]	Under 1 year	1–49 years	50 years and over	All ages[a]	Under 1 year	1–49 years	50 years and over
Northern America								
Canada	100.0	12.4	16.1	71.4	100.0	4.5	13.9	81.6
United States of America	100.0	7.1	16.7	76.1	100.0	3.9	13.3	82.7
East Asia								
Japan	100.0	15.5	35.4	49.0	100.0	3.6	15.8	80.6
Eastern Europe								
Hungary	100.0	15.7	20.0	64.2	100.0	4.5	10.0	85.5
Poland[b]	100.0	28.9	23.7	47.2	100.0	6.8	14.0	79.1
Northern Europe								
Sweden	100.0	3.4	11.5	85.1	100.0	1.5	7.6	90.9
United Kingdom (England and Wales)	100.0	4.1	11.4	84.5	100.0	2.5	7.0	90.5
Western Europe								
France	100.0	8.4	13.3	78.3	100.0	2.8	10.0	87.1
Germany, Federal Republic of	100.0	8.8	15.2	76.0	100.0	2.6	9.0	88.4
Southern Europe								
Italy	100.0	12.8	18.4	68.8	100.0	5.1	9.9	85.0
Spain	100.0	12.9	25.8	61.0	100.0	6.5	11.2	81.7
Australia and New Zealand								
Australia	100.0	6.0	14.8	79.2	100.0	4.1	12.3	83.6

[a] Percentages may not add to 100.0 because of rounding and the omission of deaths of persons of unknown age.

[b] Data pertain to 1951 and 1970, respectively.

TABLE 77. AGE-SPECIFIC DEATH RATES, BY SEX, SELECTED MORE DEVELOPED COUNTRIES, 1950–1973 (UNLESS OTHERWISE NOTED), AND AVERAGE ANNUAL PERCENTAGES OF CHANGE IN DEATH RATES

		Rates per 1,000 population in sex-age group								*Average annual percentages of change in death rates*					
		Males				*Females*				*Males*			*Females*		
	Age	*1950*	*1960*	*1970*	*1973*	*1950*	*1960*	*1970*	*1973*	*1950–1960*	*1960–1970*	*1970–1973*	*1950–1960*	*1960–1970*	*1970–1973*
Latin America															
Temperate South America															
Argentina	Under 1	...	74.33	66.76	...	...	62.78	58.83	...	...	−1.1	...	...	−0.6	...
	1–4	...	4.53	3.42	...	...	4.54	3.32	...	...	−2.8	...	...	−3.1	...
	5–14	...	0.58	0.80	...	...	0.72	0.58	...	...	+3.2	...	...	−2.2	...
	15–24	...	1.88	1.73	...	...	1.26	1.08	...	...	−0.8	...	...	−1.5	...
	25–44	...	3.42	3.76	...	...	2.27	2.15	...	...	+0.9	...	...	−0.5	...
	45–64	...	16.89	16.67	...	...	8.65	7.93	...	...	−0.1	...	...	−0.9	...
	65–74	...	52.17	53.73	...	...	31.83	29.25	...	...	+0.3	...	...	−0.8	...
	75+	...	107.25	123.76	...	...	85.15	91.89	...	...	+1.4	...	...	+0.8	...
Chile	Under 1	172.91[a]	134.22[b]	80.69	...	150.78[a]	118.93[b]	68.04	...	−2.8[c]	−5.7[d]	...	−2.6[c]	−6.2[d]	...
	1–4	11.60[a]	7.01[b]	3.45	...	12.51[a]	7.15[b]	3.23	...	−5.6[c]	−7.9[d]	...	−6.2[c]	−8.8[d]	...
	5–14	2.03[a]	1.22[b]	0.95	...	1.83[a]	1.05[b]	0.69	...	−5.7[c]	−2.8[d]	...	−6.2[c]	−4.7[d]	...
	15–24	3.87[a]	2.38[b]	1.84	...	3.47[a]	1.81[b]	1.15	...	−5.4[c]	−2.9[d]	...	−7.2[c]	−5.0[d]	...
	25–44	6.96[a]	5.82[b]	4.43	...	5.69[a]	3.86[b]	2.61	...	−2.0[c]	−3.0[d]	...	−4.3[c]	−4.3[d]	...
	45–64	20.04[a]	17.72[b]	16.39	...	14.19[a]	11.26[b]	9.99	...	−1.4[c]	−0.9[d]	...	−2.6[c]	−1.3[d]	...
	65–74	60.59[a]	72.93[b]	70.11	...	45.70[a]	63.07[b]	59.61		...	−0.4		...	−0.6[d]	
	75+	125.53[a]			...	115.34[a]			...	...		...	...		...
Northern America															
Canada	Under 1	12.34	7.66	4.98	17.30	9.64	5.91	3.84	13.52	−4.8	−4.3	...	−4.9	−4.3	...
	1–4				0.82				0.73						
	5–14	0.94	0.65	0.55	0.52	0.66	0.39	0.35	0.31	−3.7	−1.7	−1.9	−5.3	−1.1	−4.1
	15–24	1.54	1.38	1.51	1.86	0.92	0.53	0.55	0.61	−1.1	+0.9	+7.0	−5.5	+0.4	+3.5
	25–44	2.46	2.14	2.14	2.17	1.93	1.26	1.20	1.12	−1.4	0.0	+0.5	−4.3	−0.5	−2.3
	45–64	13.39	12.33	12.19	12.21	8.77	6.88	6.20	6.23	−0.8	−0.1	+0.1	−1.4	−1.0	+0.2
	65–74	43.98	44.44	43.72	41.84	33.43	28.04	23.50	21.74	+0.1	−0.2	−1.5	−1.8	−9.1	−2.6
	75+	117.89	117.87	113.41	118.86	107.27	98.01	84.57	82.56	0.0	−0.4	+1.6	−0.9	−1.5	−0.8
United States of America	Under 1	37.27	32.73	24.61	20.00	28.54	24.85	19.04	15.84	−1.3	−2.9	−6.9	−1.4	−2.7	−6.1
	1–4	1.51	1.20	0.93	0.89	1.26	0.95	0.75	0.70	−2.3	−2.6	−1.5	−2.8	−2.4	−2.3
	5–14	0.70	0.55	0.51	0.51	0.48	0.37	0.32	0.31	−2.4	−0.8	0.0	−2.6	−1.5	−1.1
	15–24	1.67	1.40	1.79	1.93	0.89	0.58	0.68	0.64	−1.8	+2.5	+2.5	−4.3	+1.6	−2.0
	25–44	3.17	2.76	3.00	2.77	2.12	1.72	1.64	1.49	−1.4	+0.8	−2.7	−2.1	−0.5	−3.2
	45–64	16.49	15.30	15.37	14.93	9.75	7.90	7.76	7.49	−0.8	+0.1	−1.0	−2.1	−0.2	−1.2
	65–74	48.95	53.21	48.65	47.10	32.98	30.94	25.72	24.53	+0.8	−0.9	−1.1	−0.6	−1.9	−1.6
	75+	119.48	119.45	113.81	118.55	101.38	96.82	84.36	86.91	0.0	−0.5	+1.4	−0.5	−1.4	+1.0
Asia															
Japan	Under 1	64.49	34.29	15.13	12.78	34.29	28.04	11.54	9.87	−6.3	−8.2	−5.6	−2.0	−8.9	−5.2
	1–4	9.26	2.65	1.20	1.12	9.26	2.24	0.91	0.84	−12.5	−7.9	−2.3	−14.2	−9.0	−2.7
	5–14	1.69	0.77	0.48	0.43	1.59	0.57	0.30	0.27	−7.9	−4.7	−3.7	−10.3	−6.4	−3.5
	15–24	3.59	1.69	1.18	1.12	3.41	1.06	0.55	0.52	−7.5	−3.6	−1.7	−11.7	−6.6	−1.9
	25–44	5.96	2.76	2.21	2.01	5.24	2.05	1.29	1.12	−7.7	−2.2	−3.2	−9.4	−4.6	−4.7
	45–64	17.05	13.70	10.93	9.45	12.52	8.44	6.23	5.47	−2.2	−2.3	−4.9	−3.9	−3.0	−4.4
	65–74	62.45	53.74	46.47	41.05	62.03	35.46	27.68	24.32	−1.5	−1.5	−4.1	−5.6	−2.5	−4.1
	75+	142.51	143.99	126.75	120.24	117.33	115.07	102.90	96.69	+0.1	−1.3	−1.8	−0.2	−1.1	−2.1

Eastern Europe																
Czechoslovakia	Under 1		26.93	25.94	25.95[b]		20.91	20.13	19.06[b]	...	−0.4	0.0[b]	...	−0.4	−2.7
	1–4	3.81[a]	1.38	1.05	0.86[b]	2.87[a]	1.01	0.85	0.71[b]	...	−2.7	−10.0[b]	...	−1.7	−9.0
	5–14		0.50	0.51	0.48[b]		0.30	0.32	0.30[b]	...	+0.2	−3.0[b]	...	+0.7	−3.2
	15–24		1.46	1.50	1.44[b]		0.55	0.53	0.46[b]	...	+0.3	−2.0[b]	...	−0.4	−7.1
	25–44		2.29	2.85	2.64[b]		1.22	1.22	1.15[b]	...	+2.2	−3.8[b]	...	0.0	−3.0
	45–64	12.96[a]	13.16	16.20	15.23[b]	11.16[a]	7.39	8.07	7.62[b]	...	+2.1	−3.1[b]	...	+0.9	−2.9
	65–74		48.82	58.84	55.29[b]		32.77	34.20	31.49[b]	...	+1.9	−3.1[b]	...	+0.4	−4.1
	75+		122.16	144.96	133.94[b]		108.92	116.16	108.58[b]	...	+1.7	−4.0[b]	...	+0.6	−3.4
Hungary	Under 1	107.70[c]	53.53	41.24	39.96	86.33[c]	42.10	32.06	30.27	−6.4[c]	−2.6	−1.1	−6.5[c]	−2.7	−1.9
	1–4	4.60[c]	1.62	1.15	0.96	4.14[c]	1.43	0.94	0.72	−9.5[c]	−3.4	−6.0	−9.7[c]	−4.2	−8.9
	5–14	1.32[c]	0.58	0.46	0.42	1.13[c]	0.34	0.30	0.26	−7.5[c]	−2.3	−3.0	−10.9[c]	−1.3	−4.8
	15–24	2.77[c]	1.35	1.29	1.19	2.35[c]	0.67	0.47	0.45	−6.5[c]	−0.5	−2.7	−11.4[c]	−3.6	−1.5
	25–44	4.51[c]	2.24	2.73	2.67	3.22[c]	1.58	1.35	1.35	−6.7[c]	+2.0	−0.8	−6.5[c]	−1.6	0.0
	45–64	14.36[c]	12.45	13.93	13.57	10.25[c]	8.07	7.82	7.87	−1.3[c]	+1.1	−0.9	−2.2[c]	−0.3	+0.2
	65–74	47.71[c]	49.15	52.83	51.76	39.99[c]	36.99	33.53	32.33	+0.3[c]	+0.7	−0.7	−0.7[c]	−1.0	−1.2
	75+	127.28[c]	138.75	140.10	138.95	119.68[c]	122.31	118.03	110.28	+0.8[c]	+0.1	−0.3	+0.2[c]	−0.4	−2.3
Poland	Under 1	96.88[a]	71.48	41.91	31.61	76.47[a]	55.41	31.83	22.99	−0.6[a]	−5.3	−9.4	−0.6[a]	−5.5	−10.8
	1–4	3.45[a]	1.79	1.17	1.03	3.23[a]	1.62	0.93	0.82	−1.3[a]	−4.3	−4.3	−1.4[a]	−5.6	−4.2
	5–14	0.99[a]	0.62	0.50	0.46	0.77[a]	0.39	0.33	0.31	−0.9[a]	−2.2	−2.8	−1.4[a]	−1.7	−2.1
	15–24	1.82[a]	1.73	1.24	1.33	1.10[a]	0.71	0.48	0.46	−0.1[a]	−3.3	+2.3	−0.9[a]	−3.9	−1.4
	25–44		2.68	2.93	2.99		1.58	1.29	1.20	...	+0.9	+0.7	...	−2.0	−2.4
	45–64	13.27[a]	12.74	13.70	13.23	11.40[a]	7.41	6.96	6.59	...	+0.7	−1.2	...	−0.6	−1.8
	65–74		46.73	49.12	48.70		31.10	29.35	27.31	...	+0.5	−0.3	...	−0.6	−2.4
	75+		120.18	125.07	126.47		97.65	99.66	98.07	...	+0.4	+0.4	...	+0.2	−0.5
Northern Europe															
Norway	Under 1	7.67	21.26	15.13	13.78	5.71	16.60	10.41	9.42	...	−3.4	−3.1	...	−4.7	−3.3
	1–4		1.29	1.03	0.85		0.89	0.66	0.57	...	−2.3	−6.4	...	−3.0	−4.9
	5–14	0.85	0.56	0.45	0.41	0.50	0.29	0.24	0.27	−4.2	−2.2	−3.1	−5.5	−1.9	+3.9
	15–24	1.34	1.04	1.08	1.07	0.78	0.37	0.35	0.31	−2.5	+0.4	−0.3	−7.5	−0.6	−4.1
	25–44	2.00	1.83	1.80	1.65	1.37	0.97	0.84	0.78	−0.9	−0.2	−2.9	−3.5	−1.4	−2.5
	45–64	8.65	9.30	10.58	17.73	6.39	5.38	5.01	9.51	+0.7	+1.3	...	−1.7	−0.7	...
	65–74	33.81	35.79	41.18		27.49	25.42	23.10		+0.6	+1.4	...	−0.8	−1.0	...
	75+	120.54	114.70	114.27	115.94	113.91	103.95	91.89	92.47	−0.5	0.0	+0.2	−0.9	−1.2	+0.2
Northern Europe															
Sweden	Under 1	24.24	4.61	12.92	10.73	18.52	3.52	9.62	8.81	...	...	−6.2	...	...	−2.9
	1–4	1.49		0.64	0.48	1.11		0.41	0.36	...	...	−9.6	...	...	−4.3
	5–14	0.65	0.44	0.40	0.31	0.44	0.29	0.29	0.25	−3.9	−1.0	−8.5	−4.2	0.0	−5.0
	15–24	1.28	0.94	1.02	1.04	0.67	0.42	0.47	0.41	−3.1	+0.8	+0.7	−4.7	+1.1	−4.6
	25–44	1.99	1.73	1.70	1.69	1.62	1.13	0.97	0.91	−1.4	−0.2	−0.2	−3.6	−1.5	−2.1
	45–64	9.90	9.24	9.48	9.81	7.82	6.24	5.49	5.20	−0.7	+0.3	+1.1	−2.3	−1.3	−1.8
	65–74	39.10	38.87	36.90	38.17	33.69	28.20	22.13	21.51	−0.1	−0.5	+1.1	−1.8	−2.4	−1.0
	75+	126.96	117.16	110.78	117.25	122.17	104.80	89.24	88.62	−0.8	−0.6	+1.9	−1.5	−1.6	−0.2
United Kingdom (England and Wales)	Under 1	33.77	25.88	21.15	18.57	25.69	19.91	16.19	14.35	−2.7	−2.0	−4.3	−2.6	−2.1	−4.0
	1–4	1.42	0.95	0.79	0.77	1.27	0.78	0.64	0.60	−4.0	−1.8	−0.9	−4.9	−2.0	−2.2
	5–14	0.66	0.45	0.38	0.37	0.47	0.30	0.25	0.23	−3.8	−1.7	−0.9	−4.5	−1.8	−0.8
	15–24	1.21	1.03	0.94	0.96	0.94	0.40	0.40	0.42	−1.6	−0.9	+0.7	−8.5	0.0	+1.6
	25–44	2.32	1.78	1.60	1.58	1.90	1.26	1.10	1.03	−2.7	−1.1	−0.4	−4.1	−4.1	−2.2
	45–64	14.24	13.39	13.71	13.37	8.58	7.24	7.28	7.20	−0.6	+0.2	−0.8	−1.7	+0.1	−0.4
	65–74	53.33	52.61	53.44	51.51	34.70	29.46	27.79	26.85	−0.1	+0.2	−0.4	−1.6	−0.6	−1.2
	75+	136.76	135.16	137.91	136.36	114.80	104.38	100.00	100.98	−0.1	+0.2	−0.4	−1.0	−0.4	+0.3

TABLE 77. AGE-SPECIFIC DEATH RATES, BY SEX, SELECTED MORE DEVELOPED COUNTRIES, 1950–1973 (UNLESS OTHERWISE NOTED), AND AVERAGE ANNUAL PERCENTAGES OF CHANGE IN DEATH RATES *(continued)*

		Rates per 1,000 population in sex-age group								*Average annual percentages of change in death rates*					
		Males				*Females*				*Males*			*Females*		
	Age	*1950*	*1960*	*1970*	*1973*	*1950*	*1960*	*1970*	*1973*	*1950–1960*	*1960–1970*	*1970–1973*	*1950–1960*	*1960–1970*	*1970–1973*
Southern Europe															
Italy	Under 1	72.89	11.99	34.59[d]	30.12[b]	62.56	10.14	27.85[d]	23.64[b]	...	...	−4.6[f]	...	...	−5.5[f]
	1–4	4.98		1.14[d]	0.91[b]	4.85		0.98[d]	0.74[b]	...	...	−7.5[f]	...	...	−0.1[f]
	5–14	0.95	0.64	0.51[d]	0.48[b]	0.78	0.44	0.32[d]	0.31[b]	−4.0	−2.5[e]	−2.0[f]	−5.7	−3.5[e]	−1.1[f]
	15–24	5.21	1.20	1.10[d]	1.13[b]	...	0.56	0.46[d]	0.46[b]	...	−1.0[e]	+0.9[f]	...	−2.2[e]	0.0[f]
	25–44		2.03	2.02[d]	1.89[b]	3.84	1.35	1.15[d]	1.06[b]	...	−0.1[e]	−2.2[f]	...	−1.8[e]	−2.7[f]
	45–64		11.91	13.19[d]	12.27[b]	...	6.68	6.73[d]	6.13[b]	...	+1.1[e]	−2.4[f]	...	+0.1[e]	−3.1[f]
	65–74	67.63	43.85	49.91[d]	46.72[b]	59.92	29.96	28.94[d]	25.53[b]	...	+1.4[e]	−2.2[f]	...	−0.4[e]	−4.2[f]
	75+		130.31	121.23[d]	124.89[b]	...	110.32	97.96[d]	96.76[b]	...	−0.8[e]	+1.0[f]	...	−1.3[e]	−0.4[f]
Spain	Under 1	92.23	12.70	5.61	...	81.91	9.99	4.35	...	...	−8.2	...	...	−8.3	...
	1–4	7.46			...	7.29			...	...		...	...		...
	5–14	1.65	0.65	0.49	...	1.48	0.49	0.33	...	−9.3	−2.8	...	−11.1	−4.0	...
	15–24	2.87	1.05	1.04	...	2.26	0.62	0.45	...	−10.1	−0.1	...	−12.9	−3.2	...
	25–44	4.60	2.24	2.09	...	3.23	1.57	1.19	...	−7.2	−0.7	...	−7.2	−2.8	...
	45–64	14.54	26.75	10.46	...	8.86	22.52	5.75	...	...	...	...	...	...	...
	65–74	49.77		40.40	...	36.21		24.74	...	...	...	...	...	...	...
	75+	136.65		115.40	...	115.35		99.10	...	...	...	...	...	...	...
Western Europe															
Belgium	Under 1	62.93	35.79	24.71	...	48.35	26.62	18.22	...	−5.6	−3.7	...	−6.0	−3.8	...
	1–4	2.18	1.15	0.99	...	1.66	1.00	0.77	...	−6.4	−1.5	...	−5.1	−2.6	...
	5–14	0.68	0.54	0.52	...	0.50	0.34	0.32	...	−2.3	−0.4	...	−3.9	−0.6	...
	15–24	1.62	1.30	1.24	...	1.01	0.53	0.46	...	−2.2	−0.5	...	−6.5	−1.4	...
	25–44	3.24	2.09	2.17	...	2.20	1.23	1.29	...	−4.4	+0.4	...	−5.8	+0.5	...
	45–64	14.80	14.81	14.44	...	9.14	7.57	7.32	...	0.0	−0.3	...	−1.9	−0.3	...
	65–74	49.41	50.58	52.83	...	36.74	32.38	29.60	...	+0.2	+0.4	...	−1.3	−0.9	...
	75+	130.50	140.06	134.39	...	114.59	115.18	106.10	...	+0.7	−0.4	...	+0.1	−0.8	...
France	Under 1	60.90	26.67	17.39	15.13[b]	46.74	20.15	13.32	11.68[b]	−8.3	−4.3	−7.0[b]	−8.4	−4.1	−1.3[b]
	1–4	2.49	1.30	0.90	0.86[b]	2.19	1.06	0.69	0.64[b]	−6.5	−3.7	−0.5[b]	−7.3	−4.3	−3.8[b]
	5–14	0.74	0.41	0.46	0.44[b]	0.55	0.29	0.29	0.31[b]	−5.9	+1.2	−2.2[b]	−6.4	0.0	+0.7[b]
	15–24	1.48	1.07	1.38	1.55[b]	1.06	0.56	0.57	0.61[b]	−3.2	+2.5	+5.8[b]	−6.4	+0.2	+3.4[b]
	25–44	3.39	2.47	2.63	2.62[b]	2.34	1.40	1.28	1.26[b]	−3.2	+0.6	−0.2[b]	−5.1	−0.9	−0.8[b]
	45–64	14.45	14.43	13.29	13.08[b]	8.64	7.01	6.05	5.88[b]	0.0	−0.8	−0.8[b]	−2.1	−1.5	−1.4[b]
	65–74	49.13	47.06	44.56	44.52[b]	31.85	26.74	22.05	21.26[b]	−0.4	−0.6	0.0[b]	−1.8	−1.9	−1.8[b]
	75+	133.04	139.69	117.98	117.67[b]	105.23	106.51	90.56	88.09[b]	+0.5	−1.7	−0.1[b]	+0.1	−1.6	−1.4[b]
Germany, Federal Republic of	Under 1	68.02	39.19	26.51	24.75[b]	52.71	30.70	19.80	18.97[b]	−5.5	−3.9	−3.4[b]	−5.4	−4.4	−2.1[b]
	1–4	2.61	1.45	1.08	0.97[b]	2.22	1.17	0.86	0.75[b]	−5.9	−3.0	−5.4[b]	−6.4	−3.1	−6.8[b]
	5–14	0.84	0.56	0.57	0.54[b]	0.61	0.34	0.36	0.34[b]	−4.1	+0.2	−2.7[b]	−5.9	+0.6	−2.9[b]
	15–24	1.71	1.56	1.64	1.68[b]	1.08	0.57	0.59	0.62[b]	−0.9	+0.5	+1.2[b]	−6.4	+0.3	+2.5[b]
	25–44	3.07	2.23	2.36	2.36[b]	2.18	1.49	1.29	1.23[b]	−3.2	+0.6	0.0[b]	−3.8	−1.4	−2.4[b]
	45–64	12.22	13.78	14.60	13.76[b]	8.67	7.42	7.53	7.12[b]	+1.2	+0.6	−3.0[b]	−1.6	+0.2	−2.8[b]
	65–74	45.64	50.93	54.08	52.48[b]	38.56	33.23	30.40	28.46[b]	+1.1	+0.6	−1.5[b]	−1.5	−0.9	−3.3[b]
	75+	122.13	140.11	139.10	137.27[b]	116.25	119.75	108.73	104.45[b]	+1.4	−0.1	−0.7[b]	+0.3	−1.0	−2.0[b]

Netherlands	Under 1	28.41	18.70	14.27	12.31	22.09	14.54	10.98	9.84	-4.2	-2.7	-4.9	-4.2	-2.8	-3.7
	1-4	1.80	1.34	0.93	0.87	1.48	1.00	0.70	0.63	-3.0	-3.7	-2.2	-3.9	-3.6	-3.5
	5-14	0.67	0.48	0.51	0.43	0.40	0.30	0.29	0.28	-3.3	+0.6	-5.7	-2.9	-0.3	-1.2
	15-24	1.03	0.85	1.05	1.04	0.62	0.36	0.46	0.46	-1.9	+2.1	-0.3	-5.4	+2.5	0.0
	25-44	1.69	1.46	1.48	1.41	1.39	0.99	0.95	0.93	-1.5	+0.1	-1.6	-3.4	-0.4	-0.7
	45-64	8.99	9.78	11.42	10.77	7.11	5.83	5.70	5.38	+0.8	+1.6	-2.0	-2.0	-0.2	-1.9
	65-74	36.53	36.66	43.13	42.12	32.97	26.49	23.98	21.95	0.0	+1.6	-0.8	-2.2	-1.0	-3.0
	75+	112.78	111.93	116.57	117.36	109.86	101.83	93.71	89.26	-0.1	+0.4	+0.2	-0.8	-0.8	-0.5
Oceania															
Australia	Under 1	27.82	22.98	21.34	18.30	21.97	18.19	15.53	14.09	-1.9	-0.7	-5.1	-1.9	-1.6	-3.2
	1-4	1.86	1.17	1.07	0.98	1.36	1.12	0.80	0.73	-4.6	-0.9	-2.9	-1.9	-3.4	-3.1
	5-14	0.83	0.53	0.43	0.41	0.57	0.36	0.33	0.29	-4.5	-2.1	-1.6	-4.6	-0.9	-4.3
	15-24	1.74	1.43	1.68	1.64	0.83	0.54	0.57	0.56	-2.0	+1.6	-0.8	-4.3	+0.5	-0.6
	25-44	2.44	2.22	2.22	2.04	1.82	1.42	1.38	1.12	-0.9	0.0	-2.8	-2.5	-0.3	-7.0
	45-64	14.55	13.02	14.04	13.33	8.90	7.24	7.45	6.95	-1.1	+0.8	-1.7	-2.1	+0.3	-2.3
	65-74	51.19	51.16	54.20	50.76	32.73	28.65	29.51	26.19	0.0	+0.6	-2.2	-1.3	+0.3	-4.0
	75+	137.79	132.51	142.68	135.96	112.88	101.78	101.41	98.81	-0.4	+0.7	-1.6	-1.0	0.0	-0.9
New Zealand	Under 1	30.74	26.18	18.76	...	25.94	20.28	14.97	...	-1.6	-3.3	...	-2.5	-3.0	...
	1-4	1.96	1.34	1.12	...	1.59	1.20	0.84	...	-3.8	-1.8	...	-2.8	-3.6	...
	5-14	0.83	0.50	0.57	...	0.56	0.38	0.35	...	-5.1	+1.3	...	-3.9	-0.8	...
	15-24	1.71	1.23	1.54	...	1.17	0.57	0.59	...	-3.3	+2.3	...	-7.2	+0.3	...
	25-44	2.19	2.03	2.35	...	1.97	1.40	1.35	...	-0.8	+1.5	...	-3.4	-0.4	...
	45-64	12.54	12.00	13.28	...	8.98	7.26	7.48	...	-0.4	+1.0	...	-2.1	+0.3	...
	65-74	69.36	46.00	49.60	...	55.04	27.90	27.85	...	...	+0.8	...	...	0.0	...
	75+		144.13	141.25	...		100.98	104.15	...	...	-0.2	...	...	+0.3	...
USSR	Under 1	...	45.24	27.33	...	...	37.46	21.96	...	...	-5.0	...	...	-5.3	...
	1-4	...	4.08	2.67	...	...	3.92	2.14	...	...	-4.2	...	...	-6.1	...
	5-14	...	1.15	0.75	...	...	0.85	0.50	...	...	-4.3	...	...	-5.3	...
	15-24	...	1.95	1.90	...	...	1.10	0.70	...	...	-0.3	...	...	-4.5	...
	25-44	...	4.17	5.10	...	...	2.07	1.75	...	...	+2.0	...	...	-1.7	...
	45-64	...	15.71	17.34	...	...	7.46	7.41	...	...	+1.0	...	...	-0.1	...
	65-74	...	44.02	50.17	...	...	28.12	27.77	...	...	+1.3	...	...	-0.1	...
	75+	...	112.36	111.98	...	...	96.15	84.75	...		0.0	...	...	-1.3	...

[a] 1952.
[b] 1961.
[c] Annual percentages of change for 1952-1961.
[d] Annual percentages of change for 1961-1970.
[e] 1955 for rates, 1955-1960 for annual percentages of change.
[f] 1972 for rates, 1970-1972 for annual percentages of change.
[g] 1949 for rates, 1949-1960 for annual percentages of change.
[h] 1969.
[i] 1960-1969.
[j] 1969-1972.

TABLE 78. CRUDE DEATH RATES, BY URBAN AND RURAL RESIDENCE, SELECTED MORE DEVELOPED COUNTRIES, 1965–1974[a]

(Deaths per 1,000 population)

	Crude death rates						
	1965–1969	*1970–1974*	*1970*	*1971*	*1972*	*1973*	*1974*
Northern America							
Canada							
Urban	6.9	...	...	...	...	...	...
Rural	9.1	...	...	...	...	...	...
East Asia							
Japan							
Urban	6.3	6.0	6.0	...	...	...	...
Rural	8.9	8.8	8.8	...	...	...	...
Western South Asia							
Israel							
Urban	6.7	7.3	7.2	7.1	7.4	7.4	...
Rural	5.6	5.7	5.7	5.6	6.4	5.2	...
Eastern Europe							
Bulgaria							
Urban	6.9	7.2	7.0	7.3	7.4	7.1	7.4
Rural	10.7	12.5	11.4	12.5	12.8	12.5	13.2
German Democratic Republic							
Urban	...	13.8	14.1	13.7	13.7	...	...
Rural	...	13.9	14.1	13.8	13.9	...	...
Hungary							
Urban	10.0	11.0	10.7	11.2	10.8	11.2	...
Rural	11.6	12.4	12.5	12.5	12.0	12.4	...
Poland							
Urban	7.2	7.8	7.7	8.1	7.7	7.8	...
Rural	8.0	8.8	8.8	9.3	8.4	8.9	...
Romania							
Urban	8.0	8.2	8.3	8.3	8.1	8.3	...
Rural	9.7	10.4	10.4	10.3	10.0	10.8	...
Northern Europe							
Denmark							
Urban	11.9	...	...	...	...	...	...
Rural	8.4	...	...	...	...	...	...
Finland							
Urban	8.8	8.6	8.8	8.9	8.5	8.3	...
Rural	10.4	10.6	10.4	11.0	10.7	10.5	...
Ireland							
Urban	8.6	7.4	...	7.4	...	...	...
Rural	15.7	14.3	...	14.3	...	...	...
Norway							
Urban	10.3	10.4	10.6	10.2	10.2	10.4	...
Rural	9.3	9.7	9.5	9.7	9.8	9.8	...
United Kingdom (England and Wales)							
Urban	11.8	12.1	12.0	11.9	12.3	12.2	...
Rural	10.9	10.9	10.9	10.7	11.1	10.9	...
Northern Ireland							
Urban	11.0	11.8	...	...	11.6	12.1	...
Rural	10.0	10.5	...	...	10.4	10.6	...
Scotland							
Urban	12.4	12.1	12.0	11.9	12.3	12.2	...
Rural	11.3	10.9	10.9	10.7	11.1	10.9	...
Southern Europe							
Albania							
Urban	6.1	6.1	6.5	5.6	...	...	...
Rural	9.4	10.0	10.7	9.4	...	...	...
Greece							
Urban	...	6.8	7.4	6.2	...	...	...
Semi-urban	...	8.6	8.7	8.6	...	...	...
Rural	...	9.8	9.9	9.6	...	...	...
Malta							
Urban	8.8	...	...	...	...	...	...
Rural	9.2	...	...	...	...	...	...

TABLE 78. CRUDE DEATH RATES, BY URBAN AND RURAL RESIDENCE, SELECTED MORE DEVELOPED COUNTRIES, 1965–1974[a] *(continued)*
(Deaths per 1,000 population)

	Crude death rates						
	1965–1969	*1970–1974*	*1970*	*1971*	*1972*	*1973*	*1974*
Western Europe							
Austria							
Urban	...	14.3	...	14.3	...	...	...
Rural	...	11.7	...	11.7	...	...	...
Netherlands							
Urban	8.6	9.1	9.1	...	9.3	9.0	...
Semi-urban	7.4	7.5	7.6	...	7.6	7.3	...
Rural	7.8	7.7	7.8	...	7.8	7.6	...
USSR							
Urban	...	7.7	...	7.6	7.7	7.8	...
Rural	...	9.5	...	9.1	9.6	9.9	...

[a] Rates shown for 1965–1969 and 1970–1974 are unweighted averages of crude death rates for individual years. They do not necessarily pertain to all five years implied by the column headings, but only to years for which data were available.

TABLE 79. EXPECTATION OF LIFE AT BIRTH, URBAN AND RURAL AREAS, SELECTED MORE DEVELOPED COUNTRIES

		Expectation of life at birth			
		Males		Females	
Country	*Period*	*Urban*	*Rural*	*Urban*	*Rural*
Finland	1966–70	65.6	66.1	73.8	73.4
Hungary	1959–60	65.6[a]	65.0	70.0	69.1
Ireland	1965–67	67.2[b]	...	72.8	72.8
Poland	1963–65	67.6	67.5	73.4	72.6
Romania	1968	66.1	65.0	70.8	69.2
Sweden	1951–60	70.3	71.3	74.5	73.7
United States of America[c]	1959–61	67.5[d]	67.6[e]	74.0[d]	74.6[e]

Source: National statistical publications.

[a] Excluding Budapest, with an expectation of life at birth of 65.7 for males and 70.5 for females.

[b] Value for urban and rural areas combined, 68.6 years.

[c] White population only.

[d] Metropolitan areas.

[e] Non-metropolitan areas.

TABLE 80. AGE-STANDARDIZED MORTALITY RATES IN URBAN AREAS AS PERCENTAGES OF RATES IN "OTHER" AREAS, SELECTED MORE DEVELOPED COUNTRIES, 1951, 1961 AND 1969[a]

(Area not shown = 100)

	1951		1961		1969	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Denmark						
Big towns[b]	119.6	100.5	115.3	100.0	127.3	102.7
Finland						
Big towns[c]	113.2	92.2	108.6	95.1	102.9[d]	99.1[d]
Greece						
Urban areas	113.8[e]	111.4[e]	112.1[e]	110.2	121.4	112.8
Semi-urban areas	111.0[e]	106.4[e]	105.0[e]	105.3	123.6	113.2
Italy						
Chief towns	117.9	102.1	123.6	105.4	133.9[f]	115.4[f]
Japan						
Big towns[g]	100.1[h]	96.2[h]	93.5	92.5	92.3[i]	93.0[i]
Spain						
Big towns[j]	102.4	89.6	108.0	86.2	114.2[i]	88.9[i]
Switzerland						
Big towns[k]	98.8	102.4	103.2	91.6	98.4	84.5
United Kingdom (England and Wales)						
Conurbations	121.4	110.5	121.0	108.3	116.7[l]	103.6[l]
Urban areas > 50,000	120.2	109.6	119.7	109.0	112.0[l]	101.4[l]
Urban areas < 50,000	114.2	107.1	110.3	103.9	111.3[l]	102.9[l]

Source: Nora Federici and others, "Urban/rural differences in mortality, 1950–1970," *World Health Statistics Report*, vol. 29, No. 5-6 (Geneva, 1976), pp. 249–378.

[a] For a discussion of the method of computing these percentages, see chap. III, sect. A.

[b] Copenhagen, Frederiksberg and Gentofte.

[c] Helsinki, Turku and Tampere.

[d] 1964.

[e] 1956.

[f] 1971.

[g] Tokyo, Yokohama, Nagoya, Kyoto, Osaka and Kobe.

[h] 1957.

[i] 1968.

[j] Madrid and Barcelona.

[k] Towns with populations of 50,000 and over.

[l] 1970.

TABLE 81. STANDARDIZED MORTALITY RATIOS[a] BY SOCIAL OR OCCUPATIONAL CLASS, ENGLAND AND WALES, 1949–1953 AND 1959–1963, AND UNITED STATES OF AMERICA, 1950

	Social or occupational class[b]				
	I	*II*	*III*	*IV*	*V*
England and Wales					
1949–1953, males, 20–64 years	86	92	101	104	118
1959–1963, males, 15–64 years	76	81	100	103	143
1959–1963, married women, 15–64 years	77	83	103	105	141
1959–1963, single women, 15–64 years	83	88	90	108	121
United States of America, 1950					
Total males, 20–64 years	83	85	97	100	152
White males, 20–64 years	83	84	96	97	120

Source: United Kingdom, *The Registrar General's Decennial Supplement, England and Wales, 1961: Occupational Mortality Tables* (London, Her Majesty's Stationery Office, 1971), pp. 19, 22 and 91; United States of America, Department of Health, Education, and Welfare, National Vital Statistics Division, *Mortality by Occupation Level and Cause of Death among Men 20 to 64 Years of Age: United States, 1950,* Vital Statistics–Special Reports, vol. 53, No. 5 (September 1963).

[a] The standardized mortality ratios are the ratios of the observed deaths in a given occupational grouping to the number of deaths which would occur if the age-specific and sex-specific death rates for the whole country were applied to that occupational grouping.

[b] In England and Wales, the five social classes are defined as follows:

I–Professional and related occupations;
II–Intermediate occupations;
III–Skilled occupations;
IV–Partly skilled occupations; and
V–Unskilled occupations.

The five occupational classes of the United States classification are as follows:

I–Professional workers;
II–Technical, administrative, and managerial workers, except farm;
III–Clerical, sales, and skilled workers;
IV–Semiskilled workers;
V–Labourers, except farm.

Agricultural workers are not included in this five-fold classification for the United States.

TABLE 82. RATIOS OF DEATH RATES, BY MARITAL STATUS AND SEX, PERSONS AGED 45–54 YEARS, SELECTED MORE DEVELOPED COUNTRIES, LATEST AVAILABLE YEAR

(Death rate for all marital statuses by sex = 100)

		Males aged 45–54 years					*Females aged 45–54 years*				
		Total	*Single*	*Married and Separated*	*Widowed*	*Divorced*	*Total*	*Single*	*Married and Separated*	*Widowed*	*Divorced*
Northern America											
Canada	1971	100.0	181.5	88.1	179.5	207.3	100.0	140.3	92.2	129.9	155.8
United States of America	1960	100.0	158.6	86.9	212.1	261.6	100.0	123.1	90.4	163.5	138.5
East Asia											
Japan	1965	100.0	331.5	89.0	261.6	290.4	100.0	300.0	87.0	117.4	128.3
Eastern Europe											
Bulgaria	1965	100.0	265.5	94.7	239.8	...	100.0	235.4	94.9	112.7	...
Czechoslovakia	1970	100.0	176.7	90.3	171.6	196.0	100.0	185.1	89.7	123.0	134.5
German Democratic Republic	1972	100.0	223.1	92.3	230.8	200.0	100.0	151.2	85.4	129.3	129.3
Hungary	1973	100.0	175.6	91.5	229.9	186.6	100.0	163.4	92.5	112.9	120.4
Romania	1966	100.0	263.8	91.5	263.1	171.5	100.0	237.4	87.9	118.7	119.8
Northern Europe											
Denmark	1972	100.0	153.4	84.7[a]	142.0	236.6	100.0	123.9	87.5[a]	137.5	186.4
Finland	1972	100.0	155.3	85.4	149.5	233.0	100.0	138.2	88.2	111.8	170.6
Ireland	1971	100.0	123.5	90.6	113.4	...	100.0	147.5	87.9	89.9	...
Norway	1970	100.0	145.2	88.9[a]	164.3	192.9	100.0	167.8	89.8[a]	130.5	120.3
Sweden	1973	100.0	155.5	80.9	222.7	193.6	100.0	181.0	87.3	114.3	147.6
United Kingdom (England and Wales)	1971	100.0	148.6	91.0	175.0	166.0	100.0	136.8	93.1	129.9	136.8
Southern Europe											
Italy	1971	100.0	138.0	93.4	200.0	...	100.0	125.4	93.0	119.7	...
Spain	1965	100.0	161.8	91.2	148.0	...	100.0	122.8	91.2	122.8	...
Yugoslavia	1971	100.0	191.1	91.1	175.1	260.4	100.0	166.7	90.3	110.8	148.4
Western Europe											
Austria	1973	100.0	165.1	89.3	182.6	216.8	100.0	134.6	90.1	128.4	121.0
Belgium	1970	100.0	176.1	88.7	194.4	178.9	100.0	133.3	92.3	146.2	138.5
France	1972	100.0	171.6	86.4	240.7	155.6	100.0	148.6	91.9	156.8	105.4
Germany, Federal Republic of	1972	100.0	165.3	91.0	199.3	263.9	100.0	136.6	90.2	128.0	148.8
Netherlands	1973	100.0	173.9	92.4	158.0	181.5	100.0	130.4	92.8	142.0	147.8
Switzerland	1970	100.0	180.6	86.3	177.4	210.5	100.0	132.9	90.0	134.3	127.1
Australia and New Zealand											
Australia	1971	100.0	184.4	87.5	165.6	211.2	100.0	152.7	94.6	138.7	150.5
New Zealand	1961	100.0	156.1	93.9[a]	137.9	142.4[b]	100.0	142.5	97.5[a]	112.5	90.0[b]

[a] Excluding separated.

[b] Including separated.

TABLE 83. SEX-AGE SPECIFIC DEATH RATES, SELECTED LESS DEVELOPED COUNTRIES

(Per 1,000 population in sex-age group)

	Sex	All ages	0	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85 and over
Africa																					
Algeria 1969	M	...	—53.1—		4.5	1.9	2.6	3.1	4.1	3.5	3.9	4.2	7.6	8.0	13.7	21.1	33.8	48.3	56.0	—120.7—	
	F	...	—48.8—		3.2	1.9	4.3	4.3	3.5	4.4	4.4	4.3	5.4	7.5	9.7	15.2	25.0	27.7	47.1	— 75.5—	
Egypt 1960	M	17.6	160.9	37.9	2.4	2.1	2.3	2.7	3.4	4.1	5.0	6.6	8.0	15.1	16.8	27.4	48.1	71.7	——245.6——		
	F	16.1	162.7	40.7	2.1	1.5	1.8	1.8	2.1	3.0	3.3	4.4	4.3	8.1	7.6	14.7	27.1	45.9	——230.6——		
1965	M	15.6	136.9	24.6	2.1	1.8	1.9	2.4	3.3	4.6	6.1	8.4	11.6	16.0	23.2	32.4	44.3	64.5	103.6	—185.7—	
	F	15.0	140.3	30.4	1.7	1.4	1.4	1.7	2.3	3.1	4.3	6.9	9.5	13.0	18.0	25.1	30.9	43.8	67.0	—117.7—	
Tunisia 1968	M	14.2	125.0	17.6	2.8	1.6	2.2	1.0	3.1	4.6	2.5	6.0	9.7	11.7	17.1	26.4	40.9	68.2	80.6	—125.5—	
	F	13.3	116.8	20.8	2.6	1.2	2.3	2.9	2.3	3.3	4.6	3.6	7.3	8.8	17.8	23.2	40.5	57.5	90.0	—154.8—	
Asia																					
India (rural) 1969	M	18.2	—58.3—		5.8	3.0	2.1	3.9	3.7	4.1	6.5	8.5	13.2	18.7	28.3	44.0	55.9	——123.0——			
	F	20.1	—70.2—		7.4	2.7	4.2	5.5	5.5	6.4	6.1	7.6	9.4	16.2	20.2	38.7	52.2	——119.5——			
Indonesia 1971	M	21.8	—57.8—		7.6	6.2	7.8	8.7	9.4	10.4	12.3	15.3	20.5	28.7	42.2	64.2		——132.2——			
	F	19.5	—51.0—		7.4	6.2	7.5	8.1	8.8	9.4	11.0	13.3	17.3	24.1	36.1	51.9		——108.1——			
Sri Lanka 1968	M	8.5	—15.7—		1.9	1.3	1.6	2.2	—2.4—		—4.0—		—8.4—		——42.7——						
	F	7.3	—14.2—		1.9	1.0	1.6	2.0	—2.3—		—3.4—		—5.7—		——41.5——						
Thailand 1970	M	10.4	37.4	8.2	2.8	1.9	3.0	4.4	4.6	5.2	6.8	9.2	12.8	17.5	23.0	33.6	47.9	——110.8——			
	F	8.7	29.8	7.7	2.6	1.6	2.2	3.2	3.4	4.1	5.6	7.3	8.9	11.6	14.1	21.4	34.2	—— 82.9——			
Turkey 1966-67	M	13.6	163.7	15.2	2.5	1.6	1.8	3.3	3.1	3.6	4.3	6.0	10.3	11.3	18.1	30.2	36.9	67.1	106.0	—175.7—	
	F	12.3	145.2	14.0	2.0	1.5	2.0	2.6	3.0	3.3	4.0	4.8	7.3	9.4	15.6	20.2	31.2	58.5	81.5	—133.8—	
Latin America																					
Barbados 1969	M	7.6	49.8	1.3	0.9	0.2	1.0	0.9	0.8	2.4	2.2	5.9	5.6	9.3	11.3	30.5	35.3	64.4	80.7	—214.0—	
	F	8.1	33.6	1.3	0.4	0.3	0.3	0.6	0.7	1.1	1.8	2.1	3.6	6.4	8.4	14.8	28.5	45.1	58.0	—135.6—	
Cuba 1965	M	7.3	—10.6—		0.5	0.6	1.2	1.7	1.6	1.6	2.3	3.1	4.7	7.5	11.6	21.5	29.7	52.0	——143.5——		
	F	5.7	— 9.0—		0.4	0.5	1.0	1.2	1.2	1.5	2.0	2.6	3.9	5.9	8.7	14.0	17.8	31.6	——126.7——		
El Salvador 1971	M	8.8	70.3	8.8	1.9	1.0	1.6	3.5	4.0	4.5	4.6	6.6	8.1	10.7	15.4	20.3	31.2	43.2	—— 97.1——		
	F	7.4	55.1	8.7	2.1	0.9	1.2	1.5	1.7	2.5	3.7	4.7	5.9	8.3	11.4	16.2	27.6	39.6	—— 87.4——		
Guadeloupe 1967	M	8.5	69.1	4.0	0.9	0.7	1.0	2.2	2.8	4.1	5.4	7.6	10.4	15.6	22.4	28.7	36.5	60.1	81.9	—159.6—	
	F	8.0	68.2	4.0	0.5	0.6	0.7	0.9	3.0	3.0	2.6	5.8	7.3	9.3	12.8	21.5	31.8	41.6	62.4	—120.2—	
Guatemala 1970	M	15.5	—40.8—		6.5	3.6	3.5	5.0	5.4	7.1	8.9	10.4	12.9	20.5	24.2	37.2	50.6	83.6	75.9	—274.7—	
	F	14.3	—38.4—		6.6	3.0	3.4	4.9	5.5	6.6	7.6	8.8	9.0	13.0	16.6	33.7	45.3	71.7	68.3	—253.5—	
Jamaica 1970	M	8.3	—17.4—		0.8	0.3	0.9	1.7	2.1	2.7	3.8	5.5	7.8	12.1	13.3	21.1	22.9	44.0	66.5	112.0	168.7
	F	7.4	—15.1—		0.5	0.4	0.6	1.1	1.8	2.6	3.2	4.5	6.0	7.9	9.6	16.4	16.5	33.9	48.4	79.1	147.2
Martinique 1967	M	7.7	52.0	5.2	0.5	0.4	1.0	1.1	3.9	2.2	4.7	6.6	8.3	14.1	18.9	26.2	37.5	49.5	76.4	—119.2—	
	F	7.1	49.4	4.5	0.6	0.5	0.5	0.6	1.2	2.6	3.8	4.6	6.9	11.1	13.5	16.4	20.9	34.0	45.5	—127.6—	
Mexico 1968	M	10.2	76.4	9.5	2.2	1.3	1.9	3.0	3.8	4.6	6.8	7.4	10.1	11.8	17.4	24.5	39.6	47.3	67.6	—179.5—	
	F	9.0	63.4	10.0	2.2	1.0	1.5	2.3	2.8	3.3	4.8	4.8	6.2	7.9	12.3	20.2	32.3	42.9	62.2	—220.3—	
1973	M	9.2	—21.2—		1.5	1.2	2.2	3.3	3.9	4.6	5.8	7.4	9.3	12.9	15.5	23.5	30.5	53.7	71.1	—122.6—	
	F	7.7	—18.5—		1.4	0.9	1.4	2.0	2.4	3.0	4.0	4.9	6.1	8.8	11.0	18.8	25.6	47.2	62.7	—128.0—	
Trinidad and Tobago 1967	M	7.3	39.6	2.3	0.8	0.7	1.4	1.7	1.7	2.0	3.8	4.4	7.7	12.7	18.2	30.4	51.3	79.1	104.7	200.9	
	F	6.1	33.0	2.0	0.4	0.2	0.6	1.1	1.3	1.8	2.9	3.8	6.4	9.9	13.4	22.0	37.1	53.1	54.7	119.3	431.5
1972	M	6.9	— 7.2—		0.7	0.5	1.1	1.5	2.0	2.3	3.2	4.4	7.4	12.1	17.4	26.3	47.0	85.7	109.6	—536.2—	
	F	6.3	— 5.4—		0.6	0.5	0.8	1.0	1.3	1.8	1.9	3.4	5.9	9.7	13.1	21.6	41.2	53.5	61.2	—242.9—	

Sources: For Algeria, Commissariat national au recensement de la population, "Premiers résultats provisoires, partie retrospective", September 1971, Series 2, vol. I; for Egypt, 1965, V. G. Valaoras and others, *Population Analysis of Egypt, 1935-1970 (with Special Reference to Mortality)* (Cairo, Cairo Demographic Centre, 1972), p. 34; for India, Ministry of Home Affairs, Office of the Registrar General and Census Commissioner, *The Population of India,* CICRED Monograph Series, World Population Year 1974 (New Delhi, 1974); for Indonesia, United States of America, Bureau of the Census, International Statistical Program Center, "Levels and trends of mortality in Indonesia, 1961 and 1971", International Research Document No. 2 (Washington, D.C., Department of Commerce); for Sri Lanka, Department of Census and Statistics, *The Population of Sri Lanka,* CICRED Monograph Series, World Population Year 1974 (Colombo, 1974); for Thailand, Benjawan Rungpitarangsi, "Mortality trends in Thailand: estimates for the period 1937-1970", Institute of Population Trends, Chulalongkorn University, May 1974; for Tunisia, Institut national de la statistique, *Enquête nationale démographique, 1968-1969* (Tunis, 1974), vol. I; for other countries, official government and United Nations sources.

TABLE 84. DISEASES LISTED AMONG THE 10 LEADING CAUSES OF DEATH, 23 MORE DEVELOPED AND FOUR LESS DEVELOPED COUNTRIES, 1954–1956, 1960 AND 1970

Cause of death	Number of countries reporting each disease among the 10 leading causes of death					
	More developed countries			Less developed countries		
	1954–1956	1960	1970	1954–1956	1960	1970
Heart disease	23	23	23	4	4	4
Malignant neoplasms	23	23	23	4	4	4
Vascular lesions affecting central nervous system	23	23	23	3	3	4
All accidents	23	23	23	4	4	4
Influenza and pneumonia	23	23	23	4	4	4
Birth injuries, etc.	15	14	10	1	2	3
Congenital malformations	13	13	15	0	1	1
Nephritis and nephrosis	12	10	2	1	0	0
Diabetes mellitus	10	14	20	0	0	3
Tuberculosis	18	12	4	4	3	2
Suicide and self-inflicted injuries	8	14	19	0	0	0
Cirrhosis of the liver	7	8	13	0	1	2
Intestinal obstruction and hernia	1	2	1	0	0	0
Hypertension without mention of heart	6	4	0	0	1	0
Bronchitis	10	10	23	4	4	2
Hyperplasia of prostate	2	3	0	0	0	0
Benign neoplasms and neoplasms of unspecified nature	2	1	3	0	0	0
Gastritis, duodenitis, enteritis, and colitis except diarrhoea of the new-born	6	5	1	4	4	4
Ulcer of stomach and duodenum	3	3	3	0	0	0
All other external causes	0	0	1	0	0	1
Anaemias	0	0	0	2	1	1
Measles	0	1	0	0	0	1
Whooping cough	0	0	0	1	1	0
Malaria	0	0	0	2	0	0
Infections of the new-born	2	1	0	1	2	0
Homicide and operations of war	0	0	0	1	1	0

Sources: World Health Organization; *World Health Statistics Report*, vol. 17 (1964); vol. 27 (1974).

TABLE 85. PERINATAL DEATH RATES, SELECTED MORE DEVELOPED COUNTRIES, 1972

	Perinatal deaths per 1,000 births	*Late foetal deaths per 1,000 births*	*Early neonatal deaths per 1,000 births*
North America			
Canada	19.2	8.8	10.4
Asia			
Japan	19.0	12.9	6.1
Europe			
Austria	26.1	9.7	16.5
Bulgaria	18.7	9.4	9.2
Czechoslovakia	20.6	7.0	13.6
Denmark	16.2	7.6	8.5
Finland	17.1	8.7	8.3
German Democratic Republic	19.4	9.2	10.1
Germany, Federal Republic of	24.1	9.3	14.8
Greece	27.4	12.8	14.5
Hungary	33.4	9.3	24.1
Ireland	23.5	13.1	10.3
Italy	29.6	14.0	15.6
Luxembourg	16.2	9.8	6.4
Netherlands	16.7	9.2	7.4
Norway	17.6	9.6	8.0
Poland	21.5	8.8	12.7
Portugal	35.2	21.1	14.1
Romania	19.3	11.0	8.3
Sweden	14.4	6.8	7.6
Switzerland	17.5	8.7	8.8
United Kingdom			
England and Wales	22.0	12.1	9.8
Northern Ireland	26.3	14.5	11.9
Scotland	24.0	13.4	10.6
Yugoslavia	22.8	8.4	14.4
Oceania			
Australia	22.5	11.5	10.9

TABLE 86. PERINATAL DEATH RATES, SELECTED MORE DEVELOPED COUNTRIES, 1950–1972

(Perinatal deaths per 1,000 births)

	1950–1954	1955–1959	1960–1964	1965–1969	1970	1971	1972
North America							
Canada	34.7	30.5	28.1	24.5	21.8	20.1	19.2
United States	31.5	29.5	28.6	27.3	...	26.3	...
Asia							
Japan	44.6	42.9	36.9	26.3	21.3	20.5	19.0
Europe							
Austria	41.9	37.9	32.1	28.1	26.7	25.9	26.1
Belgium	...	33.1	29.8	26.1	...	...	...
Bulgaria	...	...	20.6	18.6	18.8	19.1	18.7
Czechoslovakia	25.0	22.3	19.6	21.4	20.6	20.7	20.6
Denmark	...	40.9	25.1	20.7	17.9	17.4	16.2
Finland	33.5	31.0	26.2	21.2	17.0	16.7	17.1
France	35.7	32.5	29.8	26.5	23.4	22.8	...
German Democratic Republic	...	...	29.6	24.1	21.5	20.4	19.4
Germany, Federal Republic of	47.4	38.6	32.4	27.2	26.4	25.3	24.1
Greece	...	23.6	29.0	29.4	27.4	27.9	27.4
Hungary	41.6	37.2	34.2	34.2	34.1	34.9	33.4
Ireland	...	37.5	34.3	27.8	24.3	22.8	23.5
Italy	49.3	44.6	39.6	34.4	31.2	30.8	29.6
Luxembourg	37.7	33.0	30.1	24.8	24.7	21.6	16.2
Netherlands	31.0	27.6	25.2	21.3	18.6	17.6	16.7
Norway	23.6	24.9	23.0	20.5	19.1	17.7	17.6
Poland	...	31.8	27.4	24.5	24.1	22.6	21.5
Portugal	...	40.9	40.3	38.6	38.1	37.2	35.2
Romania	...	29.1	23.7	27.7	24.2	20.9	19.3
Spain	...	...	...	...	...	...	...
Sweden	31.1	27.1	23.4	18.4	16.5	15.6	14.4
Switzerland	...	26.7	25.5	21.3	18.1	17.0	17.5
United Kingdom							
England and Wales	37.6	35.9	30.6	25.4	23.5	22.3	22.0
Northern Ireland	...	...	36.8	31.0	27.6	27.2	26.3
Scotland	43.3	39.6	34.7	27.9	24.8	24.5	24.0
Yugoslavia	30.9	29.7	28.2	26.6	24.9	23.6	22.8
Oceania							
Australia	30.4	27.9	25.4	22.6	21.3	20.1	22.5
New Zealand	32.3	28.0	24.9	21.2	19.6	19.3	...

TABLE 87. INFANT MORTALITY RATES, 1950–1953[a] AND 1970–1973[a] AND ANNUAL RATES OF DECREASE, LESS DEVELOPED COUNTRIES

	Mean infant mortality rate (infant deaths per 1,000 live births)		Annual rate of decrease, 1950–1953 to 1970–1973
	1950–1953	1970–1973	(percentage)
Africa			
Eastern Africa			
Mauritius	84	58 (1970–1972)	–1.9
Latin America			
Caribbean			
Barbados	136	36	–6.6
Cuba	...	(35) (1970–1971)	...
Guadeloupe	68 (1951–1953)	45 (1970–1972)	–2.3
Puerto Rico	66	27	–4.5
Trinidad and Tobago	79	29 (1970–1972)	–5.1
Middle America			
Costa Rica	91	62 (1969–1971)	–2.0
El Salvador	82	61 (1969–1971)	–1.6
Guatemala	103	82	–1.1
Honduras	...	(37) (1970–1972)	...
Mexico	...	64 (1970–1972)	...
Nicaragua	...	(46) (1971–1973)	...
Panama	...	(37) (1970–1972)	...
Tropical South America			
Ecuador	...	(78) (1970–1971)	...
Guyana	81	40 (1966–1968)	–4.5
Paraguay	...	(36) (1970–1971)	...
Suriname	44	32 (1965–1967)	–2.3
Venezuela	...	(49) (1970–1971)	...
East Asia			
Other East Asia			
Hong Kong	86	18	–7.8
South Asia			
Eastern South Asia			
Burma (towns)	...	(65) (1967–1968)	...
Indonesia	...	(137) (1961–1971)	...
Peninsular Malaysia[b]	93	41	–4.1
Singapore	74	20	–6.5
Thailand	...	(75) (1970)	...
Viet Nam[c]	...	(112) (1967)	...
Middle South Asia			
Bangladesh	...	(147) (1962–1965)	...
India (rural areas)	...	(142) (1970)	...
Iran	...	(95) (*c.* 1973)	...
Nepal	...	(200) (1970)	...
Pakistan	...	(142) (1965)	...
Sri Lanka	78	46	–2.6
Western South Asia			
Cyprus	57	29 (1969–1971)	–3.6
Democratic Yemen	...	(78) (1965–1966)	...
Israel	42 (1950–1954)	23 (1970–1974)	–2.9
Jordan	...	(105) (*c.* 1970)	...
Kuwait	...	(50) (*c.* 1970)	...
Lebanon	...	65 (1970)	...
Syrian Arab Republic	...	(125) (1970)	...
Turkey	...	(155) (1966–1967)	...

Note: Rates in parentheses represent uncertain estimates.

[a] Unless otherwise noted in parentheses.

[b] Formerly known as West Malaysia.

[c] Rate for the former Republic of South Viet-Nam only.

TABLE 88. INFANT MORTALITY RATES, 1950–1974, MORE DEVELOPED COUNTRIES

	1950–1954	1955–1959	1960–1964	1965–1969	1970–1974	1970	1971	1972	1973	1974	*Annual rate of decline of infant mortality rates, 1950–1954 to 1970–1974 (percentage)*
Temperate South America											
Argentina[a]	64.8	61.6	60.5	57.1	58.9[b]	58.9	...	...	...	...	-0.5
Chile	128.0	116.7	115.1	95.4	74.8[c]	78.8	70.9	...	...	...	-2.7
Uruguay[d]	53.9	49.9	43.7	49.2	42.7[e]	42.6	40.4	45.4	...	...	-1.2
Northern America											
Canada	37.0	30.5	26.6	21.8	16.8	18.8	17.5	17.1	15.5	15.0	-3.9
United States of America	28.1	26.4	25.3	22.7	18.5	20.0	19.1	18.5	17.7	16.7	-2.1
East Asia											
Japan	52.7	37.7	25.8	16.2	11.8	13.2	12.4	11.8	11.3	10.8	-7.5
Eastern Europe											
Bulgaria	93.6	66.1	37.8	30.9	26.0	27.3	24.9	26.2	26.2	25.5	-6.4
Czechoslovakia	58.2	31.0	22.5	23.5	21.4	22.1	21.7	21.6	21.3	20.4	-5.0
German Democratic Republic	59.9	45.2	32.8	22.0	17.3	18.5	18.0	17.6	15.6	15.9	-6.2
Hungary	73.8	58.7	44.5	37.1	34.5	35.9	35.1	33.2	33.8	34.3	-3.8
Poland	97.7	74.7	52.6	37.3	27.9	33.2	29.5	28.4	25.8	23.5	-6.3
Romania	105.0	78.0	63.0	51.4	41.1	49.4	42.4	40.0	38.1	35.0	-4.7
Northern Europe											
Denmark	28.5	23.7	20.2	16.6	12.8[f]	14.2	13.5	12.2	11.5	...	-4.0
Finland	35.2	26.3	19.5	15.3	11.8	13.2	12.7	12.0	10.6	10.2	-5.5
Iceland	21.3	18.3	16.8	13.5	11.7	13.2	12.9	11.3	9.6	11.8	-3.0
Ireland	42.1	34.6	28.4	23.2	18.0	19.5	18.0	18.0	17.8	17.1	-4.2
Norway	24.2	20.2	17.5	14.7	12.0	12.7	12.8	11.8	11.9	10.5	-3.5
Sweden	20.0	17.0	15.4	12.7	10.5	11.0	11.1	10.8	9.9	9.6	-3.2
United Kingdom	29.0	24.1	21.8	19.1	17.7	18.4	17.9	17.5	18.3	16.3	-2.5
Southern Europe											
Albania	108.0	83.2	85.3	86.8[g]	...	...	...	...	...	...	-1.5[h]
Greece	44.4	41.4	39.1	33.8	26.4	29.6	26.9	27.3	24.1	23.9	-2.6
Italy	61.0	48.7	40.4	33.5	26.7	29.6	28.5	27.0	25.7	22.6	-4.1
Malta	78.9	40.7	34.8	29.0	22.5	27.9	23.9	16.7	23.1	20.8	-6.3
Portugal	91.8	87.7	77.4	61.2	46.4	58.0	49.8	41.4	44.8	37.9	-3.4
Spain	62.5	51.6	42.2	34.1	23.5	28.1	25.7	22.9	21.5	19.7	-4.9
Yugoslavia	115.7	98.5	81.5	62.5	46.5	55.5	49.5	44.4	43.3	40.4	-4.6
Western Europe											
Austria	55.6	42.6	32.7	26.8	24.9	25.9	26.1	25.2	23.8	23.5	-4.0
Belgium	46.3	35.4	27.8	22.9	18.8	21.1	20.4	18.8	16.9	16.2	-4.5
France	46.2	33.9	25.5	20.9	16.7[a]	18.2	17.1	16.0	15.5	...	-5.1
Germany, Federal Republic of	49.4	37.3	29.3	23.3	22.8	23.6	23.3	22.7	22.9	21.1	-3.9
Luxembourg	44.5	37.6	29.4	23.1	17.5	24.6	20.4	13.5	14.3	12.5	-4.7
Netherlands	24.7	19.3	16.5	13.9	11.9	12.7	12.1	11.7	11.5	11.3	-3.7
Switzerland	29.5	23.9	20.5	16.8	13.7	15.1	14.4	13.3	13.2	12.5	-3.8
Australia and New Zealand											
Australia	23.8	21.4	19.7	18.1	17.1[a]	17.9	17.3	16.7	16.5	...	-1.7
New Zealand	26.6	23.8	20.9	18.2	16.1	16.7	16.5	15.6	16.2	15.5	-2.5
USSR	75	47	32	26.1	25.2	24.4	22.6	24.7	26.4	27.7	-5.5

[a] Completeness of data uncertain.
[b] For 1970.
[c] For 1970–1971.
[d] Registration of vital events less than 90 per cent complete.
[e] For 1970–1972.
[f] For 1970–1973.
[g] For 1965.
[h] Annual rate of decline for 1950–1954 to 1965.

TABLE 89. PERCENTAGE DISTRIBUTION OF INFANT DEATHS BY AGE AT DEATH, SELECTED COUNTRIES WITH LOW INFANT MORTALITY RATES, 1970–1972

Age at death	*United States of America, 1971*	*Japan*	*Federal Republic of Germany*	*Italy*	*Poland*	*Sweden*	*United Kingdom (England and Wales)*	*Australia 1970*
Total	100	100	100	100	100	100	100	100
0 days	43	17	42	26	21	32	34	40
0 days + 1–6 days	67	51	68	56	44	71	57	65
1–6 days	24	34	26	30	23	39	23	25
7–27 days	7	15	9	15	16	10	10	7
28 days–11 months	26	34	23	29	40	19	33	28
Infant mortality rate	19.1	12.4	23.2	28.3	30.3	11.0	17.7	17.9

Source: Contributed by the World Health Organization.

TABLE 90. PERCENTAGE DISTRIBUTION OF INFANT DEATHS BY CAUSE, SELECTED MORE DEVELOPED COUNTRIES, 1970–1972

Cause of death[a]	*United States of America*	*Japan*	*Federal Republic of Germany*	*Italy*	*Poland*	*Sweden*	*United Kingdom (England and Wales)*	*Australia*
Infective and parasitic diseases (A1–A43)	2.0	5.2	2.9	8.4	6.2	2.0	3.9	2.6
Avitaminoses and other nutritional deficiency (A64)	0.1	0.3	0.5	0.1	0.2	0.0	0.1	0.1
Diseases of the nervous system (A17–A78)	1.4	1.9	2.2	1.5	3.5	1.7	1.9	1.6
Influenza (A88)	0.2	0.2	0.2	0.4	0.7	0.0	0.1	0.2
Pneumonia (A89–A91)	8.6	10.9	2.9	12.5	18.2	2.2	10.2	7.6
Intestinal obstruction and hernia (A103)	0.9	1.5	0.6	0.8	0.5	0.6	1.6	1.1
Congenital anomalies (A127–A129)	14.6	16.9	17.5	12.3	16.5	28.2	21.3	18.3
Causes of perinatal mortality (A130–A135)	59.2	50.0	62.9	55.8	39.8	58.4	45.6	57.4
Symptoms and other ill-defined conditions (A137)	3.4	1.3	1.7	0.9	3.6	1.8	2.3	0.6
Accidents and homicide (AE138–AE147, AE149)	3.7	5.0	4.0	0.6	1.6	1.7	3.2	3.4
All other causes	5.9	6.8	4.6	6.7	9.2	3.4	9.8	7.1
All causes	100	100	100	100	100	100	100	100

Source: Contributed by the World Health Organization. The numbers in parentheses refer to the cause-of-death groups of the "A" list of 150 causes.

[a] Sixth and seventh revisions of the WHO International Classification of Diseases.

TABLE 91. INDEXES OF CHANGES IN INFANT MORTALITY RATES BY CAUSE BETWEEN 1953–1957 AND 1963–1967 *(1953/1957 = 100)*

	1963–1967 average infant mortality rates as percentage of 1953–1957 rates						
Cause of death[a]	*United States of America*	*Japan*	*Federal Republic of Germany*	*Czecho-slovakia*	*Sweden*	*United Kingdom (England and Wales)*	*Australia*
Infective and parasitic diseases (A1–A43)	69	19	26	25	73	42	51
Avitaminoses and other nutritional deficiency (A64)	40	3	92	0	0	117	17
Diseases of the nervous system (A17–A78)	107	46	63	48	74	94	68
Influenza (A88)	34	24	29	28	0	33	61
Pneumonia (A89–A91)	97	36	22	35	27	92	89
Intestinal obstruction and hernia (A103)	84	73	75	58	103	78	88
Congenital anomalies (A127–A129)	92	101	81	108	89	87	88
Causes of perinatal mortality (A130–A135)	93	48	63	80	78	74	84
Symptoms and other ill-defined conditions (A137)	100	30	28	19	55	58	62
Accidents and homicide (AE138–AE147, AE149)	98	68	105	64	71	91	118

Source: Contributed by the World Health Organization.

[a] Sixth and seventh revisions of the ICD. The numbers in parentheses refer to the cause-of-death groups of the "A" list of 150 causes.

TABLE 92. CHILDHOOD MORTALITY RATES, AGES 1–4 YEARS, SELECTED MORE DEVELOPED COUNTRIES, LATEST AVAILABLE YEAR

		Both sexes	*Male*	*Female*
Northern America				
United States of America	1971	0.8	0.9	0.8
Canada	1970	0.8	0.9	0.8
Eastern Europe				
Bulgaria	1972	1.2	1.3	1.1
Czechoslovakia	1970	1.0	1.1	0.9
German Democratic Republic	1970	0.9	1.0	0.7
Hungary	1971	0.9	1.0	0.8
Poland	1971	1.1	1.2	1.0
Romania	1970	2.4	2.5	2.3
Northern Europe				
Denmark	1969	0.7	0.8	0.6
Finland	1972	0.8	—	—
Iceland	1970	0.6	0.7	0.6
Ireland	1970	0.9	0.9	0.8
Norway	1970	0.9	1.0	0.7
Sweden	1971	0.4	0.5	0.4
United Kingdom	1971	0.7	0.8	0.6
Southern Europe				
Greece	1971	0.9	0.9	0.8
Italy	1969	1.1	1.2	1.0
Portugal	1971	3.2	3.4	3.0
Spain	1970	0.9	1.0	0.8
Yugoslavia	1971	2.5	2.4	2.6
Western Europe				
Austria	1970	1.0	1.1	1.0
Belgium	1969	1.0	1.1	0.9
France	1970	0.8	0.9	0.7
Germany, Federal Republic of	1972	1.0	1.1	0.8
Luxembourg	1971	1.1	1.1	1.1
Netherlands	1971	0.8	1.0	0.7
Switzerland	1971	0.9	1.0	0.8
Australia and New Zealand				
Australia	1971	0.9	0.9	0.8
New Zealand	1971	0.8	0.9	0.7

Source: Contributed by the World Health Organization.

TABLE 93. ANNUAL RATES OF DECREASE OF CHILDHOOD MORTALITY RATE, SELECTED COUNTRIES

	Period	*Annual rate of decrease (percentage)*
Australia	1951–1969	–4.4
Canada	1951–1969	–4.2
Colombia	1954–1969	–3.6
Czechoslovakia	1954–1969	–4.5
Denmark	1954–1969	–2.8
Egypt	1957–1969	–3.6
El Salvador	1951–1969	–2.8
Finland	1954–1969	–4.9
France	1951–1969	–5.4
Germany, Federal Republic of	1954–1969	–3.2
Ireland	1951–1969	–5.5
Israel	1951–1969	–8.1
Japan	1951–1969	–10.4
Netherlands	1951–1969	–3.3
Norway	1954–1969	–2.1
Sri Lanka	1951–1969	–7.9
Sweden	1954–1969	–3.9
Switzerland	1954–1969	–3.5
United Kingdom	1951–1969	–2.7
United States of America	1951–1969	–2.6

Source: Contributed by the World Health Organization.

TABLE 94. URBAN AND RURAL CHILDHOOD MORTALITY RATES, AGES 1–4 YEARS, LATEST AVAILABLE YEAR

	Urban mortality rates		*Rural rural mortality rates*		*Ratio of rural to urban rates*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*
Asia						
Japan (1965)	1.4	1.1	2.0	1.5	1.4	1.4
Malaysia, West (1970)	3.1	3.1	4.8	4.8	1.5	1.5
Pakistan (1968)	10.1	16.8	19.2	18.0	1.9	1.1
Europe						
Bulgaria (1970)	0.9	0.9	1.8	1.4	2.0	1.6
Denmark (1969)	0.8	0.8	0.8	0.5	1.0	0.6
Finland (1971)	0.7	0.5	0.7	0.8	1.0	1.6
German Democratic Republic (1971)	0.8	0.7	1.0	0.7	1.3	1.0
Greece (1971)	0.7	0.5	1.1	1.1	1.6	2.2
Hungary (1970)	1.0	0.8	1.3	1.1	1.3	1.4
Netherlands (1972)	0.8	0.6	1.2	0.7	1.5	1.2
Norway (1973)	0.6	0.6	1.0	0.6	1.7	1.0
Poland (1973)	0.8	0.8	1.2	0.9	1.5	1.1
Romania (1973)	1.8	1.5	2.3	1.9	1.3	1.3
United Kingdom (1973)	0.8	0.6	0.8	0.5	1.0	0.8

TABLE 95. INFECTIOUS DISEASES AND NUTRITIONAL DEFICIENCIES AS CAUSES OF DEATH IN THE PAHO STUDY OF CHILDHOOD MORTALITY

		Deaths having infectious diseases as underlying cause only		*Deaths having nutritional deficiencies as underlying or associated cause*					
				Total underlying and associated cause		*Underlying cause only*		*Associated cause only*	
	Number of deaths from all causes	*Number*	*Percentage of all causes*	*Number*	*Percentage of all causes*	*Number*	*Percentage of all causes*	*Number*	*Percentage of all causes*
Argentina									
Chaco Province									
Resistencia	117	66	56.4	76	65.0	12	10.3	64	54.7
Rural departments	174	98	56.3	100	57.5	6	3.4	94	54.0
San Juan Province									
San Juan (city)	31	9	29.0	11	35.5	—	—	11	35.5
Suburban departments	84	24	28.6	27	32.1	7	8.3	20	23.8
Rural departments	141	72	51.1	58	41.1	10	7.1	48	34.0
Bolivia									
La Paz	1430	922	64.5	737	51.5	33	2.3	704	49.2
Viacha	56	34	60.7	24	42.9	1	1.8	23	41.1
Brazil									
Recife	862	518	60.1	599	69.5	100	11.6	499	57.9
Ribierão Prêto									
Ribierão Prêto (city)	64	34	53.1	44	68.8	5	7.8	39	60.9
Franca	70	31	44.3	39	55.7	8	11.4	31	44.3
Municipalities	33	14	42.4	23	69.7	3	9.1	20	60.6
São Paulo	524	218	41.6	251	47.9	38	7.3	213	40.6
Chile									
Santiago	282	64	22.7	95	33.7	15	5.3	80	28.4
Municipalities	28	11	39.3	14	50.0	—	—	14	50.0
Colombia									
Cali	474	261	55.1	287	60.5	85	17.9	202	42.6
Cartagena	399	224	56.1	283	70.9	73	18.3	210	52.6
Medellín	424	244	57.5	262	61.8	50	11.8	212	50.0
El Salvador									
San Salvador	644	436	67.7	421	65.4	62	9.6	359	55.7
Rural municipalities	434	295	68.0	309	71.2	75	17.3	234	53.9
Jamaica									
Metropolitan Kingston	276	84	30.4	101	36.6	25	9.1	76	27.5
St. Andrew, rural	38	12	31.6	26	68.4	5	13.2	21	55.3
Mexico									
Monterrey	733	426	58.1	425	58.0	47	6.4	378	51.6
Canada									
Sherbrooke	61	3	4.9	6	9.8	—	—	6	9.8
United States of America									
San Francisco	25	1	4.0	3	12.0	—	—	3	12.0
California, suburban	89	4	4.5	20	22.5	—	—	20	22.5

Source: Contributed by the World Health Organization.

TABLE 96. AGE-STANDARDIZED MATERNAL MORTALITY RATIOS, SELECTED COUNTRIES, 1951–1953 TO 1970–1972

(Ratios per 100,000 live births, standardized to unweighted mean age distribution of births in 32 countries, 1966–1968)

	1951–1953	1956–1958	1961–1963	1966–1968	1970–1972
Australia	70.0	44.8	28.9	25.7	...
Austria	...	79.9	54.0	34.5	25.3
Belgium	...	58.2	24.7	18.2	...
Bulgaria	...	...	...	36.3	32.9
Canada	80.9	48.8	35.8	27.5	19.0
Chile	...	205.8	175.9	147.5	...
Czechoslovakia	...	48.9	40.6	28.5	21.9
Denmark	60.9	32.8	17.8	12.9	7.1
Finland	...	72.9	41.6	22.9	9.9
France	71.3	49.3	35.3	25.8	21.6
Germany, Federal Republic of	...	...	78.1	51.2	42.4
Greece	...	...	61.8	45.4	33.3
Hungary	...	69.8	58.3	42.0	39.8
Ireland	...	73.4	29.6	21.8	27.0
Israel[a]	...	53.7	48.8	33.2	17.3
Italy	...	99.1	85.5	59.9	44.7
Japan	159.6	171.6	125.3	85.2	52.9
Mexico	...	...	165.9	125.3	117.7
Netherlands	60.0	44.2	28.5	20.1	12.9
New Zealand	...	...	32.9	25.4	...
Norway	61.9	46.4	21.0	20.6	13.7
Poland	...	...	34.2	29.6	24.1
Portugal	...	92.1	76.4	58.3	44.9
Romania	...	...	76.6	58.2	41.1
Sri Lanka	...	359.6	246.0	171.6	...
Sweden	58.6	29.3	18.7	11.1	9.4
Switzerland	100.7	61.6	40.6	29.9	21.6
United Kingdom					
England and Wales	63.5	41.0	27.0	20.2	15.3
Scotland	82.5	44.4	32.6	20.9	17.4
United States of America	66.1	36.1	32.2	26.4	21.1
Venezuela	...	118.4	84.3	78.4	...
Yugoslavia	...	...	103.5	63.9	32.5
Unweighted mean of age-standardized maternal mortality rates					
A[b]	78.7	55.0	37.7	27.3	19.3
B[c]	128.0	88.4	62.9	46.2	35.0
Annual rate of change (per cent)					
A[b]	...	-6.9	-7.3	-6.2	-8.4
B[c]	...	-7.1	-6.6	-6.0	-6.7
Percentage of crude ratio					
A[b]	94.0	98.6	104.4	109.2	115.6
B[c]	92.9	96.6	98.6	100.0	102.3

Source: Contributed by the World Health Organization.

[a] Jewish population.

[b] Reported values for 11 countries represented in each three-year period.

[c] Estimated values for 32 countries represented in 1966–1968.

TABLE 97. AGE-SPECIFIC MATERNAL MORTALITY RATIOS PER 100,000 LIVE BIRTHS, SELECTED COUNTRIES AND PERIODS

	Age of deceased					
	19 or less	*20–24*	*25–29*	*30–34*	*35–39*	*40 or over*
Chile						
1956–1958	168.0	107.7	163.5	279.3	445.5	577.4
1966–1968	134.6	81.6	104.3	193.8	317.8	456.4
France						
1951–1953	42.9	43.2	53.0	73.7	169.8	256.2
1961–1963	20.9	16.0	21.6	46.2	88.7	144.6
1970–1972	11.9	9.7	13.7	32.1	50.3	101.9
Germany, Federal Republic of						
1961–1963	49.4	39.3	55.0	101.2	178.8	285.2
1970–1972	30.2	20.7	27.0	47.1	112.4	185.1

TABLE 97. AGE-SPECIFIC MATERNAL MORTALITY RATIOS PER 100,000 LIVE BIRTHS, SELECTED COUNTRIES AND PERIODS *(continued)*

	19 or less	*20–24*	*25–29*	*30–34*	*35–39*	*40 or over*
Italy						
1956–1958	74.9	61.7	77.9	114.9	200.3	339.2
1966–1968	28.4	40.9	37.8	74.4	130.8	245.6
1970–1972	18.8	26.1	29.0	54.0	111.2	183.1
Japan						
1951–1953	186.8	111.0	113.7	174.1	315.3	594.3
1961–1963	117.7	59.7	78.4	151.8	375.6	874.2
1970–1972	50.2	23.4	31.5	65.9	182.9	487.6
Mexico						
1961–1963	204.2	128.4	127.7	196.3	280.2	384.3
1970–1972	136.0	85.9	100.7	142.6	232.0	246.2
Sri Lanka						
1956–1958	338.9	280.7	317.1	377.7	585.2	910.7
1966–1968	132.9	135.0	156.5	181.6	297.5	481.7
United Kingdom (England and Wales)						
1951–1953	33.9	35.2	45.3	73.1	132.2	289.0
1961–1963	10.6	17.0	18.0	31.3	61.8	122.9
1970–1972	7.8	9.7	9.8	17.1	41.7	64.3
United States of America						
1951–1953	51.7	34.5	45.0	78.0	137.8	269.5
1961–1963	17.1	14.4	22.0	45.3	75.0	127.3
1970–1972	13.7	9.2	13.5	25.1	55.2	85.2
Venezuela						
1956–1958	130.5	82.7	90.0	141.5	205.1	279.7
1966–1968	77.8	41.5	67.2	97.5	154.1	215.5

Source: Contributed by the World Health Organization.

TABLE 98. RELATIVE LEVELS OF AGE-SPECIFIC MATERNAL MORTALITY RATIOS PER 100,000 LIVE BIRTHS, SELECTED COUNTRIES AND PERIODS
(Age-adjusted ratio = 100)

	Age of deceased					
	19 or less	*20–24*	*25–29*	*30–34*	*35–39*	*40 or over*
Chile						
1966–1968	91	55	71	131	215	309
France						
1970–1972	55	45	63	149	233	472
Germany, Federal Republic of						
1970–1972	71	49	64	111	265	437
Italy						
1970–1972	42	58	65	121	249	410
Japan						
1970–1972	95	44	60	125	346	922
Mexico						
1970–1972	116	73	86	121	197	209
Sri Lanka						
1966–1968	77	79	91	106	173	281
United Kingdom (England and Wales)						
1970–1972	51	63	64	112	273	420
United States of America						
1970–1972	65	44	64	119	262	404
Venezuela						
1966–1968	99	53	86	124	197	275
Unweighted means						
Six low-birth-rate countries	63	50	63	123	271	511
Four high-birth-rate countries	96	65	84	120	196	268

Source: Contributed by the World Health Organization.

TABLE 99. MATERNAL MORTALITY RATES PER MILLION WOMEN 15–44 YEARS OF AGE, SELECTED COUNTRIES, 1951–1953 TO 1970–1972

	1951–1953	1956–1958	1961–1963	1966–1968	1970–1972
Australia	76.4	50.2	31.6	22.0	...
Austria	...	66.7	50.8	29.3	17.9
Belgium	...	50.4	21.5	13.5	...
Bulgaria	...	...	...	20.2	18.2
Canada	101.3	67.0	43.6	22.2	12.4
Chile	...	322.5	292.1	197.6	...
Czechoslovakia	...	40.3	27.5	16.4	12.9
Denmark	51.2	24.2	14.0	8.8	4.0
Finland	...	73.6	37.6	16.3	4.9
France	66.6	45.6	33.3	21.1	16.3
Germany, Federal Republic of	...	...	67.4	41.4	25.8
Greece	...	...	46.6	35.2	24.1
Hungary	...	50.2	31.6	23.2	21.3
Ireland	...	109.8	47.3	32.8	35.9
Israel[a]	...	59.8	51.3	33.5	18.6
Italy	...	83.4	76.6	52.1	35.7
Japan	160.9	115.7	73.1	47.9	33.2
Mexico	...	...	379.8	289.4	278.7
Netherlands	74.1	52.5	32.5	18.4	9.5
New Zealand	...	...	39.4	26.1	...
Norway	63.9	49.1	18.9	17.7	10.4
Poland	...	...	31.0	20.7	15.9
Portugal	...	105.0	92.7	64.9	46.6
Romania	...	...	50.4	55.7	34.3
Sri Lanka	...	635.6	441.5	281.3	...
Sweden	46.3	22.2	12.7	7.9	5.9
Switzerland	84.2	52.3	33.7	22.4	14.2
United Kingdom					
England and Wales	45.4	31.8	23.7	16.3	10.8
Scotland	69.1	40.1	31.8	17.7	12.2
United States of America	66.4	40.4	32.2	19.7	13.6
Venezuela	...	260.7	183.3	169.9	...
Yugoslavia	...	...	93.0	50.0	22.5
Unweighted mean of maternal mortality rates					
A[b]	75.4	49.2	31.8	20.0	13.0
B[c]	167.1	109.0	77.2	53.5	40.4
Annual rate of change (per cent)					
A[b]	...	–8.2	–8.4	–8.8	–10.3
B[c]	...	–8.2	–6.7	–7.1	–6.8

Source: Contributed by the World Health Organization.

[a] Jewish population.

[b] Reported values for 11 countries represented in each three-year period.

[c] Estimated values for 32 countries represented in 1966–1968.

TABLE 100. MATERNAL MORTALITY AS PERCENTAGE OF MORTALITY FROM ALL CAUSES, WOMEN 15–44 YEARS OF AGE, SELECTED COUNTRIES, 1951–1953 TO 1970–1972

	1951–1953	1956–1958	1961–1963	1966–1968	1970–1972
Australia	5.5	4.3	3.0	2.2	...
Austria	...	5.1	4.5	2.8	1.8
Belgium	...	4.5	2.2	1.4	...
Bulgaria	...	...	...	2.0	1.9
Canada	7.4	6.2	4.5	2.4	1.3
Chile	...	10.5	10.0	8.7	...
Czechoslovakia	...	3.4	2.8	1.8	1.5
Denmark	4.2	2.5	1.4	1.0	0.5
Finland	...	5.4	3.5	1.8	0.6
France	4.0	3.8	3.0	2.1	1.7
Germany, Federal Republic of	...	...	6.0	3.9	2.5
Greece	...	...	5.2	4.4	3.2
Hungary	...	3.4	2.5	2.2	2.0
Ireland	...	7.6	4.0	3.4	4.2
Israel[a]	...	5.6	5.5	3.9	2.3
Italy	...	7.0	7.2	5.6	4.2
Japan	5.3	5.7	5.1	4.4	3.4
Mexico	...	...	11.7	10.3	10.4
Netherlands	7.2	6.2	4.4	2.5	1.4

TABLE 100. MATERNAL MORTALITY AS PERCENTAGE OF MORTALITY FROM ALL CAUSES, WOMEN 15–44 YEARS OF AGE, SELECTED COUNTRIES, 1951–1953 TO 1970–1972 *(continued)*

	1951–1953	*1956–1958*	*1961–1963*	*1966–1968*	*1970–1972*
New Zealand	...	...	4.0	2.6	...
Norway	6.1	5.9	2.5	2.6	1.6
Poland	...	...	2.5	2.1	1.7
Portugal	...	6.6	7.0	5.7	4.3
Romania	...	...	3.6	4.4	2.7
Sri Lanka	...	19.3	16.1	12.1	...
Sweden	4.0	2.3	1.6	1.0	0.8
Switzerland	6.6	5.4	4.0	3.1	1.9
United Kingdom					
England and Wales	9.4	7.2	4.2	2.7	1.9
Scotland	3.9	3.1	2.7	1.7	1.3
United States of America	4.2	3.0	2.5	1.6	1.1
Venezuela	...	8.7	8.8	8.8	...
Yugoslavia	...	...	6.0	4.2	2.0
Unweighted mean of percentages					
A[b]	5.7	4.7	3.3	2.2	1.5
B[c]	7.4	6.1	4.8	3.7	2.8
Annual rate of change (per cent)					
A[b]	...	-3.8	-6.9	-6.9	-9.4
B[c]	...	-3.9	-4.6	-5.0	-7.1

Source: Contributed by the World Health Organization.

[a] Jewish population.

[b] Reported values for 11 countries represented in each three-year period.

[c] Estimated values for 32 countries represented in 1966–1968.

TABLE 101. ESTIMATED LEVELS OF FERTILITY, COUNTRIES OF AFRICA, LATIN AMERICA AND ASIA, SPECIFIED YEARS

	Method of estimation	*Year*	*Crude birth rate (per 1,000 population)*	*Year*	*Gross reproduction rate*
Africa					
Eastern Africa					
Burundi	C(4)	1965	46	1965	3.0
Comoros	C(4)	1966	47	1966	3.0
Ethiopia	C(4)	1970	52	1970	3.6
Kenya	C(4)	1969	49	1969	3.3
Madagascar	C(3)	1966	49	1966	3.3
Malawi	C(4)	1966	48	1966	3.0
Mauritius	A	1972	24.8	1972	1.60
Mozambique	C(4)	1960	43	1960	2.7
Réunion	A	1973	28.1	1970[a]	2.26
Rwanda	C(4)	1957	50	1957	3.5
Somalia	C(4)	1965	47	1965	3.2
Southern Rhodesia	C(4)	1969	48	1969	3.3
Uganda	C(4)	1969	46	1969	3.0
United Republic of Tanzania	C(4)	1967	48	1967	3.2
Zambia	C(4)	1969	50	1969	3.3
Middle Africa					
Angola	C(4)	1960	49	1960	3.2
Central African Empire	C(3)	1959–1960[b]	45	1959–1960[b]	2.5
Chad	C(3)	1963–1964	48	1963–1964	2.6
Congo	C(3)	1960–1961	44	1960–1961	2.8
Equatorial Guinea	C(4)	1965	35	1965	2.4
Gabon	C(3)	1960–1961	31	1960–1961	2.0
United Republic of Cameroon	C(3)	1960[c]	40	1960[c]	2.5
Zaire	C(4)	1955–1957	45	1955–1957	2.8
Northern Africa					
Algeria	A	1967	46.1[d]	1967	3.38[e]
Egypt	A	1971	34.8	1971	—
Libyan Arab Jamahiriya	C(4)	1964	47	1964	3.2
Morocco	C(3)	1961–1963	45	1961–1963	3.4
Sudan	C(4)	1955–1956	49	1955–1956	3.4
Tunisia	A	1972	39.2[f]	1970	3.12[f]
Southern Africa					
Botswana	C(4)	1964	45	1964	2.9
Lesotho	C(4)	1966	38	1966	2.4
Namibia	C(4)	1960	45	1960	3.0
Swaziland	C(4)	1966	50	1966	3.2

TABLE 101. ESTIMATED LEVELS OF FERTILITY, COUNTRIES OF AFRICA, LATIN AMERICA AND ASIA, SPECIFIED YEARS *(continued)*

	Method of estimation	*Year*	*Crude birth rate (per 1,000 population)*	*Year*	*Gross reproduction rate*
Western Africa					
Benin	C(3)	1961	50	1961	3.3
Gambia	C(4)	1963	40	1963	2.6
Ghana	C(4)	1960	50	1960	3.3
Guinea	C(3)	1954–1955	48	1954–1955	3.0
Guinea-Bissau	C(4)	1965	40	1965	2.6
Ivory Coast	C(3)	1957–1958	52	1957–1958	3.0
Liberia	C(3)	1969–1970	49	1969–1970	3.2
Mali	C(3)	1960–1961	50	1960–1961	3.3
Mauritania	C(4)	1964–1965	45	1964–1965	2.9
Niger	C(3)	1959–1960	53	1959–1960	3.5
Nigeria	C(4)	1963	50	1963	3.3
Senegal	C(4)	1960–1961	49	1960–1961	3.1
Sierra Leone	C(4)	1963	45	1963	2.9
Togo	C(3)	1961	50	1961	3.1
Upper Volta	C(3)	1960–1961	49	1960–1961	3.2
Latin America					
Caribbean					
Cuba	A	1973	25.5	1969–1971	1.88
Dominican Republic	C	1970	46.4	1970	3.5
Guadeloupe	A	1973	28.0	1967	2.66
Haiti	B,C	1973	35.8	1973	2.4
Jamaica	A	1974	30.8	1969–1971	2.71
Martinique	A	1973	22.4	1970	2.28
Puerto Rico	A	1973	23.3	1972	1.54
Trinidad and Tobago	A	1974	24.0	1970	1.68
Middle America					
Costa Rica	A	1973	28.5	1972	2.13
El Salvador	A	1973	40.3	1971	2.9
Guatemala	A	1973	42.4	1970	2.80
Honduras	B	1970–1972	49.3	1970–1972	3.6
Mexico	A	1973	45.8	1970	3.37
Nicaragua	C	1965–1970	48.6	1970	3.5
Panama	A	1974	31.2	1974	2.2
Temperate South America					
Argentina	A	1970	22.9	1970	1.5
Chile	A	1971	28.5	1970	1.8
Uruguay	A	1972	20.9	1963	1.42
Tropical South America					
Bolivia	C	1965–1970	43.9	1960	3.0
Brazil	C	1970	36.3	1970	2.4
Colombia	B	1967–1968	41.3	1967–1968	2.9
Ecuador	C	1965–1970	44.6	1965	3.3
Guyana[g]	A	1968	38.2	—	—
Paraguay	C	1965–1970	43.7	1960	3.2
Peru	B	1969	42.6	1969	3.0
Surinam[h]	A	1970	36.5	1970	2.7
Venezuela	A	1973	36.0	1971	2.61
East Asia					
China	D	1970–1974	26.9	...	...
Japan	A	1970	18.8	1970	1.0
Other East Asia					
Democratic People's Republic of Korea	C(6)	1972	44.0	...	...
Hong Kong	A	1974	19.3	1974	1.6
Mongolia	C(6)	1972	40.0	...	...
Republic of Korea	C(4)	1970	29.0	1970	1.9
South Asia					
Eastern South Asia					
Burma	C(6)	1972	40.0	...	...
Democratic Kampuchea	C(5)	1957–1962[i]	45.9	1957–1962[i]	3.5
East Timor	A	1970	43.0	...	...
Indonesia	C(2)	1966–1970[j]	44.0	1966–1970[j]	2.7
Lao People's Democratic Republic	C(6)	1972	42.0	...	...
Malaysia[k]	A	1970	33.9	1970	2.5
Philippines	D	1970[l]	43.2	1970[l]	2.9
Singapore	A	1974	19.9	1974	1.1

TABLE 101. ESTIMATED LEVELS OF FERTILITY, COUNTRIES OF AFRICA, LATIN AMERICA AND ASIA, SPECIFIED YEARS *(continued)*

	Method of estimation	*Year*	*Crude birth rate (per 1,000 population)*	*Year*	*Gross reproduction rate*
Thailand	B	1964–1965[n]	41.8	1964–1965[n]	3.1
Viet Nam[m]	D	1973	42.0	1973	3.3
Middle South Asia					
Afghanistan	C(6)	1972	51.0	...	...
Bangladesh	C(6)	1961–1971[o]	48.0–51.0	1961–1971[o]	3.0–3.4
Bhutan	C(6)	1972	47.0	...	...
India	B	1970[p]	37.0	1970[p]	2.7[q]
Iran	C(6)	...[r]	48.0	...[r]	3.4
Nepal	C(6)	1965–1966[s]	50.0–54.0	...	...
Pakistan	C(6)	1966[t]	50.0	...	...
Sri Lanka	A	1970	29.4	1969	2.2
Western South Asia					
Cyprus	A	1974	18.1	1974	1.1
Democratic Yemen	C(6)	1972	50.0	...	...
Iraq	C(4)	1965[u]	49.5	1965[u]	3.5
Israel	A	1974	27.7	1974	1.8
Jordan	B	1972[v]	45.0	1972[v]	3.4
Kuwait	C(4)	1965[w]	45.2	1965[w]	3.6
Lebanon	B	1970[x]	40.9	...	...
Oman	C(6)	1972	50.0	...	...
Saudi Arabia	C(6)	1972	50.0	...	...
Syrian Arab Republic	C(4)	1965[y]	47.9	1965[y]	3.5
Turkey	B	1965–1967[z]	40.0	1965–1967[z]	2.6
Yemen	D	...[aa]	45.0–50.0	...	...

Note: Methods of estimation were as follows:

A—"Complete" birth registration statistics;

B—Birth data from sample survey;

C—Other estimates, including estimates whose basis cannot be clearly determined from available information;

(1) "Reverse survival" method;

(2) On number of children reported as having been born to each woman during her lifetime;

(3) On reported births occurring during the 12-month period before a survey or census and the number of children ever born, both by age of mother;

(4) On the analysis of the age composition of the population, supplemented by indications of the rate of natural increase or of an approximate level of mortality;

(5) On the number of reported births by age of mother in the year preceding the census, adjusted by graphic technique;

(6) Basis either unknown or impossible to determine clearly from information available;

D—Either no data available or birth registration statistics so deficient as to be useless for identifying the trend.

[a] See France, Institut national de la statistique et des études economiques, *Annuaire statistique de la Réunion, 1969-1972* (Paris, 1973), p. 36, table 3.

[b] Survey data excluding the populations of Bangui and Zone East and nomad populations (Bororos, Babugas).

[c] Data for Northern Cameroon.

[d] See Jean-Noël Biraben, "Essai d'estimation des naissances de la population algérienne depuis 1891", *Population* (Paris), vol. 24, No. 4 (July–August 1969), p. 725.

[e] For 1964–1965. See Jacques Vallin, "Les populations de l'Afrique au nord du Sahara: Maroc, Algérie, Tunisie, Libye, Egypte", *Population* (Paris), vol. 25, No. 6 (November–December 1970), p. 1230.

[f] Official rates corrected for underregistration by 5 per cent.

[g] Excluding Amerindian population.

[h] Excluding Indian and Negro population living in tribes.

[i] George S. Siampos, "The population of Cambodia, 1945–1980", *The Milbank Memorial Fund Quarterly*, vol. XLVIII, No. 3 (July 1970), p. 336.

[j] Suwardjono Surjaningrat and others, "Indonesia—East Asia review, 1973", *Studies in Family Planning*, vol. 5, No. 5 (May 1974), pp. 148–149. See also Geoffrey McNicoll and Si Gde Made Mamas, *The Demographic Situation in Indonesia*, Papers of the East-West Population Institute, No. 28 (Honolulu, Hawaii, East-West Center, 1973), pp. 18–19 and 45.

[k] Data for Peninsular Malaysia only.

[l] For the 1970 crude birth rate, see Mercedes B. Concepción, "Philippines—East Asia review, 1973", *Studies in Family Planning*, vol. 5, No. 5 (May 1974), p. 160. Gross reproduction rate derived from the fertility model used in the World Bank projections. See "Country statement of the Philippines" (POP/APC.2/CP/3), submitted to the Second Asian Population Conference, held at Tokyo from 1 to 13 November 1972, p. 11.

[m] Data for former Republic of South Viet-Nam. See Troung-Minh-Cac and Ngo Yen-Tuan-Phong, "Viet-Nam (South)—East Asia review, 1973", *Studies in Family Planning*, vol. 5, No. 5 (May 1974), p. 172.

[n] Thailand, National Statistical Office, Office of the Prime Minister, *Report—The Survey of Population Change, 1964-1967* (Bangkok, 1968), p. 10.

[o] Bangladesh, Ministry of Home Affairs, Census Organization, *Projection and Estimate of Population of Bangladesh,* Bulletin No. 1, 1973; Census 1974, Publication No. 7 (Dacca), p. 3.

[p] "Country statement of India" (POP/APC.2/CP/17), submitted to the Second Asian Population Conference, chap. 4, p. 8.

[q] Calculated on the basis of age-specific fertility rates obtained from the Sample Registration System for rural areas in India in 1969. See "Country statement of India," p. 9.

[r] In the source, no specific date was given for the estimated fertility rates. See "Country statement of Iran" (POP/APC.2/CP/5), submitted to the Second Asian Population Conference, p. 4.

[s] Daniel Taylor and Rita Thapa, "Nepal", *Country Profile* (New York, The Population Council, 1972), p. 2.

[t] "Pakistan's population situation", *Birthright,* special issue, 1971, p. 3.

[u] K. C. Zachariah and Widad Hamoredi, "Use of census data for estimating demographic measures of Iraq", in Cairo Demographic Centre, *Demographic Measures and Population Growth in Arab Countries,* Research Monograph Series No. 1 (Cairo, 1970), p. 46.

[v] Jordan, Department of Statistics, *Draft Final Report of National Seminar on Population Policy as Related to Development Strategy, 2–7 December 1972* (Amman, 1972), p. 1.

[w] K. C. Zachariah, "The demographic measures of Arab countries, a comparative analysis", in Cairo Demographic Centre, *op. cit.,* p. 321.

[x] Youssef Courbage and Philippe Fargues, *La situation démographique au Liban,* vol. I, *Mortalité, fécondité et projection: méthodes et résultats* (Beirut, 1973), p. 36, table II.

[y] A. Thavarajah, "Fertility, mortality and population growth in Syria", in Cairo Demographic Centre, *op. cit.,* p. 214.

[z] Haluk Cillov and others, *The Population of Turkey,* CICRED Monograph Series, World Population Year 1974 (Ankara, Hacettepe University, Institute of Population Studies, 1974), chap. 2, p. 20.

[aa] In the source, no specific date was given for the estimated fertility rates. See W. B. Fisher, "Southern Arabia: a human reservoir", in J. I. Clarke and W. B. Fisher, eds., Population of the Middle East and North Africa, a Geographical Approach (New York, Holmes and Meier, 1972), p. 281.

TABLE 102. CRUDE BIRTH RATES, MORE DEVELOPED COUNTRIES AND SELECTED LESS DEVELOPED COUNTRIES WITH RELATIVELY GOOD STATISTICS, 1950–1974

(Live births per 1,000 population)

	1950–1954	1955–1959	1960–1964	1965–1969	1970–1974	1970	1971	1972	1973	1974
Africa										
Eastern Africa										
Mauritius (excluding dependencies)	46.2	41.1	39.2	32.1	25.4	26.8	25.3	24.8	22.7	27.1
Réunion	49.3	46.5	44.0	38.9	29.8[a]	30.2	31.7	29.5	28.1	...
Northern Africa										
Egypt	43.8	40.6	42.6	39.2	34.8[a]	34.9	34.8	34.1	35.3	...
Tunisia	...	42.5	46.2	40.9	36.1[a]	36.4	35.1	37.3	35.6	...
Latin America										
Caribbean										
Cuba[b]	29.2	29.1	33.9	31.1	29.0	28.6	29.8	28.3	25.3	...
Guadeloupe[d]	38.7	38.1	36.6	33.1	29.2[a]	28.8	30.3	29.4	28.0	...
Jamaica[e]	34.1	38.0	40.0	37.4	33.1	34.4	34.9	34.3	31.3	30.8
Martinque[d]	38.9	39.3	36.5	30.9	25.6[a]	27.5	27.1	25.1	22.4	...
Puerto Rico	36.5	33.8	31.3	27.4	24.4[a]	24.8	25.6	24.1	23.3	...
Trinidad and Tobago	37.7	38.3	37.0	28.7	25.4	24.5	25.3	26.8	26.5	24.0
Middle America										
Costa Rica	45.7	47.4	45.9	38.4	31.1[a]	33.4	31.3	31.2	28.5	...
El Salvador	49.0	49.3	48.6	44.3	40.9[a]	40.0	42.3	40.8	40.3	...
Guatemala	51.2	48.7	47.6	44.4	43.1[a]	41.6	43.8	44.8	42.4	...
Mexico[e]	44.1	45.0	45.6	44.7	43.6[a]	42.1	42.5	43.2	45.8	...
Panama[f]	34.0	38.2	39.4	38.5	34.8	37.1	37.2	36.0	33.2	31.2
Temperate South America										
Argentina	25.2	24.0	22.8	22.1	...	22.9	...	...	...	...
Chile	34.3	35.9	35.4	30.3	...	28.0	28.5	...	...	...
Uruguay	20.7	23.2	24.3	21.7	21.9[g]	22.4	22.6	20.9	...	...
Tropical South America										
Guyana[h]	42.8	43.6	42.0	38.9	...	...	...	...	...	...
Surinam	42.0	44.4	39.6	...	...	...	...	...	...	...
Venezuela	43.7	44.1	44.2	41.7	37.3[a]	38.2	38.3	36.9	36.0	...
Northern America										
Canada	27.7	27.8	25.2	18.8	16.2	17.4	16.8	15.9	15.5	15.4
United States of America	24.8	24.8	22.4	18.2	16.2	18.3	17.2	15.6	14.9	14.9
East Asia										
Japan	23.9	18.4	17.4	17.9	19.1	18.8	19.3	19.4	19.4	18.6
Other East Asia										
Hong Kong	31.7	36.4	34.5	24.9	19.7	20.0	19.7	19.7	19.8	19.3

TABLE 102. CRUDE BIRTH RATES, MORE DEVELOPED COUNTRIES AND SELECTED LESS DEVELOPED COUNTRIES WITH RELATIVELY GOOD STATISTICS, 1950–1974 *(continued)*

(Live births per 1,000 population)

	1950–1954	1955–1959	1960–1964	1965–1969	1970–1974	1970	1971	1972	1973	1974
South Asia										
Cyprus	27.4	25.7	24.9	23.1	18.6	19.2	18.8	18.6	18.3	18.1
Israel[i]	32.8	27.8	25.4	25.4	27.4	27.2	28.0	27.0	27.0	27.7
Malaysia[j]	44.1	44.6	41.3	37.1	33.8[k]	33.9	34.3	34.3	...	...
Singapore	45.4	42.2	34.2	25.7	21.9	22.1	22.3	23.1	22.1	19.9
Sri Lanka	38.5	36.6	35.0	31.9	29.6[k]	29.4	29.9	29.5	...	...
Europe										
Eastern Europe										
Bulgaria	21.7	18.7	16.9	15.8	16.2	16.3	15.9	15.3	16.2	17.2
Czechoslovakia	22.0	18.5	16.3	15.5	17.7	15.9	16.5	17.4	18.9	19.8
German Democratic Republic	16.6	16.0	17.3	15.1	12.1	13.9	13.8	11.8	10.6	10.6
Hungary	21.1	17.8	13.6	14.3	15.4	14.7	14.5	14.7	15.0	17.8
Poland	30.2	27.2	20.1	16.7	17.5	16.8	17.1	17.4	17.9	18.4
Romania	24.9	22.9	16.7	21.3	19.6	21.1	19.5	18.8	18.2	20.3
Northern Europe										
Denmark	17.9	16.8	17.0	16.6	14.6	14.4	15.2	15.1	14.3	14.1
Finland	22.8	19.9	18.2	16.3	13.1	14.0	13.2	12.7	12.2	13.3
Ireland	21.4	21.0	21.8	21.4	22.4	21.7	22.7	22.7	22.4	22.3
Norway	18.7	18.2	17.3	17.7	16.1	16.6	16.8	16.3	15.5	15.0
Sweden	15.5	14.5	14.5	15.0	13.7	13.7	14.1	13.8	13.5	13.5
United Kingdom	15.9	16.4	18.2	17.6	14.9	16.3	16.2	14.9	13.9	13.2
Southern Europe										
Albania	38.9	41.8	40.1	35.1	32.9[k]	32.5	33.3	...	...	...
Greece	19.5	19.3	18.1	18.1	16.0	16.5	16.0	15.8	15.4	16.1
Italy[l]	18.3	18.0	18.8	18.2	16.4	16.9	16.9	16.4	16.0	15.8
Malta	29.8	26.7	22.6	16.6	17.0	16.5	17.3	16.8	17.5	16.8
Portugal[m]	24.1	24.1	24.0	22.2	19.9	19.4	21.4	19.9	19.7	19.2
Spain	20.3	21.3	21.5	20.5	19.6	19.5	19.6	19.4	19.3	19.7
Yugoslavia	30.2	24.8	22.1	19.8	18.1	17.8	18.3	18.3	18.1	17.9
Western Europe										
Austria	15.0	16.8	18.5	17.3	13.9	15.1	14.5	13.9	13.0	12.9
Belgium	16.7	17.1	17.1	15.5	13.9	14.8	14.6	14.0	13.4	12.7
France	19.5	18.4	18.0	17.1	16.5	16.8	17.2	17.0	16.5	15.2
Germany, Federal Republic of	15.8	16.5	18.0	16.7	11.6	13.4	12.7	11.4	10.3	10.1
Luxembourg	14.8	15.9	16.0	13.6	12.0	13.0	13.0	11.8	11.0	11.1
Netherlands	22.1	21.3	20.9	19.2	16.0	18.3	17.2	16.1	14.5	13.8
Switzerland	17.3	17.5	18.5	17.7	14.4	15.8	15.2	14.3	13.6	13.1
Oceania										
Australia–New Zealand										
Australia	23.0	22.6	21.8	19.8	20.0	20.6	21.7	20.5	18.9	18.4
New Zealand	25.7	26.3	25.9	22.6	21.8[a]	22.1	21.7	21.8	20.5	...
Micronesia–Polynesia										
Fiji	39.9	40.6	39.2	33.1	29.2	29.9	30.3	28.0	28.2	29.6
USSR	26.3	25.4	22.6	17.9	17.8	17.4	17.8	17.8	17.6	18.0

[a] 1970–1973 average.

[b] Data for the five-year average have been taken from CELADE, *Boletín demográfico, América Latina: índice de crecimiento de la población en el período 1950–2000, por países*, año VII, No. 13 (Santiago, Chile, January 1974), table 3.

[c] Data for 1970–1973 taken from Cuba, Ministerio de la Salud Pública, *Cuba: organización de los servicios y nivel de salud* (Havana, 1974).

[d] Excluding live-born infants dying before registration of birth.

[e] Births tabulated by year of registration rather than by occurrence.

[f] Excluding Canal Zone. Before 1952, excluding tribal Indian population numbering 48,654 in 1950 and 62,187 in 1960. Beginning in 1952, including tribal Indian population in the provinces of Bocas del Toro and Darién. Beginning in 1966, including tribal Indian population.

[g] 1970–1972.

[h] Excluding Amerindian population.

[i] Beginning in 1970, including Eastern Jerusalem.

[j] Data for Peninsular Malaysia only.

[k] 1970–1971 average.

[l] Total population estimates for 1962 to 1974 have been unofficially revised on the basis of the officially revised *de jure* population estimates given in the *Demographic Yearbook* questionnaire, 1974.

[m] 1960–1970 crude birth rates are based on the unofficially revised total *de jure* population.

TABLE 103. GROSS REPRODUCTION RATES, MORE DEVELOPED COUNTRIES AND SELECTED LESS DEVELOPED COUNTRIES WITH RELATIVELY GOOD STATISTICS, 1950–1974

	1950	1955	1960	1965	1970	1974
Africa						
Eastern Africa						
Mauritius[a]	...	...	2.9	2.7	1.9	...
Réunion[b]	...	...	...	3.4	2.3	...
Northern Africa						
Algeria[c]	...	...	...	3.3	3.5[d]	...
Tunisia[e]	...	...	3.3	3.3	3.1	...
Latin America						
Caribbean						
Cuba	...	2.1[f]	...	2.2	1.9[g]	...
Guadeloupe	2.5	2.9	2.8	2.7	2.7[h]	...
Jamaica	1.9	2.3	2.8	2.8	2.7[i]	...
Martinique	2.4	2.9	2.8	2.9	2.3[j]	...
Puerto Rico	2.5	2.4	2.3	2.0	1.5	...
Trinidad and Tobago	2.3[k]	2.8	2.7	2.2	1.7	...
Middle America						
Costa Rica	3.2[l]	...	3.5[m]	3.2[m]	2.1[m]	...
El Salvador[m]	3.2	3.3	3.5	3.4	2.9	2.9[n]
Guatemala[m]	3.4	3.2	3.4	3.2	2.9	...
Mexico[m,o]	...	3.2	3.3	3.4	3.2	...
Panama[m]	2.0	2.5	2.8	2.7	2.6	2.2[p]
Temperate South America						
Argentina	1.6[q]	...	1.5	1.4	1.5	...
Chile	2.2[m]	2.3[m]	2.4	2.3	1.8[r]	...
Uruguay	...	...	...	1.4[s]	...	...
Tropical South America						
Surinam	...	...	...	3.1[t]	2.7[t]	...
Venezuela[u]	2.8	...	3.3	...	2.6	...
Northern America						
Canada[v]	1.7	1.9	1.9	1.6	1.1	0.9[w]
United States of America	1.5	1.8	1.8	1.4	1.2	1.0[x]
East Asia						
Japan	1.8[y]	1.2	1.0	1.1	1.0	1.0
Other East Asia						
Hong Kong	...	...	2.5[z,aa]	2.4[z]	1.7	1.6
Republic of Korea[bb]	...	2.6[cc]	3.0	2.2	1.9	...
South Asia						
Cyprus	1.9	1.7	1.7	1.7	1.4	1.1
Israel	...	1.9	1.9	1.9	1.9[dd]	1.8[dd]
Malaysia[ee]	...	...	2.9	2.8	2.5	...
Singapore	3.1	3.2	2.8	2.3	1.5	1.1
Sri Lanka	...	2.6	2.6	2.4	2.2[d]	...
Europe						
Eastern Europe						
Bulgaria	...	1.2	1.1	1.0	1.1	1.1
Czechoslovakia	1.5	1.4	1.2	1.2	1.0	1.2[w]
German Democratic Republic	...	1.2	1.2	1.2	1.1	0.9[x]
Hungary	1.3	1.4	1.0	0.9	1.0	1.1
Poland	1.8	1.8	1.5	1.2	1.1	1.1
Romania	...	...	1.1	0.9	1.4	1.2[w]
Northern Europe						
Denmark	1.3	1.2	1.2	1.3	1.0	0.9[w]
Finland	1.5	1.4	1.3	1.2	0.9	...
Ireland	...	1.7	1.9	2.0	1.9	1.9[n]
Norway	1.2	1.3	1.4	1.4	1.2	1.0
Sweden	1.1	1.1	1.1	1.2	0.9	0.9
United Kingdom						
England and Wales	1.1	1.1	1.3	1.4	1.2	1.0[w]
Scotland	1.2	1.2	1.4	1.4	1.2	1.0[w]
Southern Europe						
Albania	...	3.3	3.2	2.6	2.4	...
Greece	...	1.1	1.1	1.1	1.2	1.1
Italy	1.2	1.1	1.2	1.3	1.1	...
Malta	...	1.8	1.7	1.2	1.0	1.0[w]
Portugal	1.5	1.5	1.5	1.5	1.4	1.4[n]
Spain	1.2	1.3	1.4	1.4	1.4	1.4
Yugoslavia	1.9	1.5	1.4	1.3	1.1	1.1[w]

TABLE 103. GROSS REPRODUCTION RATES, MORE DEVELOPED COUNTRIES AND SELECTED LESS DEVELOPED COUNTRIES WITH RELATIVELY GOOD STATISTICS, 1950–1974 *(continued)*

	1950	*1955*	*1960*	*1965*	*1970*	*1974*
Western Europe						
Austria	1.0[ff]	1.1	1.3	1.3	1.1	0.9
Belgium	1.2	1.2	1.2	1.3	1.1	1.0[x]
France	1.4	1.3	1.3	1.4	1.2	1.2[x]
Germany, Federal Republic of	1.0[ff]	1.0	1.2	1.2	1.0	0.7[w]
Luxembourg	0.9	1.0	1.1	1.2	1.0	0.8[w]
Netherlands	1.5	1.5	1.5	1.5	1.3	1.1[x]
Switzerland	1.2	1.1	1.2	1.2	1.0	0.8
Oceania						
Australia–New Zealand						
Australia	1.5	1.6	1.7	1.4	1.4	1.4[n]
New Zealand	1.7	1.9	2.1	1.7	1.5	1.5[x]
Micronesia–Polynesia						
Fiji	2.8	2.6	2.9	2.4	1.9	1.7
USSR[gg]	...	...	1.4	1.2	1.2	1.2

[a] Rates obtained from Mauritius, Ministry of Economic Development, Central Statistical Office.

[b] Rates taken from France, Institut national de la statistique et des études économiques, *Annuaire statistique de la Réunion, 1969–1972* (Paris, 1973), pp. 34 and 36, tables 2 and 3.

[c] Gourari Négadi, "La fécondité en Algérie, niveaux-tendances-facteurs" doctoral dissertation, Ecole pratique des hautes études, VIème section: Sciences économiques et sociales, Paris, 1975, p. 64, table II-4.

[d] 1969.

[e] Rates for 1960 and 1965 taken from Alain Marcoux, "La croissance de la population de la Tunisie, passé récent et perspectives", *Population* (Paris), vol. 26, special issue (March 1971), p. 113, table V. Rates for 1970 calculated in accordance with Marcoux's population estimates, and on the assumption that official birth registration was 95 per cent complete.

[f] 1953. Data given by Rodolofo Mezquita, as cited in M. H. Henriques, "Niveles de la fecundidad en América Latina", CELADE report S.444/38, prepared for a SENEV seminar in 1970 (Santiago, Chile, 1969).

[g] 1969–1971. The total number of live births for this period was obtained by averaging the number of births for 1969–1971. The result was then split according to the 1968 reported live births by age of mother.

[h] 1967.

[i] 1969–1971. Data from World Bank and International Development Association, *Current Economic Position and Prospects,* Report No. 257a-JM (Washington, D.C., 1974), vol. II, annex I, "Population, labor force and employment in Jamaica", p. 3.

[j] France, Institut national de la statistique et des études économiques, *Annuaire statistique de la Martinique 1969–1972* (Paris, 1973), p. 30.

[k] *Population Bulletin No. 7,* p. 75.

[l] Miguel Gómez Barrantes, *República de Costa Rica: Evaluación de las estadísticas de nacimientos y de las cifras censales por medio de las estadísticas de asistencia escolar y de defunciones,* CELADE Series C, No. 29 (Santiago, Chile, 1964), p. 20.

[m] Estimates of the female population aged 15–49 years taken from CELADE, *Boletín Demográfico,* vol. VII, No. 13 (January 1974), table 2, and adjusted to agree with total official mid-year population.

[n] 1971.

[o] Adjusted to take into account reporting of births for ages 40–49. Gross reproduction rates calculated assuming a sex ratio of 105.

[p] Official correspondence from Panama.

[q] 1950 live births by age of mother derived from the adjustment of official age-specific fertility rates taken from Horacio D. Gregoratti and Carlos Luzzetti, *Argentinian Population Policy in Developed Countries,* Bernard Berelson, ed. (New York, 1974), p. 434, to agree with registered births.

[r] S. Zubicueta, "Chile: IV Censo de población en 1970. Evaluación y ajuste y proyecciones de población 1970–2000, en base a la muestra de adelanto de cifras", Santiago, Chile, CELADE, 1972 (unpublished).

[s] Augustin Garcia L., *Uruguay: Proyección de la población por sexo y grupos de edades, 1963–2003,* CELADE Series A, No. 101 (Santiago, 1970).

[t] H. E. Lamur, *The Demographic Evolution of Surinam,* trans. by Dirk H. van der Elst (The Hague, Martinus Nijhoff, 1973), p. 56. Rates based on births to mothers aged 15–44 years.

[u] 1950–1951, 1961 and 1971 respectively. Taken from Universidad del Zulia, Facultad de Ciencias Económicas y Sociales, Centro de Investigaciones Económicas, *Venezuela: aspectos demográficos de la población, Año Mundial de la Población,* CICRED Monograph Series, World Population Year 1974 (Maracaibo-Venezuela, 1974).

[v] Births of Newfoundland prorated to the distribution by age for Canada excluding Newfoundland.

[w] 1973.

[x] 1972.

[y] Excluding Ryukyu Islands.

[z] Ronald Freedman, and others, "Hong Kong's fertility decline, 1961–1968", *Population Index,* vol. 36, No. 1, January–March 1970), pp. 3–18.

[aa] 1961.

[bb] Lee-Jay Cho, *The Demographic Situation in the Republic of Korea,* Papers of the East-West Population Institute, No. 29 (Honolulu, Hawaii, East-West Center, 1973).

[cc] 1957.

[dd] Beginning in 1970, including Eastern Jerusalem.

[ee] Data for Peninsular Malaysia only, calculated on the basis of the total population, revised unofficially in line with the 1970 census results.

[ff] 1951.

[gg] For 1960–1961, 1965–1966, 1969–1970 and 1973–1974 gross reproduction rates have been calculated on the basis of data taken from Union of Soviet Socialist Republics, Central Statistical Office, *National Economy of the USSR 1970* (Moscow, 1971), p. 49; *ibid. 1972* (Moscow, 1973), p. 48; and *ibid., 1974* (Moscow, 1975), p. 46.

TABLE 104. RECENT ESTIMATES OF AGE-SPECIFIC FERTILITY RATES, BY RURAL OR URBAN RESIDENCE, SELECTED COUNTRIES OF NORTHERN AFRICA

(Live births per 1,000 women)

Age of woman	*Algeria, 1969*		*Morocco, 1973*[a]		*Egypt, 1966*	
	Urban	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*
15–19	84	126	55.3	84.9	37.6	33.5
20–24	318	328	304.4	343.5	199.4	209.4
25–29	350	359	365.9	390.7	316.1	359.0
30–34	330	329	292.7	342.1	248.7	305.3
35–39	242	273	211.2	248.7	211.5	258.8
40–44	125	158	88.3	132.1	82.5	125.9
45–49	20	45	15.2	38.4	38.9[b]	61.4[b]

Sources: Gourari Négadi and others, "La situation démographique de l'Algérie," *La population de l'Algérie,* CICRED Monograph Series, World Population Year 1974 (Paris, Imprimerie Louis-Jean, 1974); Morocco, Duechande la statistique, Centre de recherches et d'études démographiques, *La fécondité marocaine,* Report No. 6 (Rabat, 1974); Ferial Abd El-Kader Ahmad, "Fertility studies in the Arab Republic of Egypt" (POP/INF/110), country statement prepared for the ECA Working Group on Fertility Levels and Differentials in Africa and the Prospects for the Future, Addis Ababa 18–22 December 1972.

[a] Data from a regional sample; estimates adjusted by the Brass technique.

[b] Women aged 45 years or over.

TABLE 105. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER "EVER MARRIED" WOMAN BY MARITAL DURATION, RURAL OR URBAN RESIDENCE AND EDUCATION OR LITERACY STATUS OF THE WOMAN, EGYPT, 1965–1966

Duration of marriage (years)	*Rural women, Lower Egypt, 1965*		*All urban women, 1966*			
	Illiterate	*Literate*	*Illiterate*	*Able to read and write*	*Intermediate certificate*	*University degree*
Under 5	0.87	0.93	1.1	0.8	0.6	0.5
5–9	2.38	2.80	2.7	2.6	2.5	1.8
10–14	3.57	4.37				
15–19	4.68	5.42	5.0	4.9	3.2	2.6
20–24	5.21	6.40				
25–29	5.44	5.91	6.6	6.1	4.6	2.3
30+			6.8	6.3	5.3	...

Sources: For rural women in Lower Egypt, S. Hassan and others, "Factors affecting fertility in rural areas of Lower Egypt", in Cairo Demographic Centre, *Fertility Trends and Differentials in Arab Countries,* Research Monograph Series No. 2 (Cairo, 1971); for urban women, Ferial Abd El-Kader Ahmad, "Fertility studies in the Arab Republic of Egypt" (POP/INF/110), country statement prepared for the ECA Working Group on Fertility Levels and Differentials in Africa and the Prospects for the Future, Addis Ababa, 18–22 December 1972.

TABLE 106. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER CURRENTLY MARRIED WOMAN, BY AGE AND EDUCATION OF THE HUSBAND,[a] SELECTED COUNTRIES OF NORTHERN AFRICA, RECENT YEARS

Age of woman	Algeria (1969)[b]					
	Husband's education			Wife's education		
	None	Primary or middle	Secondary or higher	None	Primary or middle	Secondary or higher
15–19	0.6	0.5	0.5	0.6	0.5	0.5
20–24	2.1	2.1	2.0	2.2	2.0	1.5
25–29	4.0	4.3	3.4	4.1	4.1	2.7
30–34	5.7	5.6	4.6	5.7	4.7	3.5
35–39	7.1	7.0	6.2	7.1	6.1	...
40–44	8.0	8.2	7.1	8.1	6.3	...
45–49	8.5	8.5	...	8.6	...	...

	Morocco (1962)[b]						
	Rural			Urban			
	None or traditional	Primary	Secondary or higher	None	Traditional	Primary	Secondary or higher
15–19	0.77	0.60	0.77	1.65	0.82	0.94	0.53
20–24	2.26	2.31	1.56	3.02	2.31	2.31	2.13
25–29	3.81	3.69	3.35	4.34	3.75	4.23	3.74
30–39	5.78	5.81	5.17	5.44	5.53	5.55	6.18
40+	7.15	6.59		6.88	6.94	...	...

	Tunisia (1964)—Urban[c]			
	None	Traditional	Primary	Secondary or higher
Under 30	3.0	2.9	2.4	2.2
30–39	5.9	5.9	6.1	5.6

Sources: Jacques Vallin, "Influence de divers facteurs économiques et sociaux sur la fécondité de l'Algérie", *Population* (Paris), vol. 28, No. 4-5, (July-October 1973); G. Sabagh, "Analyse de l'influence du niveau d'instruction sur la fécondité au Maroc", *Revue tunisienne de sciences sociales*, vol. 6, No. 17-18 (June-September 1969); Jean Morsa, "The Tunisia survey: a preliminary analysis", in Bernard Berelson and others, eds., *Family Planning and Population Programs* (Chicago, University of Chicago Press, 1966).

[a] For Algeria, including data on number of children ever born by level of wife's education.

[b] Women married only once.

[c] Excluding Tunis.

TABLE 107. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER "EVER MARRIED" WOMAN, BY AGE AND RURAL OR URBAN RESIDENCE, JAPAN AND REPUBLIC OF KOREA, 1970

Age of woman	Japan[a]		Republic of Korea[b]	
	Rural	Urban	Rural	Urban
15–19	0.72	0.57	0.53	0.45
20–24	0.80	0.63	1.13	0.91
25–29	1.48	1.24	2.44	1.84
30–34	2.08	1.79	3.91	3.07
35–39	2.34	1.95	4.98	3.94
40–44	2.67	2.11	5.71	4.63
45–49	3.07	2.46	5.98	5.02

Sources: For Japan, 1970 *Census of Japan*, vol. 5; for the Republic of Korea, *Demographic Yearbook, 1973* (United Nations publication, Sales No. E/F.74.XIII:1).

[a] Based on a 25 per cent sample tabulation; excluding the negligible proportion of women not reporting parity.

[b] Based on a 10 per cent sample of census returns; including the negligible proportion of women not reporting parity.

TABLE 108. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER "EVER MARRIED" WOMAN, THAILAND AND PHILIPPINES, AND PER CURRENTLY MARRIED WOMAN, MALAYSIA,[a] BY AGE AND RURAL OR URBAN RESIDENCE, RECENT YEARS

Age of woman	Thailand,[b] 1969-1970			Philippines, 1968		Malaysia,[a] 1970		
	Rural	Provincial urban	Bangkok-Thonburi	Rural	Urban	Rural	Provincial urban	Metropolitan areas
15-19	0.69	0.64	0.65	...	...	1.6	1.5	1.4
20-24	1.41	1.41	1.42	...	...			
25-29	2.82	2.61	2.20	...	...	4.4	3.7	3.4
30-34	4.22	3.78	3.39	...	...			
35-39	5.80	4.66	4.29	6.2	5.6	6.2	6.0	5.3
40-44	6.89	5.82	5.32					
45-49	6.69	5.72	5.26	6.0[c]	6.2[c]	...	...	...

Sources: National Economic and Social Development Board, National Statistical Office and Institute of Population Studies of Chulalongkorn University, *The Population of Thailand*, CICRED Monograph Series, World Population Year 1974 (Bangkok, 1974); Elvira M. Pascual, "Differential fertility in the Philippines", *Philippine Sociological Review*, vol. 19, Nos. 3 and 4 (July-October 1971); J. Y. Peng and Elizabeth Preble, *Malaysia*, Country Profile (New York, The Population Council, 1975).

[a] Data for Peninsular Malaysia (formerly West Malaysia) only.

[b] Excluding women with an unknown number of children "ever born".

[c] Women aged 45-54 years.

TABLE 109. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER CURRENTLY MARRIED WOMAN, BY AGE AND RURAL OR URBAN RESIDENCE, SELECTED COUNTRIES OF MIDDLE SOUTH ASIA, RECENT YEARS

Age of woman	Bangladesh, 1961		Pakistan, 1968-1969		Sri Lanka, 1969-1970		India 1964-1965[a]		
	Rural	Urban	Rural	Urban	Rural[b]	Urban	Duration of marriage (Years)	Rural	Urban
15-19	0.76	0.89	0.6	0.6	0.65	0.66	...	...	...
20-24	2.23	2.33	1.9	2.0	1.45	1.50	5-9	2.02	2.11
25-29	3.49	3.99	3.2	3.4	2.90	2.83	10-14	3.55	3.53
30-34	4.64	4.53	4.4	4.5	3.97	3.75	15-19	4.89	4.68
35-39	5.24	5.22	4.9	5.2	5.34	4.92	20-29	5.65	5.43
40-44	5.51	5.17	5.4	5.6	6.12	5.36	30+	5.83	5.76
45-49	5.77[c]	5.14[c]	5.4	5.5	5.87	5.27			

Sources: For Bangladesh: Mohammed Afzal, "The fertility of East Pakistan married women", in Warren C. Robinson, *Studies in the Demography of Pakistan* (Karachi, 1967); for Pakistan: Mehtab C. Karim, "Fertility differentials by family type", *Pakistan Development Review*, vol. XIII, No. 2 (Summer 1974); for Sri Lanka: *Socio-Economic Surveys of Sri Lanka, 1969-1970, Rounds 1-4, Statistical Tables*, vol. 1, *Population, Labour Force, Housing* (1973); for India: The Cabinet Secretariat, *Age pattern of Marriage and Fertility of Couples*, The National Sample Survey, Nineteenth Round: July 1964-June 1965, No. 185 (New Delhi, 1971).

[a] Excluding the very small proportion of women married at age 25 or older and the negligible proportion of women not reporting parity.

[b] Including estate sectors.

[c] Women aged 45 years or over.

TABLE 110. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER "EVER MARRIED" WOMAN BY AGE AND EDUCATION, JAPAN, REPUBLIC OF KOREA AND HONG KONG, RECENT YEARS

Age of woman	Japan,[a] 1970					Republic of Korea,[b] 1970				Hong Kong, 1971				
	None	Primary	Secondary	Junior college	University	None	Primary	Secondary	University	None	Primary	Lower secondary	Higher secondary	Post-secondary
15-19	0.93	0.62	0.39	...	...	0.68	0.51	0.39	...	...	...	...	...	...
20-24	1.66	0.87	0.57	0.44	0.28	1.51	1.10	0.82	0.66	...	...	...	...	...
25-29	2.27	1.50	1.25	1.10	0.91	2.80	2.32	1.70	1.35	2.75	2.17	1.87	1.40	1.15
30-34	2.66	2.01	1.83	1.76	1.67	4.14	3.65	2.91	2.38	...	...	...	...	...
35-39	2.20	2.25	1.99	1.88	1.85	5.09	4.56	3.72	2.99	4.35	3.77	3.36	2.67	2.38
40-44	2.47	2.57	2.14	1.92	1.79	5.72	5.12	4.33	3.61	...	...	...	...	...
45-49	2.88	2.95	2.42	2.16	1.97	5.89	5.37	4.74	4.11	...	...	...	...	...

Sources: For Japan and the Republic of Korea: official census publications; for Hong Kong: *The Demographic Situation in Hong Kong: Population of Hong Kong*, ESCAP Country Monograph Series No. 1 (Bangkok, 1974).

[a] Based on a 25 per cent sample tabulation; excluding the negligible proportion of women not reporting parity.

[b] Based on a 10 per cent sample of census returns; including the negligible proportion of women not reporting parity.

TABLE 111. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE, BY AGE AND EDUCATION OF WOMAN, SELECTED COUNTRIES OF EASTERN SOUTH ASIA, RECENT YEARS

Age of woman	Malaysia,[a,b,c] 1966–1967			Singapore, 1973[b]		
	None	Primary (1–5 years)	Secondary or higher (6+ years)	None	Primary	Secondary or higher
15–24	2.1	1.9	1.5	1.94	1.40	1.60
25–34	4.6	4.2	3.2	3.49	2.78	1.96
35–44	5.8	6.2	4.8	5.57	4.76	2.82

	Thailand,[c] 1969–1970					Philippines, 1968[c,d]				
	None	Less than primary	Primary	Lower secondary	Upper secondary or higher	None	Lower primary	Upper primary	Secondary	University
			Rural					Rural		
15–29	2.62	2.77	1.89	1.54		...	...	...	...	...
30–44	5.97	5.65	5.61	3.69		...	...	...	...	...
45+	6.65	6.80	6.58	...		5.36	6.42	6.54	5.27	4.00
			Urban					Urban		
15–29	2.46	1.89	1.97	1.62	1.35	...	...	...	...	...
30–44	5.43	4.96	4.41	4.04	2.66	...	...	...	...	...
45+	5.65	5.75	5.27	4.78	3.90	6.58	6.77	6.13	5.95	4.96

Sources: Malaysia, National Family Planning Board, *Report on the West Malaysian Family Survey, 1966–1967* (Kuala Lumpur); Wan Fook Kee and Saw Swee-Hock, *Report of the First National Survey on Family Planning in Singapore 1973* (Singapore, Family Planning and Population Board and National Statistical Commission, 1974); John Knodel and Visid Prachuabmoh, *The Fertility of Thai Women: Results of the First Rural and Urban Rounds of the Longitudinal Study of Social, Economic and Demographic Change in Thailand,* Institute of Population Studies, Chulalongkorn University, Research Report No. 10 (Bangkok, Chulalongkorn University, 1973); Elvira M. Pascual, "Differential fertility in the Philippines", *Philippine Sociological Review,* vol. 19, Nos. 3–4 (July–October 1971).

[a] Data for Peninsular Malaysia (formerly West Malaysia) only.

[b] Currently married women.

[c] "Ever married" women.

[d] Women aged 45–54 years.

TABLE 112. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER WOMAN AT THE END OF CHILDBEARING,[a] BY LEVEL OF EDUCATION, INDIA AND SRI LANKA, RECENT YEARS

Level of education	India urban population, 1960–1961		Sri Lanka,[b] 1971
	Husband's education	Wife's education	Wife's education[c]
Illiterate	7.04	6.65	6.0
Less than primary	6.19	6.90	5.7
Primary	6.50	6.57	
Middle	6.63	5.04	5.1
Matriculate	6.56	4.58	3.6
Post-secondary	5.54	2.01[d]	3.1

Sources: Government of India, Ministry of Home Affairs, Office of the Registrar General and Census Commissioner, *The Population of India,* CICRED Monograph Series, World Population Year 1974 (New Delhi, 1974); Sri Lanka Department of Census and Statistics, *The Population of Sri Lanka,* CICRED Monograph Series, World Population Year 1974 (Colombo, 1974).

[a] For India, currently married women 47 years of age or over; for Sri Lanka: "ever married" women aged 40–44 years.

[b] Based on a 10 per cent sample of 1971 census; adjustments made for women who had not stated the live births for each level of educational attainment.

[c] Educational categories are the following: no schooling, grade 1–4, grade 5–9, passed General Certificate of Education (GCE), Ordinary Level; passed GCE, Advanced Level, and higher.

[d] Average based on a small number of women.

TABLE 113. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER WOMAN BY EDUCATION OF THE WOMAN, SELECTED COUNTRIES OF WESTERN SOUTH ASIA, RECENT YEARS

Level of education	Israel,[a] 1961	Jordan,[b] 1972	Turkey,[c] 1968
Illiterate	8.1	8.6	4.2
Less than primary	7.4	7.0	3.2
Primary			2.8
Lower secondary	4.4	4.4	2.1
Upper secondary			2.0
University		4.1	1.4

Sources: For Israel: official census publication; for Jordan: Hanna Rizk, "National fertility sample survey for Jordan, 1972: the study and some findings", *Population Bulletin of the United Nations Economic and Social Office, Beirut,* No. 5 (July 1973); for Turkey: *Fertility and Family Planning in Europe around 1970: a Comparative Study of Twelve National Surveys* (United Nations publication, Sales No. E.76.XIII.2).

[a] Non-Jewish women currently married for the first time, aged 45–49 years.

[b] "Ever married" women at the end of childbearing.

[c] Currently married women 14–44 years of age; standardized by duration of marriage.

TABLE 114. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER WOMAN BY AGE AND RURAL OR URBAN RESIDENCE, SELECTED CARIBBEAN COUNTRIES, RECENT YEARS

Age of woman	Puerto Rico,[a] 1970		Trinidad and Tobago,[b] 1970		Dominican Republic,[c] 1969–1971	
	Rural	Urban	Rural	Urban	Rural	Urban
15–19	0.88	0.84	0.11	0.14	1.18	1.10
20–24	1.92	1.50	1.49	1.05	2.74	2.30
25–29	3.01	2.30	3.12	2.44	4.59	3.52
30–34	4.08	3.02	4.77	3.90	6.28	4.60
35–39	4.92	3.44	6.10	4.96	7.69	5.64
40–44	5.46	3.56			8.18	6.03
45–49	6.07	3.71	...	...	8.48	5.64

Sources: For Puerto Rico: Demographic Yearbook, 1973 (United Nations publication, Sales No. E/F.74.XIII.1); for Trinidad and Tobago, Jack Harewood, *The Population of Trinidad and Tobago*, CICRED Monograph Series, World Population Year, 1974 (CICRED, 1975); for the Dominican Republic, *Encuesta demográfica nacional: informe sobre los resultados obtenidos en la submuestra: fecundidad y planificación familiar* (Santo Domingo, 1973).

[a] "Ever married" women.

[b] All women.

[c] Currently mated women, including women not reporting parity.

TABLE 115. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER WOMAN, BY AGE AND RURAL OR URBAN RESIDENCE, SELECTED COUNTRIES OF LATIN AMERICA, RECENT YEARS

Age of woman	Middle America						Temperate South America			
	El Salvador,[a] 1971		Guatemala,[a,b] 1973		Mexico, 1970		Argentina,[c] 1961		Chile,[a] 1970	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural[d]	Urban[d]	Rural	Urban
15–19	0.28	0.20	0.38	0.19	0.31	0.20	0.86	0.61	0.16	0.10
20–24	1.70	1.12	1.81	1.20	1.70	1.20	1.34	0.96	1.90	1.27
25–29	3.51	2.46	3.46	2.50	3.52	2.77	2.02	1.39		
30–34	5.06	3.63	4.90	3.79	5.04	4.26	2.54	1.77	4.86	3.33
35–39	6.22	4.65	6.00	4.80	6.31	5.36	2.97	1.92		
40–44	7.05	5.24	6.81	5.53	6.95	5.88	3.38	2.04	6.31	4.08
45–49	7.29	5.19	7.17	5.54	7.13	5.87	3.42	2.05		

Age of woman	Tropical South America											
	Brazil,[e] 1970		Colombia, 1969		Ecuador,[a] 1974		Paraguay,[a,f] 1972		Peru,[a] 1971		Venezuela,[c] 1961	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
15–19	0.16	0.10	0.2	0.2	0.20	0.13	0.17	0.09	0.20	0.13	0.99	0.87
20–24	1.26	0.80	1.5	1.1	1.45	0.98	1.33	0.70	1.36	1.03	2.43	1.78
25–29	2.88	2.05	2.2	2.5	3.12	2.27	3.08	1.79	2.89	2.35	4.01	2.78
30–34	4.56	3.29	5.1	3.6	4.61	3.56	4.73	2.97	4.26	3.55	5.36	3.69
35–39	5.81	4.13	6.6	4.8	5.88	4.78	6.11	4.05	5.29	4.55	6.79	4.41
40–44	6.39	4.53	7.3	5.7	6.69	5.54	7.08	4.68	6.12	5.10	7.10	4.69
45–49	6.69	4.75	6.8	5.6	6.88	5.70	7.18	4.79	6.43	5.26	7.11	4.77

Sources: Alfredo E. Lattes, "La fecundidad efectiva en la República Argentina, según algunas características de la madre," in CELADE, *Argentina* (Santiago, Chile, 1970), pp. 130–131; Asociación Colombiana para el Estudio de la Población, *La Población de Colombia*, CICRED Monograph Series, World Population Year 1974 (Bogotá, 1974); Maria Davidson, "Some demographic and social correlates of fertility in Venezuela", *Estadística*, vol. XXVII, No. 105 (December 1969). Data for other countries taken from *Demographic Yearbook, 1973* (United Nations publication, Sales No. E/F.74.XIII.1) and from official census publications of the countries concerned.

[a] Including women not reporting parity.

[b] Based on a 5 per cent sample of census results.

[c] "Ever married" women.

[d] Urban including Buenos Aires only; rural including the rest of the country.

[e] Excluding Indians.

[f] Based on a 10 per cent sample of census results.

TABLE 116. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER WOMAN, BY AGE AND LEVEL OF EDUCATION, SELECTED COUNTRIES OF LATIN AMERICA, RECENT CENSUS YEARS

Age of woman	Country and level of education			
	Argentina, 1960[a]			
	None	Primary	Secondary	University
15–19	1.17	0.80	0.46	...
20–24	1.90	1.30	0.61	0.67
25–29	3.02	1.81	1.30	1.05
30–34	3.23	2.24	1.87	1.65
35–39	3.92	2.49	2.12	1.98
40–44	4.39	2.75	1.95	1.32
45–49	4.50	2.77	1.79	1.37
	Paraguay, 1962			
15–19	0.33	0.16	0.04	...
20–24	1.42	0.97	0.40	0.18
25–29	2.81	2.48	1.29	0.50
30–34	3.88	3.59	1.91	1.89
35–39	4.88	4.41	2.99	1.42
40–44	5.26	4.84	2.53	2.00
45–49	5.28	4.82	1.63	...

	Panama, 1970				
	Less than 4 years primary	4–6 years primary	7–9 years secondary	10–12 years secondary	University
15–19	0.58	0.28	0.10	0.04	...
20–29	2.84	2.26	1.64	0.89	0.59
30–39	5.47	4.60	3.66	2.66	2.07
40–49	6.26	4.98	3.67	2.94	2.43

Sources: Alfredo Lattes, "La fecundidad efectiva en la República Argentina, según algunas características de la madre", in CELADE, *Argentina* (Santiago, Chile, 1970); Elsa Cerisola, "Fecundidad diferencial en la República del Paraguay, según condición de ruralidad y nivel de instrucción de la mujer", in D. M. Rivarola and G. Heisecke, eds., *Población, Urbanización y Recursos Humanos en el Paraguay* (Asunción, 1970); for Panama, official census publication.

[a] "Ever married" women.

TABLE 117. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER WOMAN NEAR THE END OF CHILDBEARING, BY LEVEL OF EDUCATION, SELECTED CARIBBEAN COUNTRIES, RECENT CENSUS YEARS

	Level of education					
	None	Incomplete primary	Primary	Incomplete secondary	Secondary	University
Barbados, 1960[a]	5.94	5.75–5.49[b]	5.02	———	3.43 ———	
Guadeloupe, 1970[c]	——4.96——		4.28	3.24	——3.42——	
Martinique, 1970[c]	5.00		4.04	2.47	2.54	
Jamaica, 1970[d]	4.55	4.76–4.42[b]	2.57	———	2.39 ———	
Puerto Rico, 1960[e]						
Wife	7.70	7.32	5.98	3.33	2.30	1.85
Husband	7.57	7.37–6.75[b]	4.81	3.62	2.85	2.33
Trinidad and Tobago, 1970[f]	——6.78——		—5.17—	———	2.75 ———	

Sources: For Barbados, G. W. Roberts, "Fertility in some Caribbean countries", in International Union for the Scientific Study of Population, *International Population Conference, London, 1969* (Liège, 1971), vol. I, p. 710; for Guadeloupe and Martinique, official census publications; Sonja A. Sinclair, "Fertility", in G. W. Roberts and others, *Recent Population Movements in Jamaica,* CICRED Monograph Series, World Population Year 1974 (Kingston, The Herald, Ltd., 1974), p. 155; Leon F. Bouvier and John J. Macisco, "Education of husband and wife and fertility in Puerto Rico, 1960", *Social and Economic Studies,* vol. 17, No. 1 (March 1968); Jack Harewood, *The Population of Trinidad and Tobago,* CICRED Monograph Series, World Population Year 1974 (1975).

[a] Data for women over 45 years of age in legal or common law marital unions of 20 years or more.

[b] Range of values for women with lower and higher levels of incomplete primary schooling.

[c] All women aged 45–49 years.

[d] All women aged 45–54 years.

[e] Data for legally married women aged 45–49 years with spouse present.

[f] Data for all women aged 35–44 years.

TABLE 118. AVERAGE NUMBER OF CHILDREN BORN ALIVE PER WOMAN, BY LEVEL OF EDUCATION OF THE WOMAN AND RURAL OR URBAN RESIDENCE, SELECTED COUNTRIES OF LATIN AMERICA, RECENT YEARS

	Level of education					
	None	*Incomplete primary*	*Primary*	*Incomplete secondary*	*Secondary*	*University*
Brazil, 1970[a]						
Urban	5.95	4.80	3.80	2.99	2.82	2.47
Rural	6.09	5.16	4.34	3.58	3.16	2.81
Colombia, 1969						
Urban	3.9	2.9	2.2	1.6	——1.2——	
Rural	4.9	3.8	2.7	——1.8——		
Peru, 1961[a]						
Urban	5.90	——4.67——		——3.33——		2.94
Rural	5.38	——4.69——		——3.44——		3.25
Venezuela, 1961[a]						
Urban	4.92[b]	3.94		2.69		2.42
Rural	5.69[b]	4.42		3.10		1.43

Sources: For Brazil, official census publication; Asociación Colombiana para el Estudio de la Población, *La Población de Colombia,* CICRED Monograph Series, World Population Year 1974 (Bogotá, 1974); Maria Davidson, "Some demographic and social correlates of fertility in Venezuela", *Estadística,* vol. XXVII, No. 105 (December 1969); Peru, Oficina Nacional de Estadística y Censos, *La Población de Peru,* CICRED Monograph Series, World Population Year 1974 (Lima, 1974).

[a] Women with at least one live birth.

[b] Including women who did not state type of schooling received.

TABLE 119. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER WOMAN AGED 45–49 YEARS, BY EDUCATION OF WIFE AND HUSBAND, SELECTED LATIN AMERICAN CITIES, 1963–1964[a]

	Education of wife				*Education of husband*		
	None	*Primary*	*Secondary*	*University*	*None*	*Completed primary*	*Completed secondary*
Buenos Aires, Argentina	3.3	2.3	1.9	...	3.7	1.7	1.3
Rio de Janeiro, Brazil	5.4	3.8	2.4	2.0	5.6	3.3	2.3
Santiago, Chile[b]	...	...	...	...	5.1	3.6	3.1
Bogotá, Colombia	7.9	5.1	4.2	3.8[c]	8.7[d]	5.0	4.4
San José, Costa Rica	6.0[c]	6.3	3.9	3.7	...	...	...
Mexico City, Mexico	6.3	5.4	3.3	3.9	6.2[d]	4.9	4.4
Caracas, Venezuela	5.6	5.0	3.2	1.0	6.7	3.4	3.5

Sources: For Chile, Léon Tabah and Raúl Samuel, "Preliminary findings of a survey on fertility and attitudes toward family formation in Santiago, Chile", in Clyde V. Kiser, ed., *Research in Family Planning* (Princeton, New Jersey, Princeton University Press, 1962). Other data taken from Angel Fucaraccio and Carmen Arretx, "Relaciones entre variables económicas y demográficas", in CELADE, Los Estudios Demográficos en la Planificación del Desarrollo (Santiago, Chile, 1975).

[a] Data for Santiago, Chile, are from a survey made in 1959 and cover "ever married" women aged 35–50 years; data for other cities include women aged 45–49 years.

[b] Education of head of family.

[c] Women aged 35–39 years.

[d] Women aged 40–44 years.

TABLE 120. CRUDE BIRTH RATES, RURAL AND URBAN POPULATIONS, SELECTED MORE DEVELOPED COUNTRIES, RECENT YEARS

(Births per 1,000 population per annum)

		Births per 1,000 population	
	Year	*Urban*	*Rural*
Northern and Western Europe			
Denmark	1969	13.7	15.3
Finland	1972	14.1	11.0
Netherlands	1970	16.8[a]	20.6
Norway	1972	16.4	16.3
United Kingdom[b]			
England and Wales	1971	16.1	16.0
Northern Ireland	1968	21.9	22.3
Scotland	1970	16.8	16.9

TABLE 120. CRUDE BIRTH RATES, RURAL AND URBAN POPULATIONS, SELECTED MORE DEVELOPED COUNTRIES, RECENT YEARS *(continued)*

(Births per 1,000 population per annum)

	Year	Births per 1,000 population	
		Urban	Rural
Southern and Eastern Europe			
Albania	1971	24.2	37.9
Bulgaria	1972	17.0	13.3
German Democratic Republic	1972	11.6	12.1
Greece	1971	16.7[c]	15.4
Hungary	1972	13.8	15.6
Poland	1972	15.5	19.5
Romania	1972	16.8	20.3
USSR	1972	16.9	19.0
Other more developed countries			
Canada	1966	16.9	26.2
Israel	1969	23.3	36.2
New Zealand[d]	1966	19.7	28.4

Sources: Demographic Yearbook, 1969, 1973 (United Nations publications, Sales Nos. E/F.70.XIII.1 and E/F.74.XIII.1), tables 13 and 8 respectively.

[a] Excluding a separate "semi-urban" category, for which the rate was 19.4 in 1970.

[b] Data tabulated by year of occurrence for England and Wales, and by year of registration for Northern Ireland and Scotland.

[c] Excluding a separate "semi-urban" category, for which the rate was 15.7 in 1971.

[d] Data tabulated by year of registration rather than by year of occurrence.

TABLE 121. AGE-SPECIFIC FERTILITY RATES BY RURAL OR URBAN RESIDENCE, SELECTED EASTERN EUROPEAN COUNTRIES AND USSR, RECENT YEARS

(Live births per 1,000 women)

Age of women	Bulgaria, 1965–1966		Poland, 1965		Romania, 1965		USSR 1971–1972	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
15–19[a]	99.0	47.3	34	29	54.5	46.4	36.1	30.2
20–24	205.2	152.9	231	148	158.6	110.1	231.5	150.5
25–29	113.5	94.0	186	112	116.8	75.2	179.2	116.7
30–34	48.9	38.8	115	59	64.1	37.4	118.6	66.0
35–39	19.0	12.9	64	26	31.7	14.8	76.8	31.8
40–44	5.2	2.9	22	8	11.8	4.3	26.3	6.8
45–49[b]	1.2	0.5	3	1	1.1	0.3	4.1	0.7

Sources: For USSR, *Economic Survey of Europe in 1974,* part two, *Post-War Demographic Trends and the Outlook until the Year 2000* (United Nations publication, Sales No. E.75.II.E.16); data for other countries taken from J. Berent, "Causes of fertility decline in Eastern Europe and the Soviet Union", *Population Studies,* vol.XXIV, No. 2 (July 1970).

[a] For USSR, women under 20 years of age.

[b] For Bulgaria, women aged 45 years or over.

TABLE 122. AVERAGE NUMBER OF CHILDREN EVER BORN ALIVE PER WOMAN MARRIED CURRENTLY AND ONCE ONLY, AND UNDER 45 YEARS OF AGE, BY DURATION OF MARRIAGE AND RURAL OR URBAN RESIDENCE, SELECTED MORE DEVELOPED COUNTRIES, RECENT YEARS

Duration of marriage (years)	*Belgium 1966*[a,b]		*Czechoslovakia 1970*		*Denmark 1970*[c]		*France, 1971*		*Hungary, 1965–1966*		*Poland, 1972*[b,d]		*United States of America, 1970–1971*		*Yugoslavia, 1970*	
	Rural	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*	*Rural*	*Urban*
0–4	1.12	1.02	1.04	0.96	1.00	0.86	1.02	0.92	0.89	0.75	1.41	1.11	1.19	0.79	1.09	0.89
5–9	2.16	1.77	1.96	1.73	2.13	1.89	2.36	1.99	1.77	1.39	2.24	1.64	2.32	2.04	2.15	1.66
10–14	2.47	2.20	2.57	2.16	2.67	2.37	2.34	2.39	2.19	1.78	2.96	2.04	2.95	2.90	2.64	1.93
15–19	2.85	2.54	2.69	2.28	2.87	2.57	2.97	2.82	2.40	2.01	3.40	2.38	3.83	3.26	3.16	2.34
20+	3.38[e]	3.44	3.52	2.60	3.24	2.70	3.26	2.83	2.86	2.45	3.98	2.81	3.58	3.43	3.55	2.57
All marriages	2.22	1.97	2.06	1.77	2.29	1.91	2.36	2.06	1.99	1.56	2.97	2.07	2.91	2.27	2.48	1.78
All marriages (standardized for marital duration)	2.25	2.03	2.20	1.84	2.23	1.95	2.25	2.05	1.89	1.56	2.61	1.87	2.58	2.29	2.34	1.76

Source: Fertility and Family Planning in Europe around 1970: A Comparative Study of Twelve National Surveys (United Nations publication, Sales No. E.76.XIII.2).

[a] Including women under 40 years of age only.

[b] Including women married less than 18 months.

[c] Including women from the central municipalities of Copenhagen.

[d] Including women up to age 50.

[e] Average based on fewer than 10 currently married women.

TABLE 123. AVERAGE NUMBER OF CHILDREN BORN ALIVE PER WOMAN MARRIED CURRENTLY AND ONCE ONLY, AND UNDER 45 YEARS OF AGE, BY EDUCATIONAL ATTAINMENT OF WIFE AND HUSBAND, SELECTED MORE DEVELOPED COUNTRIES, RECENT YEARS

(Averages standardized by duration of marriage)

Country and place of residence	Education of wife					Education of husband				
	Less than primary	Primary	Lower secondary	Upper secondary	Post-secondary	Less than primary	Primary	Lower secondary	Upper secondary	Post-secondary
Belgium[a] (1966)	3.12[b]	2.09	2.00	1.95	2.07[b]	2.73[b]	2.07	1.94	2.17	2.07
Czechoslovakia (1970)	——2.27——		——1.64——		1.64	——2.21——		——1.71——		1.64
Denmark[c] (1970)	2.12		1.80	1.83	1.89	2.11		1.85	1.87	1.79
Finland (1971)	2.68[b]	2.13	——1.60——		1.86	2.33	2.07	——1.92——		1.80
France (1971)	4.25[b]	2.28	1.92	1.92	1.89	3.91	2.28	1.97	1.92	2.08
Hungary (1965–1966)										
Total	3.24	2.19	1.72	1.46	1.34	3.07	2.17	1.75	1.43	1.50
Rural	3.42	2.28	1.81	1.49	0.90[b]	3.27	2.21	1.83	1.60	1.24
Urban	2.91[b]	2.01	1.55	1.43	1.30	2.38[b]	2.11	1.59	1.35	1.48
Poland[d] (1972)										
Total	2.89	2.85	2.33	1.82	1.60	2.82	2.84	2.40	1.94	1.60
Rural	3.08	2.98	2.61	2.26	2.02	2.94	2.93	2.64	2.33	2.10
Urban	2.03	2.39	2.06	1.71	1.53	2.72	2.38	2.06	1.82	1.55
United Kingdom										
England and Wales (1967)	————1.86————			1.73	1.69	————1.85————			1.70	1.72
United States of America										
(1970–1971)	——2.94——		2.67	2.24	2.05	——2.87——		2.50	2.27	2.12
Yugoslavia (1970)										
Total	2.78	2.03	1.82	1.43	1.34	3.09	2.28	2.01	1.69	1.55
Rural	2.78	2.08	2.02	1.30	1.14[b]	3.03	2.30	2.20	2.01	1.61
Urban	2.77	1.82	1.61	1.41	1.31	4.09[b]	2.08	1.74	1.57	1.54

Source: Fertility and Family Planning in Europe around 1970: A Comparative Study of Twelve National Surveys (United Nations publication, Sales No. E.76.XIII.2).

[a] Including women under 40 years of age.

[b] Averages based on 10–50 currently married women.

[c] Excluding women from the central municipalities of Copenhagen.

[d] Including women up to age 50.

TABLE 124. AVERAGE NUMBER OF "IDEAL," "DESIRED" AND "EXPECTED" CHILDREN, SELECTED COUNTRIES, RECENT YEARS

		Subject of survey	Average number of children		
			"Ideal"	"Desired"	"Expected"
Africa					
Morocco	1966	Survey of knowledge, attitude and practice (KAP) of family planning in nine cities	3.3[a]	...	...
	1967	KAP survey in rural areas	4.6[b]	...	...
Nigeria	1969–1973	Rural KAP survey in Ishan Division	...	7.3[c]	...
Sierra Leone	1969–1970	KAP fertility and family planning survey	6.1[d]	...	...
Tunisia	1964	KAP urban survey	4.3[e]	...	...
	1968	KAP inquiry in Tunis	3.4[f]	2.4[f]	...
Asia					
Bangladesh	1968	Rural development in Comilla-Kotwali-Thana	...	...[g]	...
Hong Kong	1967	Urban family life survey	...	...[h]	...
India	1970	Calcutta fertility survey	3.0[i]	...	...
Indonesia	1968	KAP survey of Jakarta and environs	4 or 5[j]	...	...
Iran	1971	Impact of education on fertility—KAP survey	4.3[k]	4.3[k]	...
Japan	1972	Sixth fertility survey	2.8[l,m]	2.5[m]	...
Lebanon	1959	A fertility survey for Lebanese couples	...[n]	...	...
Peninsular Malaysia	1966–1967	West Malaysian family survey—KAP	...	5.1[o]	...
	1970	Post-enumeration survey/KAP	...	...[p]	
Philippines[q]	1968	National demographic survey	5.4	5.1	5.7
	1972	Survey of family planning—KAP	4.3	3.9	5.3
Republic of Korea	1965	National survey on family planning—KAP	3.9[r]	...	...
	1966	National survey on family planning—KAP	3.9[s]	...	...
	1968	Fertility and family planning survey—KAP	3.9[t]	...	...
	1970–1971	Korean attitude and birth control behaviour	3.6[r,u]		
	1973	Multipurpose survey—fertility/KAP	3.1[v]		
Singapore	1973	First national survey on family planning	3.1[w]	...	...

TABLE 124. AVERAGE NUMBER OF "IDEAL," "DESIRED" AND "EXPECTED" CHILDREN, SELECTED COUNTRIES, RECENT YEARS *(continued)*

		Subject of survey	Average number of children		
			"Ideal"	"Desired"	"Expected"
Thailand	1964	Family health research project	3.8[x]	...	...
	1969–1973[y]	National longitudinal survey of social, economic and demographic changes in Thailand			
		Round one:			
		Rural	...	3.9	...
		Provincial urban	...	3.8	...
		Bangkok Thonburi	...	3.6	...
		Round two:			
		Rural	...	4.1	...
		Provincial urban	...	3.6	...
		Bangkok Thonburi	...	3.4	...
Turkey	1963	National survey on population–KAP	3.5[z]	...	...
	1968[aa]	Survey on family structure and population problems in Turkey–KAP	3.6	...	5.7
Latin America					
Argentina[bb]	1964	Comparative survey of urban fertility–KAP	2.9	...	...
Brazil[cc]	1964	Comparative survey of urban fertility–KAP	2.7	...	...
Colombia[cc]	1964	Comparative survey of urban fertility in the city of Bogotá–KAP	3.6	...	...
Costa Rica[bb]	1964	Comparative survey of fertility in the metropolitan area of San José–KAP	3.6	...	...
Ecuador	1965	Survey of fertility in the cities of Quito and Guayaquil–KAP			
		Quito	2.6[dd]	...	...
		Guayaquil	2.5[dd]	...	...
Martinique[ee]	1968	Survey of fertility and family	4.2	...	...
Mexico[bb]	1964	Comparative survey of urban fertility–KAP	4.2	...	...
Panama[bb]	1964	Comparative survey of urban fertility–KAP	3.5	...	...
Trinidad and Tobago[ff]	1970–1971	Family planning survey: females–KAP	3.6	...	...
Venezuela[bb]	1964	Comparative survey of fertility in the metropolitan area of Caracas–KAP	3.5	...	...
Europe[gg]					
Belgium	1966	National fertility survey	2.53	...	2.39
Czechoslovakia	1970	Research into the reproduction of marriages	2.59	...	2.37
Denmark	1970	National fertility survey	2.59	...	2.55
Finland	1971	Sexual behaviour and contraceptive practices in the Finnish adult population	2.56	...	2.55
France	1972	...	2.57	...	2.55
	1974[hh]	Attitudes and opinions of French people with regard to fertility and the family	2.59	...	...
Hungary	1966	National fertility and family planning survey	2.38	...	2.19
Poland	1972	Family questionnaire	2.89	...	2.80
United Kingdom					
England and Wales	1967	National fertility survey	2.51	...	2.21
Yugoslavia	1970	Fertility of married women and family planning in Yugoslavia	2.54	...	2.71
Northern America					
United States of America	1965[ii]	National fertility survey	3.29	3.29	...
	1970[jj]	National fertility survey	2.83	...	2.95
Oceania					
Australia	1971[kk]	Fertility and family planning survey, Melbourne–KAP	...	2.7–3.3[ll]	2.9–3.1[mm]
USSR[nn]	1969	Survey of attitudes on the ideal and intended number of children in the family	2.89	...	...

[a] "Morocco: family planning and an attitude survey in the urban areas", *Studies in Family Planning*, No. 58 (October 1970), p. 7, table 2.

[b] "Morocco: family planning knowledge, attitude and practice in the rural areas", *Studies in Family Planning*, No. 58 (October 1970), p. 2, table 2.

[c] Gyorgy Acsádi, A. A. Igun and G. Z. Johnson, *Surveys of Fertility, Family and Family Planning in Nigeria* (Ile-Ife, Nigeria, Institute of Population and Manpower Studies, University of Ife, 1972), table 3.3.

[d] Thomas E. Dow, Jr., "Fertility and family planning in Sierra Leone", *Studies in Family Planning*, vol. 2, No. 8 (August 1971), p. 156, table 3.

[e] Jean Morsa, "The Tunisia survey: a preliminary analysis," in Bernard Berelson and others, eds., *Family Planning and Population Programs* (Chicago, University of Chicago Press, 1966), p. 583, table 1, and p. 584.

[f] Mahmoud Seklani, "Concepts de dimension de la famille et planning familial à Tunis", *Revue tunisienne de sciences sociales*, vol. 7, No. 22 (July 1970), p. 55.

[g] For mean "desired" family size by age of woman, by religion and by wife's education, see "Family planning and desired family sizes", in John Stoeckel and Moqbul A. Choudhoury, *Fertility, Infant Mortality and Family Planning in Rural Bangladesh* (Dacca, Oxford Uni-

versity Press, 1973), table 43.

[h] For average number of children "desired", by age of women, see Robert Edward Mitchell, "Changes in fertility rates and family size in response to changes in age at marriage, the trend away from arranged marriages, and increasing urbanization," *Population Studies,* vol. XXV, No. 3 (November 1971), pp. 484–485.

[i] For women in the age group 20–39, see M. V. Raman, *Preference of Women about Sex of Children,* Indian Statistical Institute, Technical Report No. Demo/8/74, 10 October 1974, p. 6, table 2.

[j] "Ideal and desired family sizes lie between four and five children, depending on the precise question" (see Geoffrey McNicoll and Si Gde Made Mamas, *The Demographic Situation in Indonesia,* Papers of the East-West Population Institute, No. 28 (Honolulu, Hawaii, East-West Center, 1973), p. 24.

[k] For Tehran, see H. T. Khazaneh, "Attitude of married women toward fertility, family size and family planning in the city of Tehran", in "Report on the study of the impact of literacy and education on fertility and family planning by the KAP method in the city of Tehran and the city of Isfahan", Institute of Social Studies and Research, University of Tehran, 1971 (mimeographed), pp. 26 and 30.

[l] Average number of children wanted by wife under ideal conditions.

[m] Hidehiko Hama, "Report of the Sixth Fertility Survey in 1972 Nos. 7 to 12", *Jinko-Mondai Kenkyu* (Journal of Population Problems), No. 130 (April 1974), pp. 41, 43 and 45.

[n] For ideal number of children reported by women, by level of education, for religious groups, village and city, see David Yaukey, *Fertility Differences in a Modernizing Country, a Survey of Lebanese Couples* (Princeton, New Jersey, Princeton University Press, 1971), table VII.2 and p. 16.

[o] Malaysia, National Family Planning Board, *Report on the West Malaysian Family Survey, 1966–1967* (Kuala Lumpur, 1968), p. 26.

[p] Figures for "desired" number of children by age of women obtained from a 1974 unpublished report of the International Bank for Reconstruction and Development/International Development Association.

[q] "Family size norms and ideals", in John A. Ballweg and Susan S. Ward, *Assessment of Family Planning Acceptability in the Philippines* (Blacksburg, Virginia, Virginia Polytechnic Institute and State University, 1973), p. 24.

[r] Hyun-Sang Moon, Seung-Hyun Han and Soon Choi, "Recent trends in ideal family size", *Population and Family Planning in the Republic of Korea* (Korean Institute for Family Planning, 1974), vol. II, table III.10.

[s] Republic of Korea, Ministry of Health and Social Affairs, *The Findings of the National Survey on Family Planning, 1966* (Seoul, Planned Parenthood Federation of Korea, 1966), p. 127, table 51.

[t] Kap Suk Koh and David P. Smith, *The Korean 1968 Fertility and Family Planning Survey* (National Family Planning Center, 1970), p. 159, table 22.

[u] Bom Mo Chung and others, *Psychological Perspectives: Family Planning in Korea* (Seoul, Korean Institute for Research in the Behavioral Sciences, 1972), pp. 18–19 and 56; pp. 27–28, table S.9; p. 36, table S. 20.

[v] Kun Yong Song and Seung-Hyun Han, *1973 National Family Planning and Fertility Survey—A Comprehensive Report* (Seoul, Korean Institute for Family Planning, 1974), p. 32, table 2.2; p. 81, table 2.35.

[w] For the "ideal" number of children for married couples, see Wan Fook Kee and Saw Swee-Hock, *Report of the First National Survey on Family Planning in Singapore 1973* (Singapore Family Planning and Population Board and National Statistical Commission, 1974), pp. 15–16 and table II.4.

[x] For ideal number of children in a rural district, see Amos H. Hawley and Visid Prachuabmoh, "Family growth and family planning in a rural district of Thailand", in Bernard Berelson and others, eds., *Family Planning and Population Programs* (Chicago, University of Chicago Press, 1966), p. 535, table 13.

[y] John Knodel and Pichit Pitaktepsombati, "Thailand: fertility and family planning among rural and urban women", *Studies in Family Planning,* vol. 4, No. 9 (September 1973), p. 235, table 3; John Knodel and Pichit Pitaktepsombati, "Fertility and family planning in Thailand: results from two rounds of a national study", *Studies in Family Planning,* vol. 6, No. 11 (November 1975), p. 404, table 2.

[z] Hyun-Sang Moon, Seung-Hyun Han and Soon Choi, *loc. cit.,* p. 284, table II.11.

[aa] *Fertility and Family Planning in Europe around 1970: a Comparative Study of Twelve National Surveys* (United Nations publication, Sales No. E. 76.XIII.2), chap. V., "Attitudes towards family size in Europe: expectations and ideals", tables 77 and 100.

[bb] Carmen A. Miro, "Some misconceptions disproved: a program of comparative fertility surveys in Latin America", in Bernard Berelson and others, eds., *Family Planning and Population Programs, a World Review* (Chicago, University of Chicago Press, 1966), table 16.

[cc] Carmen A. Miro, *loc. cit.,* table 16. See also Latin American Demographic Centre (CELADE) and Community and Family Study Center, *Fertility and Family Planning in Metropolitan Latin America* (Chicago, 1972), tables 6.6 and 6.7.

[dd] Latin American Demographic Centre (CELADE) and Community and Family Study Center, *op. cit.,* tables 6.6 and 6.7.

[ee] Henri Leridon, Élisabeth Zucker and Maïte Cazenave, *Fécondité et famille en Martinique—faits, attitudes et opinions,* Institut national d'études démographiques, Cahier No. 56 (Paris, Presses universitaires de France, 1970), tables LXX and LXXI.

[ff] Jack Harewood and Norma Abdullah, *Family Planning in Trinidad and Tobago in 1970: Preliminary Report on the Family Planning Survey—Females* (St. Augustine, Trinidad, University of the West Indies, Institute of Social and Economic Research, 1971), pp. 2.1–2.6, table 2.

[gg] Unless otherwise indicated, data taken from *Fertility and Family Planning in Europe around 1970: a Comparative Study of Twelve National Surveys,* tables 77 and 100.

[hh] Henri Bastide and Alain Girard, "Attitudes et opinions des Français à l'égard de la fécondité et de la famille", *Population* (Paris), vol. 30, No. 4–5 (July-October 1975), p. 698, table 4.

[ii] Norman B. Ryder and Charles F. Westoff, *Relationships among Intended, Expected, Desired and Ideal Family Sizes: United States, 1965* (Center for Population Research, 1969), tables 3 and 4.

[jj] Data taken from *Fertility and Family Planning in Europe around 1970: a Comparative Study of Twelve National Surveys,* tables 77 and 100.

[kk] W. D. Borrie, *Population and Australia: a Demographic Analysis and Projection,* First Report of the National Population Inquiry, vol. I (Canberra, Australian Government Publishing Service, 1975), tables VI.1 and VI.3.

[ll] Average number of children planned before marriage: 3.3; after the birth of the first child: 2.7

[mm] Average number of children expected by birth cohorts of the respondents for various generations.

[nn] V. Belova, "Survey of attitudes on the ideal and intended number of children in the family", *Vestnik Statistiki,* No. 6 (June 1971), pp. 26 and 30, tables 2 and 5; V. Belova, "Differing opinions regarding the ideal and anticipated number of children in a family", *Vestnik Statistiki,* No. 7 (July 1973), p. 28, table 1; p. 33, table 5; and p. 34, table 7.

TABLE 125. AVERAGE NUMBER OF CHILDREN CONSIDERED "IDEAL" BY FEMALE RESPONDENTS AND AVERAGE NUMBER OF RESPONDENTS' LIVING CHILDREN AT TIME OF SURVEY, SELECTED COUNTRIES, SPECIFIED DATES

		Universe		Average number of children	
			Population	"Ideal"	Living
Less developed regions					
Africa					
Morocco	1966	9 cities	"Ever married" women under 50	3.3	3.2
	1967	Rural areas	"Ever married" women under 50	4.6	3.3
Nigeria	1969–1973[a]	Rural KAP survey in Ishan division	Married women aged 15–44	7.3[b]	3.6
Sierra Leone	1969–1970	National	Currently married women and single women with children aged 15–49 years	6.1	3.8
Tunisia	1964	10 population centres	All married women under 40 years of age living with their husbands	4.1[c]	2.3[c]
				4.3[d]	4.7[d]
Asia (excluding Japan)					
India	1970	Calcutta	Married women aged 20–39 years	3.0	2.6
Iran	1971	Tehran City	1,338 married women, of whom 711 literate and 627 illiterate, between ages 15–19 and 45 and over	4.3	3.9
Malaysia	1966–1967	Peninsular Malaysia only	5,457 adults	5.1[b]	3.6
Republic of Korea	1965	National	3,445 currently married women aged 15–44 years	3.9	3.6
	1966	National	3,368 currently married women aged 15–44 years	3.9	3.6
	1968	National	6,889 currently married women under age 50	3.9	3.5
	1970–1971	National	1,883 currently married women under 44 years	3.6	3.2
	1973	National	3,366 currently married women aged 15–44 years	3.1	3.1
Singapore	1973	National	2,076 currently married women aged 15–44 years	3.1	3.4
Philippines	1968	National	7,329 "ever married" women 15 years of age and over	5.4	3.7
	1972	National	9,000 "ever married" women aged 15–49	4.33	4.25
Thailand	1969–1970	National	Currently married Thai women aged 15–44 years		
			Rural	3.94	4.06
			Provincial urban	3.85	3.66
			Bangkok-Thonburi	3.59	3.56
More developed regions					
Japan	1972	National	9,355 couples	2.8	1.8
United States of America	1965	National, excluding Hawaii and Alaska	5,617 married under 45 years	3.29	2.76
USSR	1969	National	Married women up to 40 years of age	2.89	1.87

Sources: See table 124.

[a] Based on information from second round in 1970.

[b] Desired number of children.

[c] Wife's age up to 30 years.

[d] Wife's age 30–39 years.

TABLE 126. PERCENTAGE DISTRIBUTION OF FEMALE POPULATION BY MARITAL STATUS, SELECTED COUNTRIES, CENSUS YEARS AND AGE GROUPS

		"Ever married"	Single	Currently married	Consensually married	Widowed	Divorced
Africa				*Ages 20–24*			
Mauritius	1952	76.1	23.9	66.7	5.7	1.2	0.2
	1962	72.6	27.4	64.0	4.3	0.7	0.3
	1972	...	46.1	47.3	2.4	0.4	0.3
Réunion	1954	39.1	60.9	38.6[a]	...	0.4	0.1
	1961	42.3	57.7	40.1	...	0.3	0.0
	1967	42.8	57.2	42.1	...	0.3	0.4
				Ages 45–49			
Mauritius	1952	94.3	5.7	63.1	5.7	22.8	0.4
	1962	94.8	5.2	64.9	6.2	19.2	0.5
	1972	...	3.7	70.6	3.8	16.1	0.8
Réunion	1954	80.6	19.4	62.4[a]	...	17.4	0.8
	1961	82.1	16.9	67.0	...	15.5	0.6
	1967	83.4	16.6	67.5	...	12.5	3.4

TABLE 126. PERCENTAGE DISTRIBUTION OF FEMALE POPULATION BY MARITAL STATUS, SELECTED COUNTRIES, CENSUS YEARS AND AGE GROUPS *(continued)*

		"Ever married"	Single	Currently married	Consensually married	Widowed	Divorced	
Latin America								
Caribbean and Guyana					*Ages 20–24*			
Cuba	1970	69.8	30.2	39.8	25.1	4.7	0.3
Dominican Republic	1960	65.6	34.4	20.7	43.4	0.2	1.3[b]
	1970	60.8	39.2	23.5	35.8	0.2	0.6
Guadeloupe	1954	23.1	76.9[c]	22.8[d]	...	0.2	0.1[b]
	1961	24.9	75.1	24.6	...	0.3	0.1
	1967	26.5	73.5	26.0	...	0.2	0.3
Guyana	1960	58.2	41.8	57.0	...	0.5	0.2
Jamaica	1953[e]	10.1	89.9[c]	9.9	...	0.2	...
	1960	40.9	59.1	11.5	29.1	0.1	0.0
Martinique	1954	15.3	84.7[c]	15.0[d]	...	0.2	0.1
	1961	16.8	83.2	16.6	...	0.1	0.1
	1967	18.9	81.2	18.6	...	0.1	0.2
Puerto Rico	1960[f]	60.4	39.6	45.2	9.3	0.4	1.6
	1970[g]	54.7	45.3	39.6	4.0	0.5	2.0
					Ages 45–49			
Cuba	1970	89.5	10.6	52.2	27.1	5.4	4.7
Dominican Republic	1960	81.5	18.5	45.3	26.3	6.5	3.5[b]
	1970	83.1	17.0	47.4	25.6	6.2	2.5
Guadeloupe	1954	62.5	37.5[c]	50.0[d]	...	11.3	1.2
	1961	64.8	35.2	54.8	...	8.4	1.6
	1967	67.8	32.2	57.0	...	7.8	3.1
Guyana	1960	80.2	19.8	64.5	...	13.2	1.0
Jamaica	1953[e]	53.8	46.2[c]	45.5	...	8.3	...
	1960[h]	72.2	27.8	47.5	13.3	9.1	0.8
Martinique	1954	63.1	37.0[c]	51.4[d]	...	10.6	1.1
	1961	62.5	37.6	53.1	...	7.9	1.5
	1967	66.7	33.3	57.1	...	6.9	2.7
Puerto Rico	1960[f]	94.5	5.5	65.8	10.2	9.3	3.7
	1970[g]	93.5	6.5	66.8	4.6	6.6	6.5
Middle America					*Ages 20–24*			
Costa Rica	1950	50.6	49.4	40.2	8.3	0.4	0.2
	1963	55.0	45.1	44.7	8.2	0.2	0.2
	1973	51.3	48.7	40.0	9.8	0.2	0.2
El Salvador	1961	55.7	44.3	24.9	29.2	0.4	1.2
Guatemala	1950	67.6	32.5	17.9	48.8	0.6	0.3
	1964	69.3	30.7	26.2	41.8	0.7	0.6
Honduras	1961	60.6	39.4	30.4	29.6	0.4	0.2
Mexico	1960	64.2	35.8	51.2	11.3	1.2	0.5
	1970	61.5	38.5	48.2	10.4	0.7	0.4
Panama	1970	66.5	33.5	20.9	36.2	0.5	0.3
					Ages 45–49			
Costa Rica	1950	81.5	18.5	56.6	7.5	12.5	0.5
	1963	84.0	16.0	62.2	8.9	7.1	1.1
	1973	85.4	14.6	64.8	9.7	5.5	1.2
El Salvador	1961	73.7	26.3	38.9	24.0	8.6	2.2
Guatemala	1950	82.1	17.9	27.0	40.8	13.7	0.7
	1964	85.4	14.6	34.3	38.9	10.8	1.5
Honduras	1961	75.9	24.1	37.2	29.4	8.5	0.8
Mexico	1960	91.5	8.5	64.9	10.8	14.5	1.2
	1970	92.9	7.1	68.3	10.5	9.8	1.1
Panama	1970	93.1	6.9	40.8	31.2	6.0	1.8
Temperate South America					*Ages 20–24*			
Argentina	1960	44.4	55.6	39.0	5.0	0.2	0.0
	1970	44.0	56.0	36.9	6.1	0.2	0.9[b]
Chile	1952	41.8	58.2	37.3	3.2	0.4	0.1
	1960	42.9	57.1	38.9	2.8	0.3	0.0
	1970[i]	43.9	56.1	40.3	2.3	0.3	0.0
Uruguay	1963	45.9	54.1	41.1	4.1	0.2	0.5
					Ages 45–49			
Argentina	1960	86.6	13.4	73.1	5.0	7.2	0.2
	1970	89.0	11.0	72.7	5.7	7.2	3.4[b]
Chile	1952	84.2	15.8	63.1	4.2	13.8	0.3
	1960	85.7	14.3	66.2	4.6	10.7	0.4
	1970[i]	87.0	13.0	68.0	3.6	9.8	0.0
Uruguay	1963	86.4	13.6	70.9	5.7	7.1	2.8

TABLE 126. PERCENTAGE DISTRIBUTION OF FEMALE POPULATION BY MARITAL STATUS, SELECTED COUNTRIES, CENSUS YEARS AND AGE GROUPS (*continued*)

		"Ever married"	*Single*	*Currently married*	*Consensually married*	*Widowed*	*Divorced*
Tropical South America				*Ages 20–24*			
Brazil	1970	49.2	50.8	43.0	3.9	0.3	0.0
Colombia	1964	53.4	46.6	40.5	11.0	0.6	0.0
	1967–1968[j]	59.4	40.6	42.0	12.8	1.2	0.0
Ecuador	1962[k]	38.7	61.3	26.8	11.4	0.0	0.0
	1974[k]	38.2	61.8	23.8	12.4	0.2	0.1
Venezuela	1961	57.8	42.2	32.9	24.0	0.3	0.6
	1971	49.3	50.7	31.9	16.5	0.4	0.5
				Ages 45–49			
Brazil	1970	91.2	8.8	70.0	4.5	11.2	0.0
Colombia	1964	81.4	18.6	56.6	10.1	11.7	0.0
	1967–1968[j]	90.0	10.0	51.6	14.5	11.8	0.0
Ecuador	1962[h]	85.1	14.9	57.5	12.9	13.6	0.1
	1974[h]	89.0	11.0	58.6	15.3	9.6	1.1
Venezuela	1961	75.2	24.8	42.6	20.9	9.8	1.9
	1971	79.0	21.0	49.6	20.2	7.1	2.2

Sources: Unless otherwise specified, files of the United Nations Statistical Office and official publications of the country concerned.

Note: 0.0 signifies magnitude not zero, but less than half of unit employed.

[a] Including consensually married and separated population.
[b] Including separated population.
[c] Including consensually married.
[d] Including legally separated.
[e] Based on a sample survey.
[f] Data based on a 25 per cent sample of census returns.
[g] Data based on a sample of census returns.
[h] For ages 45–54 years.
[i] Data based on a 5 per cent sample of census returns.
[j] Jesús Rico Velasco, "Tipos de unión y fecundidad en Colombia", in Rodolfo Heredia B. and Elena Prada S., eds. *La Fecundidad en Colombia, Encuesta Nacional de Fecundidad* (Bogotá, Asociación Colombiana de Facultades de Medicina, 1973) p. 44.
[k] For ages 15–24 years.

TABLE 127. PERCENTAGE DISTRIBUTION OF THE POPULATION BY SEX AND MARITAL STATUS, SELECTED COUNTRIES, CENSUS YEARS AND AGE GROUPS

		Females					*Males*			
		"Ever married"	*Single*	*Currently married*	*Widowed*	*Divorced*	*"Ever married"*	*Single*	*Currently married*	*Widowed and divorced*
Northern America						*Ages 20–24*				
Canada	1951	51.5	48.5	51.2	0.2	0.1	25.6	74.4	25.5	0.1
	1961	59.5	40.5	59.2	0.2	0.2	30.5	69.5	30.4	0.1
	1971	56.5	43.5	55.7	0.3	0.6	32.4	67.6	32.0	0.3
United States of America	1950	67.7	32.3	63.4	0.4	1.7	41.0	59.0	38.7	1.1
	1960	71.6	28.4	67.2	0.3	1.8	46.9	53.2	44.6	1.1
	1970	63.7	36.3	57.9	0.7	2.6	44.5	55.5	41.7	1.6
						Ages 45–49				
Canada	1951	88.3	11.7	81.2	6.5	0.7	86.9	13.2	84.6	2.3
	1961	90.5	9.5	83.7	5.9	0.9	89.5	10.5	87.6	1.9
	1971	93.0	7.0	86.0	5.0	2.0	90.9	9.1	88.2	2.7
United States of America	1950	92.1	7.9	77.3	8.6	3.7	91.3	8.7	84.2	5.0
	1960	93.5	6.5	80.0	6.7	4.3	92.8	7.2	86.6	4.4
	1970	94.7	5.4	80.4	5.9	5.5	93.4	6.6	86.4	5.1
East Asia										
						Ages 20–24				
Hong Kong	1961	51.4	48.6	51.0	0.2	0.2	13.8	86.2	13.6	0.1
	1971	32.4	67.6	32.3	0.1	0.8[a]	7.9	92.1	7.9	0.0[a]
Japan	1955	33.6	66.5	32.6	0.1	0.8	9.9	90.1	9.7	0.2
	1960	31.7	68.3	31.2	0.1	0.4	8.4	91.6	8.3	0.1
	1970	28.4	71.6	27.7	0.3	0.3	10.0	90.0	9.8	0.1
						Ages 45–49				
Hong Kong	1961	92.6	7.4	75.5	16.2	0.8	94.9	5.1	91.4	3.4
	1971	96.2	3.8	89.1	6.6	0.5[a]	92.8	7.2	90.4	2.4
Japan	1955	98.3	1.7	78.1	17.5	2.7	98.7	1.3	94.8	3.9
	1960	97.9	2.1	76.8	17.7	3.4	98.6	1.4	95.4	3.2
	1970	96.0	4.0	82.6	9.1	4.3	98.1	1.9	95.6	2.5

TABLE 127. PERCENTAGE DISTRIBUTION OF THE POPULATION BY SEX AND MARITAL STATUS, SELECTED COUNTRIES, CENSUS YEARS AND AGE GROUPS *(continued)*

		Females					Males			
		"Ever married"	*Single*	*Currently married*	*Widowed*	*Divorced*	*"Ever married"*	*Single*	*Currently married*	*Widowed and divorced*
South Asia										
Eastern South Asia										
						Ages 20–24				
Peninsular Malaysia	1957	78.6	21.4	74.8	0.8	3.1	37.7	62.3	36.1	1.6
Singapore	1957	67.0	33.0	65.9	0.5	0.5[a]	22.3	77.7	22.1	0.2
	1970	35.4	64.6	35.0	0.2	0.3	11.5	88.5	11.4	0.1
						Ages 45–49				
Peninsular Malaysia	1957	98.6	1.4	71.5	22.8	4.3	93.2	6.8	87.2	6.0
Singapore	1957	94.3	5.7	68.8	25.1	0.5[a]	92.3	7.7	87.9	4.3
	1970	96.9	3.1	81.3	14.4	1.3	94.1	5.9	91.3	2.8
Middle South Asia										
						Ages 20–24				
Sri Lanka	1953	67.5	32.5	65.8[bc]	1.2	0.5	16.4	83.7	15.9	0.5
	1963	58.7	41.3	57.6[c]	0.8	0.3	15.2	84.8	15.0	0.2
						Ages 45–49				
Sri Lanka	1953	95.6	4.4	73.9[bc]	21.1	0.6	92.4	7.6	86.6	5.8
	1963	96.1	3.9	81.6[c]	14.0	0.5	92.6	7.4	88.7	3.9
Western South Asia										
						Ages 20–24				
Cyprus	1960	56.1	43.9	55.2	0.3	0.3	35.9	64.1	35.6	0.1
Israel	1961	66.6	33.4	65.2	0.4	1.0	25.8	74.3	25.4	0.4
						Ages 45–49				
Cyprus	1960	95.2	4.9	85.3	7.9	0.8	96.0	4.1	93.9	1.6
Israel	1961	97.5	2.5	86.7	7.9	2.9	96.4	3.6	93.9	2.5
Europe										
Eastern Europe, Yugoslavia and USSR										
						Ages 20–24				
Bulgaria	1956	72.6	27.4	71.1	0.3	1.2	38.8	61.2	58.2	0.6
	1965	74.6	25.4	72.7	0.2	1.7	36.9	63.1	36.3	0.6
Czechoslovakia	1970	65.1	34.9	63.2	0.2	1.7	33.5	66.5	32.9	0.6
German Democratic Republic	1950	39.6	60.4	38.3	0.3	1.0	29.1	71.0	28.7	0.4
	1964	66.8	33.3	64.6	0.2	2.0	40.1	59.9	39.1	1.0
	1971	65.4	34.6	63.0	0.2	2.2	33.4	66.6	32.6	0.8
Hungary	1960	68.6	31.4	67.1	0.2	1.3	29.2	70.8	28.8	0.3
	1970	67.7	32.3	65.4	0.2	2.1	32.3	67.8	31.5	0.8
Poland	1960	58.8	41.1	58.0	0.2	0.7	27.8	72.2	27.6	0.3
	1970	53.4	46.6	52.5	0.1	0.8	24.4	75.6	24.2	0.2
Romania	1956	66.4	33.6	64.0	0.7	1.6[a]	28.7	71.3	28.3	0.4
	1966	75.9	24.2	73.1	0.5	2.3	32.1	67.9	31.5	0.6
Yugoslavia	1953	58.6	41.4	57.0	0.5	1.1	36.0	64.0	35.4	0.6
	1971	63.4	36.7	61.8	0.3	1.3	32.3	67.7	31.8	0.4
USSR[d]	1960	...	...	50.1	...	...	...	...	27.4	...
	1970	...	...	55.9	...	...	...	...	28.9	...
						Ages 45–49				
Bulgaria	1956	97.8	2.2	89.5	7.1	1.2	98.1	1.9	95.9	2.1
	1965	97.8	2.2	89.6	5.9	2.2	98.3	1.7	96.3	2.1
Czechoslovakia	1970	95.1	5.0	82.6	7.1	5.3	94.3	5.7	89.3	5.0
German Democratic Republic	1950	90.9	9.1	74.2	12.8	3.9	95.6	4.4	91.5	4.0
	1964	92.1	7.9	71.8	13.0	7.4	97.8	2.2	95.3	2.5
	1971	89.4	10.6	75.4	6.9	7.1	97.9	2.1	94.8	3.0
Hungary	1960	92.7	7.3	77.5	11.6	3.7	94.5	5.5	91.4	3.1
	1970	94.6	5.5	81.7	7.4	5.5	95.7	4.3	91.7	4.0
Poland	1960[e]	90.5	9.4	78.0	10.2	2.2	95.7	4.3	93.8	1.9
	1970[a]	92.8	7.2	83.6	5.5	3.7	95.5	4.5	92.6	2.9
Romania	1956[e]	95.7	4.3	79.9	13.0	2.7[a]	97.1	2.9	94.9	2.2[a]
	1966[e]	95.6	4.3	83.7	7.7	4.2	97.2	2.8	95.0	2.3
Yugoslavia	1953	94.2	5.8	75.1	17.5	1.6	95.3	4.7	90.7	4.7
	1971	93.7	6.3	80.0	9.5	4.3	96.3	3.7	93.2	3.1
USSR[d]	1960	...	...	54.9	...	...	...	...	96.3	...
	1970	...	...	71.9	...	...	...	...	95.2	...

TABLE 127. PERCENTAGE DISTRIBUTION OF THE POPULATION BY SEX AND MARITAL STATUS, SELECTED COUNTRIES, CENSUS YEARS AND AGE GROUPS (*continued*)

		Females					*Males*			
		"Ever married"	*Single*	*Currently married*	*Widowed*	*Divorced*	*"Ever married"*	*Single*	*Currently married*	*Widowed and divorced*
Northern Europe						*Ages 20–24*				
Denmark	1950	48.6	51.4	46.8	0.1	0.7	18.0	82.0	17.4	0.3
	1965	54.6	45.4	52.6	0.1	0.8	26.5	73.5	25.9	0.2
Finland	1950	41.0	59.0	40.3	0.3	0.4	21.4	78.6	21.1	0.2
	1960	46.0	54.0	45.0	0.1	0.4	25.0	75.1	24.5	0.2
	1970	47.7	52.3	46.3	0.1	0.9	28.4	71.6	27.8	0.4
Ireland	1951	17.7	82.3	17.6	0.1	0.0	5.1	94.9	5.1	0.0
	1961	21.8	78.2	21.8	0.0	0.0	7.5	92.5	7.5	0.0
	1971	31.1	68.9	31.0	0.1	0.0	15.4	84.6	15.4	0.0
Norway	1950	34.4	65.7	33.8	0.1	0.2	12.0	88.0	11.8	0.1
	1960	50.3	49.7	49.3	0.1	0.4	21.1	78.9	20.7	0.2
	1970	53.8	46.2	52.4	0.1	0.6	28.3	71.8	27.7	0.2
Sweden	1950	40.3	59.7	39.8	0.1	0.4	15.5	84.5	15.4	0.1
	1960	42.5	57.5	42.0	0.1	0.5	17.6	82.4	17.4	0.2
	1970	40.0	60.0	39.1	0.1	0.8	16.9	83.1	16.7	0.2
United Kingdom										
England and Wales	1951	48.2	51.8	48.0[f]	0.1	0.1	23.8	76.2	23.7[f]	0.1
	1961	57.8	42.2	57.5	0.1	0.2	31.0	69.0	31.0	0.0
	1971	63.1	36.9	62.4	0.7	0.0	39.9	60.1	39.7	0.2
Northern Ireland	1951	29.2	70.8	29.1[a]	0.1	0.0	13.0	87.0	12.9[a]	0.0
	1961	38.7	61.3	38.6	0.1	0.0	21.0	79.0	21.0	0.0
	1966	43.4	56.6	43.4	0.1	0.0	25.4	74.6	25.4	0.0
Scotland	1951	39.8	60.3	39.6	0.1	0.1	20.0	80.0	19.9	0.1
	1961	51.8	48.2	51.6	0.1	0.1	29.6	70.4	29.5	0.1
	1966[g]	54.0	46.0	53.7	0.1	0.2	32.2	67.8	32.1	0.1
						Ages 45–49				
Denmark	1950	85.8	14.2	75.9	5.0	3.7	90.0	10.0	84.9	3.8
	1965	92.4	7.6	80.7	4.4	5.9	90.7	9.4	84.4	5.0
Finland	1950	81.3	18.7	67.4	11.0	2.8	88.1	11.9	84.1	3.9
	1960	85.8	14.2	71.8	9.3	4.0	90.0	10.0	85.5	3.9
	1970	87.8	12.2	75.6	6.8	5.0	87.7	12.3	82.9	4.4
Ireland	1951	73.7	26.3	66.2	7.5	0.0	68.0	32.0	65.6	2.5
	1961	77.9	22.1	71.6	6.3	0.0	69.5	30.5	67.8	1.7
	1971	81.8	18.2	76.2	5.7	0.0	71.7	28.3	70.4	1.3
Norway	1950	79.5	20.5	71.7	5.3	2.0	84.5	15.5	81.1	2.9
	1960	87.0	13.0	79.9	4.1	2.4	86.6	13.4	83.3	2.7
	1970	91.6	8.4	84.1	3.9	2.8	87.0	13.0	83.2	3.1
Sweden	1950	81.5	18.5	74.1	4.6	2.8	83.8	16.2	80.4	3.5
	1960	88.9	11.0	80.6	3.7	4.6	85.5	14.5	80.8	4.6
	1970	92.2	7.8	82.0	3.6	6.6	86.1	13.9	79.8	6.2
United Kingdom										
England and Wales	1951	84.8	15.2	78.0[f]	5.8	1.1	90.2	9.8	87.8[f]	2.5
	1961	89.5	10.5	82.7	5.0	1.9	90.5	9.6	88.2	2.2
	1971	92.2	7.8	85.4	6.8	0.0	90.2	9.8	87.5	2.8
Northern Ireland	1951	76.2	23.8	69.1[a]	6.8	0.3	79.5	20.5	77.0[a]	2.5
	1961	81.3	18.7	74.8	6.0	0.4	81.4	18.6	79.7	1.7
	1966	83.8	16.2	77.5	5.7	0.5	82.2	17.8	80.6	1.6
Scotland	1951	79.7	20.3	72.0	7.0	0.7	86.5	13.5	83.7	2.9
	1961	85.8	14.2	78.3	6.3	1.2	87.6	12.4	85.2	2.4
	1966[g]	87.5	12.5	80.4	5.9	1.2	88.3	11.7	86.1	2.2
Southern Europe (except Yugoslavia)						*Ages 20–24*				
Albania	1955	75.6	24.4	74.5	0.6	0.5	27.3	72.7	26.9	0.4
Greece	1961	34.7	65.3	34.2	0.1	0.4	10.8	89.2	10.7	0.1
	1971	47.4	52.6	46.7	0.1	0.6	13.0	87.0	12.8	0.1
Italy[d]	1950	...	...	32.0	...	...	...	...	9.3	...
	1960	...	...	34.2	...	...	...	...	9.0	...
	1970	...	...	43.0	...	...	...	...	13.2	...
Malta	1957	42.3	57.7	42.2	0.1	0.0	20.8	79.2	20.8	0.0
	1967	32.8	67.2	32.7	0.1	0.0	15.8	84.2	15.8	0.0

TABLE 127. PERCENTAGE DISTRIBUTION OF THE POPULATION BY SEX AND MARITAL STATUS, SELECTED COUNTRIES, CENSUS YEARS AND AGE GROUPS (*continued*)

		Females					*Males*			
		"Ever married"	*Single*	*Currently married*	*Widowed*	*Divorced*	*"Ever married"*	*Single*	*Currently married*	*Widowed and divorced*
Southern Europe (*continued*)										
Portugal	1950	34.7	65.3	34.3	0.3	0.0	16.1	83.9	16.0	0.1
	1960	37.9	62.1	37.6	0.2	0.0	19.1	80.9	19.0	0.1
	1970	39.5	60.5	39.2	0.2	0.0	19.7	80.3	19.6	0.1
Spain	1950	20.7	79.3	20.5	0.2	0.0	5.8	94.2	5.7	0.0
	1960	26.6	73.4	26.4	0.2	0.0	7.0	93.0	6.9	0.1
						Ages 45–49				
Albania	1955	98.5	1.5	79.3	18.6	0.6	94.9	5.1	90.6	4.4
Greece	1961[b]	93.8	6.2	78.8	13.7	1.4	93.1	6.9	90.9	2.2
	1971[h]	92.9	7.1	81.4	9.5	2.1	93.8	6.2	92.2	1.6
Italy[d]	1950	...	...	75.9	9.2	...	...	...	88.4	1.9
	1960	...	...	77.3	8.3	...	...	...	89.0	1.1
	1970	...	...	78.6	6.4	...	...	...	86.9	1.0
Malta	1957	75.8	24.2	68.9	6.9	0.0	79.0	21.0	76.8	2.3
	1967	79.1	20.9	73.9	5.2	0.0	82.4	17.6	81.0	1.4
Portugal	1950	82.8	17.2	71.5	10.3	0.9	87.8	12.2	83.9	3.8
	1960	84.1	15.9	76.0	7.1	0.8	88.5	11.5	85.8	2.5
	1970	88.0	12.0	81.3	5.6	0.4	91.7	8.3	89.8	1.4
Spain	1950	84.8	15.3	71.3	13.5	0.0	90.4	9.6	87.2	3.2
	1960	85.4	14.6	76.3	8.7	0.4	92.9	7.1	91.1	1.8
Western Europe										
						Ages 20–24				
Austria	1951	33.8	66.2	32.8	0.2	0.8	16.1	83.9	15.8	0.3
	1961	42.0	58.0	40.8	0.1	1.1[a]	18.2	81.8	17.8	0.4[a]
	1971	55.0	45.0	52.8	0.2	2.1	25.8	74.2	25.1	0.7
Belgium	1961	56.5	43.5	56.2	0.1	0.2	29.3	70.7	29.2	0.1
	1970	59.9	40.1	59.4	0.2	0.3	35.5	64.5	35.3	0.1
France	1955	49.5	50.6	49.1	0.1	0.3	23.2	76.8	23.1	0.1
	1962[i]	44.0	56.0	43.6	0.1	0.3	16.4	83.6	16.3	0.1
	1968[j]	43.9	56.1	43.4	0.2	0.3	20.8	79.2	20.6	0.1
Germany, Federal Republic of[d]	1950	...	...	31.7	...	...	...	...	16.5	...
	1960	...	...	44.4	...	...	...	...	20.4	...
	1970	...	...	50.2	...	...	...	...	20.4	...
Netherlands	1960	40.6	59.4	40.2	0.1	0.3	16.7	83.3	16.6	0.1
	1970[e]	53.7	46.4	53.1	0.1	0.5	28.4	71.6	28.2	0.2
Luxembourg	1960	49.6	50.4	49.4	0.1	0.1	19.0	81.0	19.0	0.1
	1966	54.4	45.6	54.0	0.2	0.2	22.0	78.0	22.0	0.1
Switzerland	1950	26.1	73.9	25.8	0.1	0.3	9.7	90.3	9.6	0.1
	1960	34.7	65.3	34.2	0.1	0.4	13.9	86.1	13.8	0.1
	1970	45.2	54.8	43.7	0.1	0.6	18.8	81.3	17.5	0.2
						Ages 45–49				
Austria	1951	85.7	14.3	70.1	11.3	4.3	90.0	10.0	84.8	5.1
	1961	87.9	12.1	68.3	14.2	5.4[a]	92.0	8.0	86.5	5.5[a]
	1971	88.4	11.6	75.0	7.5	5.9	93.0	7.0	88.3	4.7
Belgium	1961	90.8	9.2	82.8	5.8	2.3	91.0	9.0	87.7	3.2
	1970	92.3	7.7	84.8	5.2	2.3	91.7	8.3	88.5	3.2
France	1955	90.0	10.0	78.0	8.2	3.9	89.3	10.7	83.5	5.8
	1962[i]	91.0	9.0	80.3	7.0	3.7	89.3	10.7	85.4	3.8
	1968[j]	91.3	8.7	82.1	5.8	3.5	89.8	10.2	86.1	3.7
Germany, Federal Republic of[d]	1950	...	...	74.0	10.5	...	...	...	89.4	1.0
	1960	...	...	70.2	5.9	...	...	...	87.7	0.8
	1970	...	...	79.8	5.4	...	...	...	82.9	0.9
Netherlands	1960	89.0	11.0	82.2	4.4	2.1	92.3	7.7	90.0	2.1
	1970 (E)	91.8	8.2	85.6	4.0	2.2	93.7	7.0	90.8	2.2
Luxembourg	1960	88.0	12.0	78.6	7.7	1.8	88.7	11.3	86.0	2.8
	1966	89.2	10.8	80.6	6.9	1.7	90.6	9.4	88.2	2.4
Switzerland	1950	80.8	19.2	71.9	5.4	3.5	86.6	13.4	82.9	3.6
	1960	84.7	15.3	76.2	4.7	3.9	88.1	11.9	84.7	3.5
	1970	87.8	12.2	77.2	4.5	4.5	90.3	9.7	81.7	3.6

TABLE 127. PERCENTAGE DISTRIBUTION OF THE POPULATION BY SEX AND MARITAL STATUS, SELECTED COUNTRIES, CENSUS YEARS AND AGE GROUPS (*continued*)

		Females					Males			
		"Ever married"	*Single*	*Currently married*	*Widowed*	*Divorced*	*"Ever married"*	*Single*	*Currently married*	*Widowed and divorced*
Oceania										
						Ages 20–24				
Australia	1954	59.0	41.0	57.6	0.2	0.2	25.5	74.5	25.1	0.1
	1961	60.5	39.5	59.2	0.2	0.2	27.2	72.8	26.7	0.1
	1971	64.3	35.8	62.0	0.2	0.4	36.1	63.9	35.1	0.3
Fiji	1956	74.5	25.5	72.5	0.7	1.3	42.5	57.5	41.6	0.9
	1966	68.3	31.7	67.2	0.4	0.7	34.7	65.3	34.3	0.3
New Zealand	1951	50.7	49.3	49.7	0.1	0.2	21.3	78.7	21.0	0.1
	1961	59.5	40.5	58.6	0.1	0.1	27.0	73.0	26.7	0.1
	1966	61.1	38.9	60.0	0.1	0.1	31.6	68.4	31.2	0.1
						Ages 45–49				
Australia	1954	89.6	10.4	78.8	6.1	2.0	88.4	11.6	82.6	3.4
	1961	92.6	7.4	82.1	5.4	2.1	90.0	10.0	84.2	3.2
	1971	95.1	4.9	84.1	5.5	2.6	91.0	9.0	84.6	3.7
Fiji	1956	96.6	3.5	78.0	16.7	1.8	94.0	6.0	88.8	5.2
	1966	96.8	3.2	83.0	12.3	1.5	95.8	4.2	92.7	3.1
New Zealand	1951	88.2	11.8	79.2	5.7	1.9	89.6	10.4	84.7	3.5
	1961	91.7	8.3	83.3	5.1	2.0	90.8	9.2	86.7	3.1
	1966	93.3	6.7	84.9	4.9	2.1	91.2	8.8	86.8	3.2

Sources: Unless otherwise specified, files of the United Nations Statistical Office and official publications of the country concerned.

Note: 0.0 signifies zero, but less than half of unit employed; (E) = estimate.

[a] Including separated population.

[b] Including legally separated population.

[c] Including consensually married population.

[d] *Economic Survey of Europe in 1974*, part two, *Post-War Demographic Trends in Europe and the Outlook until the Year 2000* (United Nations publication, Sales No. E.75.II.E.16).

[e] For ages 40–49 years.

[f] Including some of the separated population.

[g] Data based on a 10 per cent sample of census returns.

[h] For ages 45–54 years.

[i] Data based on a 5 per cent sample of census returns.

[j] Data based on a 25 per cent sample of census returns.

TABLE 128. CRUDE MARRIAGE RATES, SELECTED COUNTRIES AND YEARS, 1950–1974

	Number of marriages per 1,000 population						
	1950–1954	*1955–1959*	*1960–1964*	*1965–1969*	*1970*	*1971*	*1972*
Africa							
Réunion	8.1	7.3	7.1	6.9	6.8	6.3	6.6
Tunisia	...	...	7.0	6.2	6.7	7.2	8.4
Latin America							
Caribbean							
Dominican Republic	5.1	3.8	4.4	4.0	4.2	4.4	4.2
Middle America							
El Salvador	4.5	4.6	3.7	3.3	3.3	3.7	3.7
Honduras	4.0	4.9	3.5	3.4	3.9	3.3	3.5
Mexico	6.7	6.9	6.7	7.2	7.3	7.5	8.1
Temperate South America							
Chile	7.9	7.9	7.1	9.2	...	...	...
Uruguay	...	...	8.6	7.9	8.2	8.1	7.6
Tropical South America							
Colombia	...	...	5.8	4.3	5.2	...	...
Ecuador	6.5	6.5	6.4	5.6	5.8	5.9	5.8
Venezuela	...	...	5.8	5.8	5.9	6.2	5.6
Northern America							
Canada	8.8	7.9	7.1	8.1	8.8	8.9	9.2
United States of America	10.1	8.9	8.7	9.9	10.6	10.7	10.9
Asia							
Cyprus	7.1	7.6	5.9	6.5	6.9	7.9	5.0
Israel	10.6	8.3	7.6	8.1	8.9	9.2	9.2
Japan	8.1	8.6	9.7	9.6	10.0	10.5	10.4
Malaysia[a]	...	...	1.1	1.3	2.1	1.5	1.4
Singapore	...	...	3.2	5.9	7.4	7.4	8.5
Sri Lanka	6.4	6.2	6.0	5.2	6.8	6.7	6.9

TABLE 128. CRUDE MARRIAGE RATES, SELECTED COUNTRIES AND YEARS, 1950–1974 *(continued)*

	Number of marriages per 1,000 population						
	1950–1954	*1955–1959*	*1960–1964*	*1965–1969*	*1970*	*1971*	*1972*
Europe							
Eastern Europe							
Bulgaria	9.4	8.8	8.3	8.5	8.6	8.2	8.2
Czechoslovakia	9.1	7.7	7.9	8.4	8.8	9.0	9.3
German Democratic Republic	9.8	8.8	9.2	7.2	7.7	7.6	7.8
Hungary	10.6	9.7	8.5	9.2	9.4	9.1	9.4
Poland	10.3	9.3	7.7	7.5	8.6	8.9	9.3
Romania	10.9	11.4	9.7	8.0	7.2	7.3	7.6
Northern Europe							
Denmark	8.4	7.7	8.1	8.4	7.4	6.6	6.2
Finland	8.0	7.4	7.5	8.6	8.8	8.2	7.6
Ireland	5.4	5.4	5.5	6.3	7.0	7.4	7.4
Norway	8.2	7.1	6.7	7.4	7.6	7.6	7.3
Sweden	7.5	7.0	7.1	7.1	5.4	4.9	4.9
United Kingdom	8.0	7.8	7.5	8.1	8.5	8.3	8.6
Southern Europe							
Albania	9.6	7.8	8.2	7.6	6.8	7.0	...
Greece	7.6	8.2	8.4	8.6	7.7	8.3	6.8
Italy	7.3	7.6	8.0	7.3	7.4	7.5	7.7
Malta	6.0	6.4	6.0	6.5	7.4	8.4	9.2
Portugal	7.9	8.3	8.1	8.6	9.1	9.5	8.8
Spain	7.7	8.4	7.6	7.1	7.4	7.5	7.6
Yugoslavia	10.4	9.1	8.8	8.7	9.0	8.9	9.0
Western Europe							
Austria	8.2	7.8	8.3	7.6	7.1	6.4	7.7
Belgium	7.9	7.6	6.9	7.3	7.6	7.6	7.7
France	7.5	7.0	7.0	7.1	7.8	7.9	8.1
Germany, Federal Republic of	9.7	9.0	9.1	7.9	7.3	7.1	6.7
Luxembourg	8.6	7.8	6.8	6.6	6.4	6.5	6.6
Netherlands	8.4	8.2	8.0	9.1	9.5	9.3	8.8
Switzerland	7.8	7.9	7.7	7.5	7.5	7.1	6.8
Oceania							
Australia	8.6	7.6	7.4	8.6	9.3	9.2	8.8
Fiji	7.6	7.5	7.0	7.3	7.8	7.9	8.3
New Zealand	8.6	8.0	7.9	8.7	9.2	9.5	9.3
USSR	11.1	12.1	10.1	9.0	9.7	10.0	9.4

Source: Files of the United Nations Statistical Office and official publications of the country concerned.

[a] Data for Peninsular Malaysia only.

TABLE 129. CRUDE DIVORCE RATES, SELECTED COUNTRIES AND YEARS, 1950–1974

	Number of divorces per 1,000 population						
	1950–1954	*1955–1959*	*1960–1964*	*1965–1969*	*1970*	*1971*	*1972*
Africa							
Réunion	0.0	0.1	0.1	0.2	0.3	0.4	...
Tunisia	...	...	0.9	0.9	0.8	0.9	...
Latin America							
Caribbean							
Dominican Republic	0.4	0.3	0.4	0.6	0.9	1.4	...
Middle America							
El Salvador	0.2	0.2	0.2	0.2	0.2	0.3	0.3
Honduras	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Mexico	0.3	0.4	0.5	0.6	0.6	0.2	0.2
Temperate South America							
Uruguay	...	...	0.8	1.0	1.0	1.0	...
Tropical South America							
Ecuador	...	...	...	0.2	0.2	0.2	...
Venezuela	...	...	0.3	0.2	0.2	0.2	0.3
Northern America							
Canada	0.4	0.4	0.4	...	...	...	...
United States of America	2.5	2.2	2.3	2.8	3.5	3.7	4.0

TABLE 129. CRUDE DIVORCE RATES, SELECTED COUNTRIES AND YEARS, 1950–1974 *(continued)*

	Number of divorces per 1,000 population						
	1950–1954	*1955–1959*	*1960–1964*	*1965–1969*	*1970*	*1971*	*1972*
Asia							
Cyprus	...	...	0.1	0.2	0.2	0.3	0.2
Israel	1.6	1.1	1.0	0.9	0.8	0.8	0.8
Japan	0.9	0.8	0.8	0.8	0.9	1.0	1.0
Sri Lanka	0.2	0.2	0.2	0.1	...	...	...
Europe							
Eastern Europe							
Bulgaria	0.7	0.8	1.0	1.1	1.2	1.1	1.2
Czechoslovakia	1.0	1.1	1.2	1.5	1.7	2.0	1.8
German Democratic Republic	2.0	1.4	1.5	1.7	1.6	1.8	2.0
Hungary	1.2	1.7	1.8	2.1	2.2	2.3	2.3
Poland	0.5	0.5	0.6	0.9	1.1	1.1	1.1
Romania	1.4	1.8	1.9	0.8	0.4	0.5	0.6
Northern Europe							
Denmark	1.5	1.5	1.4	1.5	1.9	2.7	2.6
Finland	0.9	0.8	0.9	1.1	1.3	1.6	1.8
Norway	0.7	0.6	0.7	0.8	0.9	1.0	1.0
Sweden	1.2	1.2	1.2	1.4	1.6	1.7	1.9
United Kingdom	0.6	0.5	0.6	0.9	1.1	1.4	2.2
Southern Europe							
Albania	1.0	0.6	0.7	0.4	0.8	0.8	...
Greece	...	0.1	0.4	0.4	0.4	0.4	0.4
Malta	...	...	...	...	0.1	...	0.1
Portugal	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Yugoslavia	0.9	1.1	1.1	1.1	1.0	1.0	1.0
Western Europe							
Austria	1.4	1.2	1.1	1.3	1.4	1.3	1.3
Belgium	0.5	0.5	0.5	0.6	0.7	0.7	0.8
France	0.8	0.7	0.7	0.7	0.8	0.9	0.9
Germany, Federal Republic of	1.2	0.9	0.9	1.1	1.3	1.3	1.4
Luxembourg	0.4	0.4	0.4	0.6	0.6	0.7	0.8
Netherlands	0.6	0.5	0.5	0.6	0.8	0.9	1.1
Switzerland	0.9	0.9	0.8	0.9	1.0	1.1	1.2
Oceania							
Australia	0.8	0.7	0.7	0.8	1.0	1.0	1.2
Fiji	0.5	0.4	0.4	0.4	0.5	...	...
New Zealand	0.8	0.7	0.7	0.8	1.1	1.2	...
USSR	0.5	0.9	1.3	2.5	2.6	2.6	2.6

Source: Files of the United Nations Statistical Office and official publications of the country concerned.

TABLE 130. MEDIAN AGE OF WOMEN AT FIRST MARRIAGE, SELECTED COUNTRIES AND YEARS

	1950	*1955*	*1960*	*1965*	*1970*	*1973*
Africa						
Eastern Africa						
Réunion	22.90[a]	22.67	22.53	22.54	22.21	...
Northern Africa						
Egypt	18.74[b]	18.69	18.84	18.61[c]	19.11	19.31[d]
Northern America						
Canada	22.53	22.24	21.70	21.61	21.83	21.71
United States of America	21.51	20.48	20.21	20.53	20.89	20.80[d]
Asia						
East Asia						
Japan	22.65	23.23	23.72	23.61	23.52	23.59
Eastern South Asia						
Singapore	...	...	22.94[e]	22.99[e]	23.07	23.24
Western South Asia						
Israel	...	...	20.92[f]	20.99	21.59	21.71

TABLE 130. MEDIAN AGE OF WOMEN AT FIRST MARRIAGE, SELECTED COUNTRIES AND YEARS *(continued)*

	1950	1955	1960	1965	1970	1973
Europe						
Eastern Europe						
Bulgaria	...	21.04[g]	20.36	20.20	20.83	20.94
Czechoslovakia	...	21.97[h]	21.24	20.92	21.27	21.44[d]
German Democratic Republic	23.15[i]	22.37	21.98	22.22[e]	...	21.25[d]
Hungary	22.21	21.97	21.00	21.14	20.68	20.48[d]
Poland	...	22.73[b]	22.41	...	20.56	22.08
Romania	...	...	21.33[j]	20.41	20.56	20.96
Northern Europe						
Denmark	...	22.54	22.19	21.93	22.33[k]	22.62[d]
Ireland	...	26.09[g]	25.52	24.31	23.63	23.48[d]
Norway	25.13	24.07	23.10	22.09	22.46	22.23
Sweden	24.06	23.62	23.06	22.55	23.17	23.73
United Kingdom						
England and Wales	23.17	22.71	22.23	21.80	21.77	21.83
Scotland	23.40	22.93	22.45	21.89	21.86	21.67
Southern Europe						
Greece	...	24.29[i]	24.41	23.90	22.89	22.89[d]
Italy	23.66	23.87	23.80	23.42	22.58	23.10[d]
Malta	...	22.48	22.68	22.42	22.86	23.20
Portugal	23.37	23.43	23.37	23.24	22.90	22.74
Spain	25.06	25.09	25.17	24.12	23.67	23.47[d]
Yugoslavia	...	22.03[h]	22.12	21.71	21.14	21.03[d]
Western Europe						
Austria	24.52	24.05	22.61[j]	22.48	22.26	22.07[d]
Belgium	...	22.32	22.63	22.05	23.39	23.28[d]
France	22.95[b]	23.04	23.04	22.23	22.34	22.37[d]
Germany, Federal Republic of	24.38	23.56	22.80	22.82	22.10	21.99[d]
Luxembourg	23.64[b]	23.38	22.99	22.56	22.24	22.05
Netherlands	...	24.08	23.38	22.75	22.43	22.31
Switzerland	24.65	24.27	23.91	23.35	23.30	23.41
Oceania						
Australia	22.80	22.40	21.97	21.66	21.62	21.51
New Zealand	...	22.72	22.12	21.61	...	...

Source: Files of the United Nations Statistical Office and official publications of the country concerned.

[a] For 1952.
[b] For 1953.
[c] For 1964.
[d] For 1972.
[e] For 1959.
[f] For 1962.
[g] For 1957.
[h] For 1956.
[i] For 1951.
[j] For 1961.
[k] For 1969.

TABLE 131. OBJECTIVES, GOALS AND TARGETS OF NATIONAL FAMILY PLANNING PROGRAMMES AND MEASURES TO ACHIEVE THEM, SELECTED COUNTRIES

	Target for annual rate of population increase (percentage)	Target for birth rate (per 1 000)	Target for fertility	Number of users	Number of births averted	Family planning				Family planning services provided		Special measures				
						Policy or programme	Support	As part of health programme	Child spacing	Directly	As part of maternal and child health care	Increase in marriage age	Legalization of induced abortion	Incentives to smaller families	Disincentives to larger families	Others
Africa																
Eastern Africa																
Kenya (1974–1978)	From 3.3 to 3.0[a]	From 48 to 43		640 000	150 000	X					X					
Mauritius (1969–1980/5)	Reduction to 1.6–1.7	From 27.0 to 22.5	GRR from 1.96 to 1.20	27 100 in 1973 72 000 in 1976	[b]	X					X				X	
Uganda (1972–1977)	Reduction from 3.2	Reduction	Reduction			X										
United Republic of Tanzania								X								
Middle Africa																
Zaire						X					X					
Northern Africa																
Algeria									X		X					
Egypt (1973–1982)	From 2.06 to 1.06	From 33.6 to 23.6			3 120 000	X				X			X[c]	X		[d]
Morocco (1973–1977)		From 49 to 43		391 000		X				X						
Tunisia (1971–1976)			GFR[e] from 175 to 163.5[f]		30 000 (1976) 45 000 (1981)	X				X		X	X		X	[g]
Southern Africa																
Botswana (1970–1980)	Maximum 2.5					X					X					
Lesotho	Reduction		Reduction				X				X					
South Africa	Reduction		Reduction			X					X					
Western Africa																
Ghana (1973–2000)	From 3.9 to 1.75					X				X						
Liberia	Reduction	Reduction	Reduction					X			X		X[c]			
Mali								X			X					
Nigeria	Reduction if necessary							X								
Latin America																
Caribbean																
Barbados	1.0 in 1980	From 20.7 in 1920 to 17.0 in 1980				X				X			X[c]			
Cuba			[h]					X			X					Free sterilization
Dominican Republic (1969–1973)		From 48 to 38		11.5 percent of women		X					X					
Haiti								X			X					
Jamaica (1971–1977/8)		From 34.8 to 25				X					X					
Puerto Rico		Decline to 15.2 in 1985[i]				X				X						Free sterilization

TABLE 131. OBJECTIVES, GOALS AND TARGETS OF NATIONAL FAMILY PLANNING PROGRAMMES AND MEASURES TO ACHIEVE THEM, SELECTED COUNTRIES (*continued*)

	Target for annual rate of population increase (percentage)	*Target for birth rate (per 1 000)*	*Target for fertility*	*Number of users*	*Number of births averted*	*Family planning*				*Family planning services provided*		*Special measures*				
						Policy or programme	*Support*	*As part of health programme*	*Child spacing*	*Directly*	*As part of maternal and child health care*	*Increase in marriage age*	*Legalization of induced abortion*	*Incentives to smaller families*	*Disincentives to larger families*	*Others*
Trinidad and Tobago (1968–1972)		From 25 in 1970 to 15.5 in 1980				X					X		X[e]			
Middle America																
Costa Rica								X			X		X[e]			
El Salvador	From 3.5 to 1.0–2.0					X					X		X[e]			
Guatemala	Reduction	Reduction				X					X		X[e]			
Honduras			Reduction			X					X					
Mexico	Reduction			20 percent of women by 1976		X				X			X[e]			
Nicaragua								X			X		X[e]			
Panama								X			X		Considered			
Temperate South America																
Chile (1970–1975)								X[h,j]			X		X[e]			
Uruguay	Higher	Higher					X						X[e]			
Tropical South America																
Bolivia								X			X					
Brazil								X[k]					X[e]			
Colombia (1970–1973)	Reduction					X					X		X[e]			
Ecuador			Reduction			X					X		X[e]			
Paraguay							X						X[e]			
Venezuela								X			X		X[e]			
Asia																
East Asia																
China	Planned rate	Regulation	Regulation			X				X		X	X			Free services
Hong Kong	Reduction					X				X						
Republic of Korea (1972–1976)	From 2.0 to 1.5					X				X			X[e]			
Eastern South Asia																
Indonesia (1971–1975)	Reduction	Reduction		6 000 000 acceptors		X				X			X[e]			
Malaysia (1971–1985)	From 2.6 to 1.5					X				X			X[e]			
Philippines (1974–1977)	To 2.4 in 1977	From 43.2 in 1970 to 35.9				X				X				X	X	
Singapore (1972–1975)		From 22 in 1970 to 18[1]				X				X			X	X	X	
Thailand	2.5 in 1976 2.0 in 1980					X				X			X[e]			

Middle South Asia											
Afghanistan											
(1972–1976)					X		X				
Bangladesh											
(1973–1978)	[m]	From 47 to 44		X		X		X			
India (1974–1979)	To 1.4 in 1968	From 40 to 30	[n]	X		X	X	X	X	Considered	
Iran (1967–1987)	From 3.2 to 1.0			X		X		X			
Nepal (1975–1979)		From 42 to 38[o]		X			X				
Pakistan	Reduction	Reduction		X		X					
Sri Lanka											
(1972–1976)		To 23 in 1980		X			X	X[e]			
Western South Asia											
Iraq					X		X				
Turkey	Reduction	Reduction		X			X	X[e]			
Oceania											
Fiji	Reduction	25.0 in 1979		X		X					

Sources: National sources; unpublished studies, reports and documents of the United Nations and the United Nations Fund for Population Activities; Dorothy Nortman, *Population and Family Planning Programs: A Factbook*, Reports on Population/Family Planning, No. 2, 7th ed. (New York, The Population Council, 1975); Bernard Berelson, *World Population: Status Report 1974*, Reports on Population/Family Planning, No. 15 (New York, The Population Council, 1974); International Planned Parenthood Federation, *Family Planning in Five Continents* (London, 1969).

[a] 2.0 in 2000.

[b] Number of births to be averted: 7,900 in 1972–1977, 30,400 in 1977–1982 and 46,800 in 1982–1987.

[c] On medical grounds.

[d] Change in divorce laws.

[e] General fertility rate, which usually relates all births to all women of reproductive ages regardless of marital status, expressed per 1,000.

[f] Gross reproduction rate from 3.1 in 1971 to 1.2 in 2000.

[g] Polygamy abolished; women's rights equalized.

[h] Reduction in maternal and infant mortality and criminal abortion.

[i] Target of zero population growth.

[j] Increase in coverage of eligible women from 9.4 per cent to 30 per cent in the selected areas.

[k] As a human right.

[l] Replacement fertility level by 1980 and zero population growth by 2030.

[m] Stationary population of less than 150 million within the next 25 to 30 years.

[n] 18 million sterilizations, 6 million IUD insertions and 9 million "other methods" (mostly condoms) during the period.

[o] Infant mortality rate from 200 to 150.

TABLE 132. NUMBER OF ACCEPTORS BY YEAR OF ACCEPTANCE, SPECIFIED COUNTRIES, 1970–1974, ALL PROGRAMME METHODS

	1970	1971	1972	1973	1974
Africa					
Eastern Africa					
Kenya	30 900	41 000	43 000	47 300	49 200
Mauritius	9 800	10 000	7 900	16 700	13 600
Uganda	5 700[a]	10 900[b]	13 800[ab]	9 200[a]	81 900[bc]
Northern Africa					
Egypt	206 000	221 000	237 000	150 000	143 000
Morocco	25 100	29 000	27 500	37 000	54 800
Tunisia	29 200	34 800	37 900	42 300	54 300
Southern Africa					
Botswana	...	...	...	3 700	4 600
Western Africa					
Gambia	...	1 000	1 900	2 100	...
Ghana	8 300	22 700	30 500	29 800	34 200
Nigeria	7 600	12 900	17 500	24 600	33 200
Latin America					
Caribbean					
Dominican Republic	17 200	19 700	18 700	24 400	38 100
Jamaica	19 300	22 100	23 100	28 000	24 600
Puerto Rico	28 300[a]	44 700[a]	31 700[a]	21 600[a]	...
Trinidad and Tobago	10 000	8 700	...	6 200	...
Middle America					
Costa Rica	19 000	25 400	26 700	34 500	25 700[d]
El Salvador	6 400	7 100	6 300	27 900	41 300
Guatemala	21 200[bc]	18 100[ac] 17 400[f]	18 100[bc] 16 800[f]	18 700[bc] 16 400[f]	21 500[f]
Honduras	12 700	14 600	25 100	23 000	13 900[f]
Mexico[g]	25 100	28 900	44 500	192 200	...
Nicaragua	10 100	13 700	13 600	15 600	14 800[f]
Panama	700[a]	400[a]	15 500[b] 15 900[af]	13 700[b] 14 300[af]	24 000[b] 13 900[f]
Temperate South America					
Chile	62 700[bf] 65 500[a]	82 600[bf] 58 100[a]	62 800[bf] 61 000[a]	51 100[ab] 36 000[f]	151 000[f]
Tropical South America					
Colombia	115 400	145 000	154 600	159 000	189 600
Ecuador	9 000	14 900	17 400	26 900	34 500
Paraguay	4 800[f]	7 400[f]	8 400[f]	13 700[f]	16 600[f]
Venezuela	32 700	44 200	82 100	88 000	86 000

Asia					
East Asia					
Hong Kong	28 100	28 900	30 300	31 400	28 300
Republic of Korea	580 000[af]	509 700[af]	462 000[af]	585 100[af]	427 800[f]
Eastern South Asia					
Indonesia[h]	181 100	519 400	1 078 900	1 342 700	1 633 000
Peninsular Malaysia	56 000	54 800	56 400	57 300	61 700
Philippines	191 700	408 800	621 900	737 900	749 900
Singapore	28 500	25 000	27 500	33 400	35 000
Thailand[i]	202 900	363 800	403 200	378 700	445 000
Middle South Asia					
Afghanistan	4 500[a]	7 600[ac]	9 900[af]	12 200[af]	11 000[bf]
Bangladesh[j]	159 600[bk] 186 000[bl] 271 700[ak] 314 200[al]	27 400[bk] 42 400[bl] 9 100[ak] 16 600[al]	8 500[bk] 700[al] 15 700[ak] 400[al]	18 600[bk] 600[bl] 15 800[ak] 800[al]	34 700[bk] 6 700[bl]
India[h]	3 782 000[b] 3 768 100[f]	5 050 000[a] 5 029 200[f]	5 880 000[a] 5 786 800[f]	4 328 000[a] 4 236 400[f]	3 672 000[f]
Iran[j]	304 100[km]	385 000[km]	444 300[km]	469 800[km]	481 100[km]
Nepal[h]	37 400	43 800	65 100	86 100	97 400
Pakistan[j]	309 500[k]		136 100[k]	109 100[k]	112 500[k]
Sri Lanka	55 300	49 300	71 000	95 900	
Western South Asia					
Turkey	65 600	53 700	51 800	58 700	66 600

Sources: Except as otherwise indicated, Dorothy Nortman, *Population and Family Planning Programs: A Factbook*, Reports on Population/Family Planning, No. 2, 6th ed. (New York, The Population Council, 1974), table 16; and *ibid.*, 7th ed. (New York, the Population Council, 1975), table 16.

[a] W. O'Leary and others, *Family Planning Statistics 1965 to 1973; Africa, Asia, Latin America* (Washington, D.C., Bureau of the Census, International Statistical Program Center, 1975).

[b] D. Nortman, *op. cit.*

[c] Including 67,700 acceptors of injectable contraceptives.

[d] Data for 1974 not comparable with those for previous years because of changes in definitions and methods of counting acceptors.

[e] Including acceptors of private family planning association.

[f] United States of America, Agency for International Development, *Family Planning Service Statistics, Annual Report 1974* (Washington, D.C., 1975).

[g] Before 1973, data relate only to affiliates of the International Planned Parenthood Federation; data for 1973 reflect acceptors of contraceptives in government facilities as well.

[h] Fiscal year, beginning in indicated year and ending in following year.

[i] Annual totals reflect an estimated 10 per cent duplication of acceptors by method. The increase in 1974 over 1973 acceptors results largely from the inclusion of acceptors in private-sector service centres that have joined the Government's reporting system.

[j] Data for all programme methods considered deficient.

[k] Intra-uterine devices.

[l] Sterilizations.

[m] Pills.

TABLE 133. ACCEPTORS OF ALL PROGRAMME METHODS AS A PERCENTAGE OF MARRIED WOMEN AGED 15–44 YEARS, SPECIFIED COUNTRIES AND CENSUS YEARS

Region, country and census year	*Number of married women aged 15–44 in census year*	*Number of consensually married women aged 15–44 in census year*	*Total*	*Number of acceptors in census year*[a]	*Rate of acceptance (percentage)*
Africa					
Eastern Africa					
Kenya (1969)	1 664 654		1 664 654[bcd]	26 400	1.6
Northern Africa					
Morocco (1971)	2 232 278		2 232 278[cef]	29 000	1.3
Latin America					
Caribbean					
Dominican Republic (1970)	226 015	256 330	482 345	17 200	3.6
Puerto Rico (1970)	281 713	24 684	306 397[cefg]	28 300	9.2
Middle America					
Costa Rica (1973)	174 143	36 056	210 199[ch]	34 500	16.4
Mexico (1970)	5 068 829	998 941	6 067 770[cegi]	25 100	0.4
Panama (1970)	73 911	99 253	173 164[ej]	700	0.4
Temperate South America					
Chile (1970)	945 140	49 500	994 640[bf]	62 700	6.3
Tropical South America					
Ecuador (1974)	563 000	218 491	781 491[ck]	34 500	4.4
Venezuela (1971)	797 585	395 167	1 191 753[l]	44 200	3.7
Asia					
East Asia					
Hong Kong (1971)	440 006		440 006[b]	28 900	6.6
Republic of Korea (1970)	4 082 446		4 082 446[eg]	580 000	14.2
Eastern South Asia					
Singapore (1970)	240 847		240 847[ce]	28 500	11.8
Thailand (1970)	4 439 857		4 439 857[cegi]	202 900	4.6
Middle South Asia					
Nepal (1971)	2 306 161		2 306 161[ceg]	40 600[m]	1.8
Western South Asia					
Turkey (1970)	5 503 828		5 503 828[cef]	65 600	1.2

[a] Data from table 132; for Kenya, see D. Nortman, *op. cit.*, 6th ed., table 16.

[b] *Demographic Yearbook, 1971* (United Nations publication, Sales No. E/F.72.XIII.1), table 12. Data not adjusted for mid-year population. Excluding unknown and separated.

[c] Including women under 15 years old.

[d] Including women up to 49 years old.

[e] *Demographic Yearbook, 1973* (United Nations publication, Sales No. E/F.74.XIII.1), table 26. Data not adjusted for mid-year population. Excluding unknown and separated.

[f] Data based on sample of census returns.

[g] *De jure* population.

[h] Costa Rica, Dirección General de Estadística y Censos, *Censo de Población 1973*, vol. I (San José, 1974), table 21.

[i] Excluding adjustment for under-enumeration.

[j] Excluding Canal Zone.

[k] Ecuador, Oficina de los Censos Nacionales, *Resultados Anticipados por Muestro. Censo de Población de Vivienda 1974* (Quito, 1974), table 7.

[l] Venezuela, Dirección General de Estadística y Censos Nacionales, *Censo 1971, Venezuela, Regumen Nacional, Caracteristicas Generales*, vol. I (Caracas, 1974), table 21.

[m] Average for fiscal years 1970/71 and 1971/72.

TABLE 134. PERCENTAGES OF MARRIED WOMEN AND ACCEPTORS UNDER AGE 30 TO MARRIED WOMEN[a] AND ACCEPTORS OF ALL AGES, SELECTED COUNTRIES AND CENSUS YEARS

Region, country and census year	*Married women aged 15–29 as a percentage of married women 15–44 years old*	*Percentage of acceptors under 30 years old*
Africa		
Kenya (1969)	53.3[b]	58.5[cde]
Morocco (1971)	48.9	41.6
Latin America		
Ecuador (1974)	69.3[f]	76.5[cg]
Venezuela (1971)	49.2	69.5

TABLE 134. PERCENTAGES OF MARRIED WOMEN AND ACCEPTORS UNDER AGE 30 TO MARRIED WOMEN[a] AND ACCEPTORS OF ALL AGES, SELECTED COUNTRIES AND CENSUS YEARS *(continued)*

Region, country and census year	*Married women aged 15–29 as a percentage of married women 15–44 years old*	*Percentage of acceptors under 30 years old*
Asia		
Hong Kong (1971)	29.0	66.1
Nepal (1971)	56.0	54.7[ce]
Republic of Korea (1970)	37.7	25.8[cdh]
Singapore (1970)	38.0	72.0[i]
Thailand (1970)	45.9	52.9[cdj]
Turkey (1970)	47.2	52.3[d]

Sources: For data on married women, see table 133; for percentage of acceptors under 30 years of age, see table 135.

[a] All married women aged 15–44 years.
[b] Proportion of married women aged 15–29 among married women 15–45 years of age.
[c] Pill acceptors.
[d] IUD acceptors.
[e] For 1970.
[f] Proportion of married women 15–34 among married women 15–44 years of age.
[g] For 1973.
[h] For 1969.
[i] Linear extrapolation on the basis of 1972–1974.
[j] For 1971.

TABLE 135. AGE OF ACCEPTORS OR WIVES OF ACCEPTORS OF ALL PROGRAMME METHODS, SELECTED COUNTRIES, 1970–1974

		Percentage of acceptors under 30 years of age	*Median age at acceptance*
Africa			
Eastern Africa			
Kenya	1970	58.5[a]	28.0[b]
	1971	69.9[b]	25.7[b]
Northern Africa			
Morocco	1970	42.6[c]	31.3[c]
	1971	41.6	31.5
Tunisia	1970	41.5[d]	31.5[d]
	1972	44.9[d]	30.9[d]
Western Africa			
Ghana	1971	40.3[e]	31.4[e]
	1972	61.0[e]	28.0[e]
	1973	55.0[a]	28.8[b]30.7[d]
	1974	55.6[a]	28.7[b]30.8[d]
Nigeria	1972	48.9	30.1
	1973	39.7	31.8
Latin America			
Caribbean			
Dominican Republic	1972	76.7[a]	24.1[b]25.9[d]
	1973	79.4[a]	23.8[b]25.8[d]
Jamaica	1970	69.0	26.0
	1971	71.0	25.4
	1972	75.0	24.5
	1973	76.0	24.1
	1974	76.0	23.9
Middle America			
Costa Rica	1974	72.0	24.7
El Salvador	1971	68.6	26.5
Honduras	1970	79.0[e]	...
	1971	78.1[e]	...
Mexico[f]	1971	50.7[e]	...
	1972	63.2[a]	27.0[b] 28.5[d]
	1973	61.9[a]	27.8[b]27.8[d]
Tropical South America			
Colombia	1971	63.1[e]	26.8[e]
	1972	71.1	25.7
	1973	68.5	26.2
	1974	68.5	26.0
Ecuador	1971	60.2[b]	28.2[b]
	1973	76.5[b]	25.2[b]
Venezuela	1971	69.5[e]	26.2[e]
	1972	69.8[e]	25.9[e]

TABLE 135. AGE OF ACCEPTORS OR WIVES OF ACCEPTORS OF ALL PROGRAMME METHODS, SELECTED COUNTRIES, 1970–1974 (*continued*)

		Percentage of acceptors under 30 years of age	*Median age at acceptance*
Asia			
East Asia			
Hong Kong	1970	61.2	27.9
	1971	66.1[e]	27.0[e]
	1972	71.7	26.5
	1973	85.0[b]	24.0[b]
	1974	86.4[a]	24.6[b]31.0[d]
Republic of Korea	1970	25.8[a]	34.0[b]33.2[ed]
	1971	26.0[b]	33.5[b]
	1972	32.0[d]	32.8[d]
Eastern South Asia			
Indonesia	1972	54.7	29.2
	1973	56.5	28.7
	1974	62.0	27.9
Peninsular Malaysia	1970	56.5[c]	28.8[c]
	1971	61.7	27.7
	1972	64.1	27.4
	1973	66.4	27.0
Philippines	1970	49.4[a]	29.9[b]30.5[d]
	1972	50.5	29.9
	1973	52.8	29.5
Singapore	1972	76.2	25.5
	1973	78.9	25.3
	1974	80.4	26.1
Thailand	1971	52.9[a]	29.5[b]
	1972	59.1[e]	28.2[e]
	1974	63.3[a]	27.3[b]
Middle South Asia			
India	1970	26.5[dh]	32.8[d]34.0[h]
	1971	25.4[g]	34.4[g]
	1972	50.2[g]	30.0[g]
	1973	18.7[g]	35.8[g]
Iran	1972	46.5[b]	30.7[b]
	1973	57.5[b]	28.9[b]
	1974	65.2[b]	26.7[b]
Nepal	1970	54.7[b]	29.1[b]
	1973	51.7[b]	29.6[b]
Sri Lanka	1970	53.5	28.8
	1972	55.3	28.4
	1973	54.4	28.6
	1974	67.9[d]	26.8[d]
Western South Asia			
Turkey	1970	52.3[d]	29.6[d]
	1971	53.8[d]	29.2[d]
	1973	58.9[d]	28.3[d]

Sources: D. Nortman, *op. cit.*, 6th ed., table 20, and 7th ed., table 20.

Note: Data relate to varying periods, i.e., two or more months during the course of the year, and are based on acceptor samples.

[a] Including pill acceptors and IUD acceptors.

[b] Pill acceptors only.

[c] For 1969.

[d] IUD acceptors only.

[e] Acceptors of International Population Family Planning Programme only.

[f] Before 1973, data relate to private sources only; for 1973, data include both private and government sources. See D. Nortman, *op. cit.*, p. 59.

[g] Wives of males sterilized in sterilization camps.

[h] Tubectomies only.

TABLE 136. PERCENTAGE DISTRIBUTION IN THE POPULATION OF (I) ACCEPTORS OF DIFFERENT FAMILY PLANNING METHODS, AND (II) MARRIED WOMEN OF REPRODUCTIVE AGE, BY AGE

	Method	Year	Percentage distribution by age (years)						
			Under 20	20-24	25-29	30-34	35-39	40+	Median age
Africa									
Ghana	Pills	1970/71	2.9	21.0	28.3	24.7	16.3	7.5	29.6
	IUD	1970/71	1.6	12.9	23.4	28.1	21.4	12.5	32.1
	Women (15-44)	1970	21.2	21.0	19.1	16.6	12.1	9.8	27.0
Kenya	Pills	1970	—33.0—		28.0	17.0	12.0	9.0	28.0
	IUD	1970	—25.0—		29.0	21.0	14.0	11.0	29.3
	Married women (15-44)	1969	11.0	20.6	21.4	15.9	13.4	17.7	29.3
Mauritius	All methods	1969	10.4	30.8	25.0	18.0	11.4	4.3	26.8
	Married women (15-44)	1962	9.9	18.5	20.9	18.6	18.9	13.2	30.2
Morocco	All methods	1966/67	2.4	14.9	28.9	28.3	18.9	6.6	30.7
	Married women (15-44)	1960	—30.4—		—44.3—		—25.3—		27.2
Tunisia	IUD	1969	1.3	15.0	20.0	27.0	24.2	6.5	31.4
	Sterilization	1969	0.0	2.3	15.3	28.0	33.8	19.6	35.6
	Married women (15-44)	1966	5.6	17.2	22.0	21.9	19.2	14.1	31.2
Asia									
Bangladesh	IUD	1965/66	2.6	16.6	28.4	30.1	15.7	6.6	30.4
	Sterilization	1967/68	—5.1—		32.5	39.7	19.0	3.7	31.6
Hong Kong	Pills	1972	5.7	40.8	32.0	10.4	7.4	3.4	25.5
	IUD	1972	2.2	19.4	31.6	18.7	18.0	10.1	29.5
	Married women (15-44)	1971	1.4	12.0	15.6	20.3	25.0	25.7	35.3
India	IUD	1965-1969	2.4	—47.0—		—44.8—		5.8	30.1
	Married women (15-44)	1961	15.0	22.2	21.7	17.2	13.3	10.6	35.1
Indonesia	Pills	1972	6.2	22.9	28.2	23.9	15.2	3.6	28.7
	IUD	1972	3.7	18.5	29.3	27.5	17.1	3.9	29.7
	Married women (15-44)	1964/65	7.7	17.4	24.0	20.4	20.4	12.8	30.2
Iran	Pills	1972	7.0	21.5	18.0	23.6	19.4	10.5	30.7
	IUD	1972	6.6	21.4	22.9	22.9	20.0	6.3	29.8
	Married women (15-44)	1966	12.2	19.2	20.4	19.5	15.6	13.1	29.6
Lao People's Democratic Republic	Pills (urban areas)	1972	2.0	20.0	32.0	23.0	17.0	6.0	29.4
	Pills (rural areas)	1972	1.0	18.0	21.0	27.0	24.0	9.0	31.9
Nepal	Pills	1970	5.3	22.8	26.6	25.5	12.5	6.6	29.1
	Married women (15-44)	1961	—36.2—		—39.9—		—23.9—		28.5
Pakistan	IUD	1965/66	0.5	7.5	16.6	27.4	28.5	19.5	34.1
	Sterilization	1968	—6.6—		22.3	28.0	28.0	17.1	33.8
Peninsular Malaysia	All methods	1971	6.5	29.3	25.9	21.3	12.0	5.0	27.0
	Married women (15-44)	1957	—32.7—		—39.7—		—27.5—		29.4
Republic of Korea	Pills	1969	—3.0—		19.0	35.0	30.0	13.0	34.0
	IUD	1969	—5.0—		23.0	34.0	26.0	12.0	33.2
	Sterilization	1972	—2.0—		17.0	37.0	32.0	11.0	34.2
	Married women (15-44)	1966	1.3	13.7	26.6	24.2	19.2	14.9	31.7
Philippines	Pills	1971	3.5	21.2	27.7	24.9	16.1	6.6	29.6
	IUD	1971	3.7	20.6	26.4	25.2	17.6	6.4	29.9
	Rhythm	1971	2.1	15.0	23.1	25.0	21.3	13.4	32.0
	Married women (15-44)	1960	—25.4—		—42.6—		—31.9—		30.8
Singapore	Pills	1972	11.2	42.5	27.8	10.4	4.5	2.1	24.5
	Married women (15-44)	1957	—26.6—		—42.9—		—30.4—		30.5
Sri Lanka	All methods	1972	2.5	23.4	29.5	21.0	12.7	3.5	28.4
	Married women (15-44)	1963	5.4	18.6	21.8	20.4	20.4	13.4	31.0
Thailand	Pills	1971	3.9	23.8	24.7	22.9	16.2	7.8	29.5
	IUD	1971	2.7	24.1	27.8	23.2	15.8	5.9	29.2
	Married women (15-44)	1960	—24.0—		—45.6—		—30.4—		30.7
Turkey	IUD	1971	4.4	24.4	25.0	23.4	17.3	5.5	29.2
	Married women (15-44)	1965	7.5	18.8	21.9	21.8	17.7	12.3	30.4
Latin America									
Barbados	All methods	1973	44.6	29.7	14.8	6.0	3.6	1.3	20.9
Colombia	Pills	1972	17.2	35.8	23.5	13.3	7.1	3.1	24.6
	IUD	1972	11.3	34.2	26.7	16.3	8.7	2.8	25.9
	Married women (15-44)	1964	2.6	20.6	22.9	21.0	19.2	13.6	30.9
Dominican Republic	Pills	1972	17.6	39.2	23.4	11.9	5.9	2.0	24.1
	IUD	1972	11.0	34.2	26.7	16.3	8.7	2.8	25.9
	Married women (15-44)	1960	—32.0—		—41.2—		—26.8—		29.4
Ecuador	Pills	1971	5.3	24.6	30.3	23.8	10.9	3.9	28.2
	Married women (15-44)	1962	7.5	20.5	22.6	19.0	17.4	13.0	29.9
El Salvador	All methods	1973	10.5	31.6	27.0	17.1	9.6	4.2	26.5
	Married women (15-44)	1961	—29.0—		—40.2—		—30.7—		30.2

TABLE 136. PERCENTAGE DISTRIBUTION IN THE POPULATION OF (I) ACCEPTORS OF DIFFERENT FAMILY PLANNING METHODS, AND (II) MARRIED WOMEN OF REPRODUCTIVE AGE, BY AGE *(continued)*

	Method	Year	Percentage distribution by age (years)						
			Under 20	20-24	25-29	30-34	35-39	40+	Median age
Latin America *(continued)*									
Jamaica	All methods	1973	22.6	33.2	20.4	11.3	6.6	6.2	24.1
	Married women (15-44)	1960	——10.0——		——41.3——		——48.7——		34.7
Mexico	Pills	1972	8.0	31.0	27.0	19.0	12.0	3.0	27.0
	IUD	1972	4.0	25.0	30.0	23.0	15.0	3.0	28.5
	Married women (15-44)	1960	——29.6——		——41.1——		——29.3——		30.0
Nicaragua	Pills	1972	10.6	40.8	26.1	13.9	7.0	1.6	24.8
	IUD	1972	4.8	27.9	39.4	15.4	9.6	2.9	27.2
	Married women (15-44)	1963	11.3	23.5	————47.8————			17.5	29.8
Paraguay	Pills	1973	10.4	21.7	31.3	16.5	12.2	7.8	27.9
	IUD	1973	6.0	23.4	24.5	21.9	20.4	3.8	29.2
	Married women (15-44)	1962	5.9	18.2	19.9	21.8	18.8	15.3	31.4
Puerto Rico	All methods	1973	10.6	29.6	29.4	17.2	8.5	4.8	26.7
	Married women (15-44)	1960	——24.9——		——39.2——		——35.9——		31.4

Sources: D. Nortman, *op. cit.*, 7th ed.; United States Bureau of the Census, International Statistical Programs Center; F. Gutierrez, *Overview of the Contraceptive Service Activities Performed by the Family Planning Programs of the Western Hemisphere Region, January 1-December 1, 1973* (New York, International Planned Parenthood Federation, Western Hemisphere Region, 1974); *Demographic Yearbook, 1970* (United Nations publication, Sales No. E/F.71.XIII.1); *Demographic Yearbook, 1971* (United Nations publication, Sales No. E/F.72.XIII.1).

Note: Data relate to varying periods, i.e., two or more months during the course of the year, and are based on acceptor samples.

TABLE 137. PERCENTAGE OF ACCEPTORS OF ALL PROGRAMME METHODS HAVING THREE OR FEWER CHILDREN AND MEDIAN NUMBER OF LIVING CHILDREN, SELECTED COUNTRIES, 1970-1974

		Percentage of acceptors with three or fewer children	Median number of living children at acceptance
Africa			
Eastern Africa			
Kenya	1970	73.5[a]	4.1[b]–4.8[c]
	1971	46.7[b]	3.7[b]
Mauritius	1970	54.9[d]	3.2[d]
Northern Africa			
Morocco	1970	23.7[d]	5.3[d]
	1971	29.6	4.9
Tunisia	1970	32.9[c]	4.5[c]
	1972	36.0[c]	4.3[c]
Western Africa			
Ghana	1971	39.2[e]	4.2[e]
	1972	53.2[e]	3.3[e]
	1973	44.4[a]	3.9[b]–4.4[c]
Nigeria	1971	26.6[e]	4.8[e]
	1972	42.0	4.0
	1973	37.2	4.1
Latin America			
Caribbean			
Dominican Republic	1972	57.2[a]	2.7[b]–3.5[c]
Jamaica	1970	52.0	3.4
	1974	71.0	2.1
Middle America			
Costa Rica	1974	72.0	2.0
El Salvador	1971	60.6	2.8
Mexico	1971	49.9[e]	3.5[e]
	1972	31.6[a f]	3.7[b]–4.0[c]
	1973	47.0[a]	3.7[b]–3.7[c]
Tropical South America			
Colombia	1971	52.8[e]	3.2[e]
	1972	60.9	2.8
	1973	58.0	2.9
	1974	61.9	2.7
Ecuador	1971	47.7[a]	3.3[b]–4.0[c]
	1973	49.7[a]	2.5[b]–3.7[c]
Venezuela	1971	47.0[e]	3.7[e]
	1972	49.9[e]	3.5[e]

TABLE 137. PERCENTAGE OF ACCEPTORS OF ALL PROGRAMME METHODS HAVING THREE OR FEWER CHILDREN AND MEDIAN NUMBER OF LIVING CHILDREN, SELECTED COUNTRIES, 1970-1974 *(continued)*

		Percentage of acceptors with three or fewer children	*Median number of living children at acceptance*
Asia			
East Asia			
Hong Kong	1971	67.9[e]	...
	1972	84.9[b]	...
	1973	88.0[b]	...
	1974	90.6[a]	...
Republic of Korea	1970	42.0[a,d]	3.9[b,d] 3.8[c,d]
	1971	45.0[b]	3.7[b]
	1972	48.0[c]	3.6[c]
Eastern South Asia			
Indonesia	1971/72	44.0	3.8
	1973	55.0	3.2
	1974	63.3	2.7
Peninsular Malaysia	1971	55.8[a]	3.1[b]–4.5[c]
	1972	55.3	3.1
	1973	58.0	2.9
Philippines	1970	40.0[a]	4.1[b]–4.3[c]
	1972	46.4	3.8
	1973	52.7	3.3
Singapore	1973	89.7	...
	1974	90.2	...
Thailand	1971	51.2[a]	3.4[b]–3.6[c]
	1974	64.2[a]	2.6[b]–2.9[c]
Middle South Asia			
India	1970/71	32.4[c,g]	3.4[c]–4.4[g]
	1971/72	28.8[h]	4.4[h]
	1972/73	33.9[h]	3.9[h]
	1973/74	35.0[h]	4.1[h]
Iran	1971	52.6[e]	3.4[e]
	1972	36.9[a]	4.2[b]–4.7[e]
	1973	45.4[c]	3.7[c]
	1974	55.1[b]	3.2[b]
Nepal	1970	53.1[b]	3.4[b]
	1973/74	51.7[a]	3.4[b]–3.3[c]
Sri Lanka	1970	26.2[f]	3.8
	1972	30.6[f]	3.8
	1973	49.1	3.3
	1974	62.3[c]	2.7[c]
Western South Asia			
Turkey	1970	50.7[c]	3.5[c]
	1971	51.9[c]	3.4[c]
	1973	57.0[c]	3.2[c]

Sources: D. Nortman, *op. cit.*, 6th ed., table 21, and 7th ed., table 21.
Note: Data relate to varying periods, i.e., two or more months during the course of the year.
[a] Including pill acceptors and IUD acceptors.
[b] Pill acceptors only.
[c] IUD acceptors only.
[d] 1969.
[e] International Population Family Planning Program only.
[f] Two or fewer children.
[g] Tubectomy acceptors only.
[h] Sterilized males in selected sterilization camps.

TABLE 138. PERCENTAGE DISTRIBUTION IN THE POPULATION OF ACCEPTORS OF DIFFERENT FAMILY PLANNING METHODS AND OF WOMEN BY NUMBER OF LIVING CHILDREN

Region, country and method	*Year*	*Percentage distribution by number of living children*								*Median number*
		0	*1*	*2*	*3*	*4*	*5*	*6*	*7*	
Africa										
Ghana										
Pills	1970–1972	——15.9——		15.1	12.2	12.7	10.3	——34.2——		4.1
IUD	1970–1972	—— 5.9——		10.6	11.7	13.1	11.0	——47.7——		5.3
Kenya										
Pills	1970	————26.0————			15.0	14.0	13.0	——32.0——		4.1
IUD	1970	————16.0————			14.0	14.0	16.0	——41.0——		4.8
All mothers	1962		19.3	23.1	17.5	13.1	9.5	——17.6——		2.9

TABLE 138. PERCENTAGE DISTRIBUTION IN THE POPULATION OF ACCEPTORS OF DIFFERENT FAMILY PLANNING METHODS AND OF WOMEN, BY NUMBER OF LIVING CHILDREN *(continued)*

Region, country and method	Year	Percentage distribution by number of living children								Median number
		0	1	2	3	4	5	6	7	
Mauritius										
All methods	1969	21.3		17.3	16.3	13.6	10.8	20.7		3.2
Morocco										
All methods	1966–1967	22.6		22.9	21.0	13.9	7.1	12.5		2.7
Tunisia										
IUD	1970	6.7		10.9	14.3	17.0	17.0	32.5		4.5
Sterilization	1969	0.4		2.0	4.1	12.8	21.9	53.0		5.8
Asia										
Bangladesh										
IUD	1965–1966	2.6		7.6	13.3	22.8	18.9	34.7		4.7
Sterilization	1967–1968	9.1		0.1	17.0	25.4	24.0	33.4		4.8
Hong Kong										
Pills	1972	51.5		22.2	11.2	6.6	4.4	4.1		1 to 2
IUD	1972	12.2		25.9	28.8	15.8	6.5	10.8		2.9
All mothers	1966		20.1	20.7	17.9	15.0	10.8	15.6		3.0
India										
IUD	1965–1969	4.9		14.0	20.2	21.5	17.3	22.0		4.0
Married women (15–44)	1963	18.5	15.5	15.0	14.1	12.4	24.5			2.6
Indonesia										
All methods	1971–1972	10.6		15.6	17.8	17.4	14.2	23.6		3.8
All mothers	1964–1965		18.3	19.2	17.7	14.9	11.0	17.4		3.2
Iran										
Pills	1972	7.2		14.8	15.7	18.7	15.2	28.4		4.2
IUD	1972	5.5		14.5	15.7	11.4	16.0	36.9		4.8
Lao People's Democratic Republic										
Pills (urban)	1972	17.0			31.0			49.0		4.5
Pills (rural)	1972	26.0			31.0			43.0		4.0
Malaysia										
Pills	1971	21.5		19.5	15.3	12.2	9.6	21.9		3.1
IUD	1971	5.9		12.3	13.3	18.4	14.1	36.0		4.5
Sterilization	1971	0.4		2.6	6.8	11.7	16.3	62.3		5.7
Nepal										
Pills	1970	15.6		15.8	21.7	17.2	12.8	16.9		3.4
Pakistan										
IUD	1965–1966	3.1		7.3	12.3	17.4	19.7	40.2		5.0
Sterilization	1967–1968	0.2		7.3	21.8	22.0	18.0	30.7		4.4
Philippines										
Pills	1971	0.7	10.4	16.2	31.8		22.7		18.1	3.9
IUD	1971	0.4	8.9	15.4	32.0		22.9		20.3	4.1
Rhythm	1971	0.5	12.2	16.0	30.7		21.7		18.9	3.9
Republic of Korea										
Pills	1969	17.0			23.0	27.0	34.0			3.9
IUD	1969	7.0		17.0	24.0	24.0	17.0	11.0		3.6
Sterilization	1972	1.0		14.0	30.0	27.0	16.0	11.0		3.7
All mothers	1966		11.5	13.4	15.0	14.9	13.9	11.0	20.0	4.2
Singapore										
Pills	1967–1968	23.4		18.6	15.4	11.6	10.0	20.7		3.0
Sri Lanka										
All methods	1972	30.6			30.4		18.7	12.5		3.8
Thailand										
Pills	1971	14.7		19.6	17.3	15.5	11.9	19.9		3.4
IUD	1971	11.0		19.2	18.8	16.9	12.6	21.4		3.6
Turkey										
IUD	1971	99.0		21.4	21.5	18.7	13.1	16.2		3.4
Latin America										
Colombia										
Pills	1972	31.2		21.8	14.0	10.4	6.9	14.8		2.4
IUD	1972	17.6		22.2	16.5	12.7	9.0	21.1		3.1
Dominican Republic										
Pills	1972	23.8		22.1	17.5	11.6	8.6	16.3		2.7
IUD	1972	11.5		19.6	18.5	14.2	11.2	24.8		3.5
Ecuador										
Pills	1971	15.6		18.6	19.4	17.0	9.7	17.9		3.3
IUD	1971	9.3		17.0	16.1	16.7	13.7	25.4		4.0
Jamaica										
All methods	1968–1971	20.5		18.1	16.3	14.1	10.8	20.2		3.2

TABLE 138. PERCENTAGE DISTRIBUTION IN THE POPULATION OF ACCEPTORS OF DIFFERENT FAMILY PLANNING METHODS AND OF WOMEN, BY NUMBER OF LIVING CHILDREN *(continued)*

Region, country and method	*Year*	*Percentage distribution by number of living children*								*Median number*
		0	*1*	*2*	*3*	*4*	*5*	*6*	*7*	
Mexico										
Pills	1972		—32.0—			—29.0—	10.0		—29.0—	3.7
IUD	1972		—31.0—			—25.0—	9.0		—35.0—	4.0
All mothers	1970		12.4	12.4	11.5	11.0	10.0	8.9	33.8	4.8
Paraguay										
Pills	1973	1.9	14.3	15.2	17.0	13.1	15.1	8.1	14.6	3.6
IUD	1973		19.5	25.2	15.2	11.9	13.4	7.4	7.4	2.8
All mothers	1962	—	17.5	15.5	13.4	11.6	9.9		—32.1—	3.8
Puerto Rico										
All methods	1973	11.7	44.7		—28.7—		—10.5—		— 4.3—	3.2

Sources: Same as for table 136; for India, see Government of India, *Programme Information, 1971–72* (New Delhi).

Note: Data relate to varying periods, i.e., two or more months during the course of the year.

TABLE 139. DISTRIBUTION OF COUNTRIES BY PROPORTION OF ACCEPTORS HAVING THREE OR FEWER CHILDREN AT TIME OF ACCEPTANCE[a]

	Less than 50 per cent having three or fewer children	*More than 50 per cent having three or fewer children*	*More than 90 per cent having three or fewer children*
Africa			
Eastern Africa			
Kenya	X[bc]		
Mauritius		X	
Northern Africa			
Morocco	X		
Tunisia	X[b]		
Western Africa			
Ghana	X		
Nigeria	X		
Latin America			
Caribbean			
Dominican Republic		X[bc]	
Jamaica		X	
Middle America			
Costa Rica		X	
El Salvador		X	
Mexico	X[bc]		
Tropical South America			
Colombia		X	
Ecuador	X[bc]		
Venezuela	X		
Asia			
East Asia			
Hong Kong			X[bc]
Republic of Korea	X[bc]		
Eastern South Asia			
Indonesia		X	
Peninsular Malaysia		X	
Philippines		X	
Singapore			X
Thailand		X[bc]	
Middle South Asia			
India	X[bd]		
Iran		X[c]	
Nepal		X[bc]	
Sri Lanka		X[b]	
Western South Asia			
Turkey		X[b]	

Source: Table 137.

[a] Each entry per country relates to one specific year during the period 1970–1974.

[b] IUDs only.

[c] Pills only.

[d] Sterilization only.

TABLE 140. DISTRIBUTION OF COUNTRIES, BY FAMILY SIZE OF WOMEN AT ACCEPTANCE OF AN INDIVIDUAL METHOD OR OF ALL METHODS COMBINED

	Modal family size at acceptance			
	0 to 1 child	*2 children*	*3–5 children*	*6 children or more*
1. Countries in which percentage of acceptors with 3 children or less is 90 per cent or more at acceptance ..	Hong Kong[a] Singapore			
2. Countries in which percentage of acceptors with 3 children or less at acceptance is between 50 and 90 per cent	Mauritius Dominican Republic[a] Jamaica El Salvador Costa Rica Colombia Ecuador[a] Indonesia Peninsular Malaysia[a] Thailand[a]	Hong Kong[b] Thailand[b] Iran[a] Sri Lanka[b] Turkey[b] Nepal[b]		Philippines[c] India[bc]
3. Countries in which percentage of acceptors with 3 children or less at acceptance is less than 50 per cent			Iran[b] Republic of Korea	Kenya[ab] Morocco Tunisia Ghana Nigeria Dominican Republic[b] Mexico[c] Colombia[b] Ecuador[b] Venezuela West Malaysia[bd] India[cd] Nepal[d] Sri Lanka[d]

Sources: Same as for table 137.

[a] Pills only.
[b] IUDs only.
[c] Five or more children.
[d] Sterilization only.

TABLE 141. PERCENTAGE DISTRIBUTION OF FAMILY PLANNING ACCEPTORS AND WOMEN IN THE POPULATION, BY LITERACY STATUS OR EDUCATIONAL ATTAINMENT

		Percentage distribution by literacy status or educational attainment			
Method	*Year*	*Illiterate*	*Literate*	*School pass*	*Graduate*
Nepal					
Pills	1969/70	70.6	22.5	6.5	1.4
Pills	1970/71	72.9	21.4	4.9	0.6
IUD	1969/70	80.6	14.8	3.1	1.0
IUD	1970/71	75.5	18.7	4.4	1.0
Vasectomy	1969/70	24.5	55.3	16.3	3.5
Vasectomy	1970/71	35.2	52.9	10.1	2.1
Female population aged 15 years or more	1961	98.0	——————2.0——————		
		No schooling	*Primary school*	*Secondary school*	*College*
Malaysia					
All methods	1967	38.1	35.4	26.3	0.3
	1968	27.7	41.5	30.6	0.1
	1969	29.8	46.1	24.0	0.3
	1971	27.5	58.4	13.9	0.2
Pill	1971	25.9	59.8	14.3	0.3
IUD	1971	37.1	47.0	15.5	0.4
Sterilization (of women)	1971	48.8	44.5	6.6	0.1
Condom	1971	23.7	54.0	22.0	0.2
Vasectomy	1971	31.8	54.7	13.5	—
Total population aged 25–44	1970	31.0	——————69.0——————		

TABLE 141. PERCENTAGE DISTRIBUTION OF FAMILY PLANNING ACCEPTORS AND WOMEN IN THE POPULATION, BY LITERACY STATUS OR EDUCATIONAL ATTAINMENT *(continued)*

Method	*Year*	*Percentage distribution by literacy status or educational attainment*				
		None	*Primary*	*Intermediate school*	*High school*	*College*
Philippines						
All methods	1971	1.5	16.0	39.3	27.4	15.8
Pill	1971	1.5	16.7	40.1	26.7	15.0
IUD	1971	1.7	14.2	37.4	31.8	14.8
Rhythm	1971	1.1	15.4	38.6	25.2	19.6
Female population aged 10 years or more	1970	18.0	——————————82.0——————————			
		Below primary school	*Primary school*	*Secondary school*	*Vocational school*	*Lycée*	*University*
Turkey							
IUD	1965/67	12.8	74.3	7.4	3.1	1.8	0.6
Women aged 15-49	1965	21.7	63.9	5.6	3.9	3.4	1.5

Sources: United States Bureau of the Census, International Statistical Programs Center; *Demographic Yearbook, 1970* (United Nations publication, Sales No. E/F.71.XIII.1); *Demographic Yearbook, 1971* (United Nations publication, Sales No. E/F.72.XIII.1).

Note: Data relate to varying periods, i.e., two or more months during the course of the year.

TABLE 142. AVERAGE ANNUAL RATE OF CHANGE IN NUMBERS OF ACCEPTORS IN 40 COUNTRIES, 1970-1974

Country	*Average annual change of 10 per cent and over*	*Country*	*Average annual change of less than 10 per cent*
Indonesia	+55.0	Nicaragua	+ 9.6
El Salvador	+46.6	Mauritius	+ 8.2
Gambia	+37.1	Jamaica	+ 6.1
Nigeria	+36.9	Singapore	+ 5.1
Ghana	+35.4	Peninsular Malaysia	+ 2.4
Philippines	+34.1	Honduras	+ 2.3
Ecuador	+33.6	Guatemala	+ 0.35
Paraguay	+31.0	Turkey	+ 0.29
Chile	+30.0	Hong Kong	+ 0.18
Mexico	+28.6	India	- 0.65
Venezuela	+24.2	Republic of Korea	- 7.6
Nepal	+23.9	Puerto Rico	- 9.0
Afghanistan	+22.3	Egypt	- 9.1
Panama	+21.9	Trinidad and Tobago	-15.9
Botswana	+21.8	Pakistan	-25.0
Dominican Republic	+20.3		
Costa Rica	+19.9		
Thailand	+19.6		
Morocco	+19.5		
Sri Lanka	+18.4		
Uganda	+15.9		
Tunisia	+15.5		
Colombia	+12.4		
Kenya	+11.6		
Iran	+11.5		

Sources: Same as for table 132.

TABLE 143. ESTIMATES OF NET MIGRATION AND NET MIGRATION RATES IN SELECTED COUNTRIES OF NORTHERN AMERICA, EUROPE AND OCEANIA, 1950–1974

	Estimated net migration (thousands)			*Average annual net migration per 1,000 population*		
	1950–1960	*1960–1970 (mid year to mid year)*	*1970–1974*	*1950–1960*	*1960–1970 (mid year to mid year)*	*1970–1974*
Northern America	+4 086	+4 629	+1 795	+ 2.2	+ 2.2	+ 1.9
Canada	+1 105	+ 697	+ 389	+ 6.9	+ 3.6	+ 4.4
United States of America[a]	+2 981	+3 932	+1 406	+ 1.8	+ 2.0	+ 1.7
Europe	−3 011	− 66	+ 911	− 0.7	− 0.0	+ 0.5
Eastern Europe	−2 741	−1 031	− 158	− 3.0	− 1.0	− 0.4
Bulgaria	− 163	− 15	− 32	− 2.2	− 0.2	− 0.9
Czechoslovakia	−	− 174	− 9	− 0.0	− 1.2	− 0.2
German Democratic Republic	−2 056	− 433	− 21	−11.6	− 2.5	− 0.3
Hungary	− 164	+ 9	−	− 1.7	+ 0.1	− 0.0
Poland	− 220	− 306	− 57	− 0.8	− 1.0	− 0.4
Romania	− 138	− 112	− 39	− 0.8	− 0.6	− 0.2
Northern Europe	− 500	− 278	− 83	− 0.7	− 0.4	− 0.3
Denmark	− 52	+ 20	+ 22	− 1.2	+ 0.4	+ 1.1
Finland	− 73	− 164	+ 13	− 1.7	− 3.6	+ 0.7
Ireland	− 397	− 161	− 12	−13.7	− 5.6	− 1.0
Norway	− 14	+ 4	+ 12	− 0.4	+ 0.1	+ 0.8
Sweden	+ 93	+ 204	+ 7	+ 1.3	+ 2.6	+ 0.2
United Kingdom	− 57	− 181	− 125[a]	− 0.2	− 0.3	− 0.6
Southern Europe	−3 475	−3 676	−1 083	− 3.1	− 3.1	− 2.1
Greece	− 196	− 364	− 91	− 2.5	− 4.3	− 2.6
Italy	−1 166	− 792	− 44[b]	− 2.4	− 1.5	− 0.0
Malta	− 43	− 35	− 9	−13.4	−10.8	− 7.0
Portugal	− 662	−1 234	− 273	− 7.7	−14.0	− 7.8
Spain	− 826	− 551	− 316	− 2.8	− 1.7	− 2.3
Yugoslavia	− 582	− 700[c]	− 350[c]	− 3.3	− 3.6	− 4.3
Western Europe	+3 705	+4 919	+2 235	+ 2.9	+ 3.5	+ 3.7
Austria	− 141	+ 38	+ 67	− 2.0	+ 0.5	+ 2.2
Belgium	+ 59	+ 152	+ 67	+ 0.7	+ 1.6	+ 1.7
France	+1 080	+2 177[a]	+ 505	+ 2.5	+ 4.5	+ 2.4
Germany, Federal Republic of	+2 546	+2 047	+1 439	+ 4.8	+ 3.5	+ 5.9
Luxembourg	+ 7	+ 15	+ 16	+ 2.3	+ 4.6	+11.5
Netherlands	− 142	+ 92	+ 104	− 1.3	+ 0.8	+ 2.0
Switzerland	+ 296	+ 398	+ 37	+ 5.9	+ 6.8	+ 1.5
Oceania	+ 933	+ 924	+ 301	+ 8.2	+ 6.6	+ 4.8
Australia	+ 831	+ 881	+ 236	+ 9.0	+ 7.7	+ 4.6
New Zealand	+ 102	+ 43	+ 65	+ 4.8	+ 1.7	+ 5.6

Sources: National statistics. Except as noted, net migration was calculated by subtracting natural increase from total population change during the period.

Note: 0.0 = rate negligible.

[a] Official estimates.

[b] Based on official migration statistics of Italy.

[c] Based on statistics of countries receiving Yugoslav migrants.

TABLE 144. IMMIGRANTS AND EMIGRANTS, SELECTED COUNTRIES, 1950–1974

(Thousands)

	Africa									Latin America		Northern America	
	South Africa (Whites)			Southern Rhodesia						Argentina[c]	Brazil	Canada	United States of America[d]
				Africans[a]			Non-Africans[b]						
	Immigrants	Emigrants	Net migration	Immigrants	Emigrants	Net migration	Immigrants	Emigrants	Net migration	Immigrants	Immigrants	Immigrants	Immigrants
1950–1954	95.4	61.4	+ 34.0	...	...	...	67.0	...	...	369.2	335.1	755.9	1 099.0
1955–1959	73.0	54.5	+ 18.5	533.9	551.4	−17.5	74.0	39.0	+35.0	110.6	247.9	802.0	1 400.2
1960–1964	126.0	52.1	+ 73.9	287.2	325.4	−38.2	38.1	62.9	−24.8	36.7	149.1	456.1	1 419.0
1965–1969	207.3	51.0	+156.3	95.9	124.8	−29.0	50.8	37.2	+13.6	19.5	48.5	909.9	1 794.7
1970–1974	175.4	39.4	+136.0	50.4	72.6	−22.2	60.6	33.7	+26.9	...	34.7	794.3	1 923.4
1970	41.5	9.3	+ 32.2	13.0	22.3	− 9.3	12.3	6.0	+ 6.3	6.3	6.9	147.7	373.3
1971	35.8	8.4	+ 27.4	10.5	20.2	− 9.7	14.9	5.4	+ 9.5	7.4	6.4	121.9	370.5
1972	32.8	7.9	+ 24.9	8.6	16.3	− 7.7	14.1	5.2	+ 8.8	...	8.8	122.0	384.7
1973	29.4	6.4	+ 23.0	11.3	7.4	+ 3.9	9.5	7.9	+ 1.6	...	5.9	184.2	400.1
1974	35.9	7.4	+ 28.5	7.0	6.5	+ 0.5	9.8	9.2	+ 0.6	...	6.8	218.5	394.9

	Asia		Europe											
			Southern Europe											
	Cyprus	Israel	Greece			Italy			Malta			Spain[e]	Portugal	
	Emigrants	Immigrants	Immigrants	Emigrants	Net migration	Immigrants	Emigrants	Net migration	Immigrants	Emigrants	Net migration	Emigrants	Emigrants[f] (except to Portuguese Territories)	Balance of passenger movements to Portuguese Territories[g]
1950–1954	...	399.4	...	...	...	471.1	1 246.5	−775.4	3.9	37.5	−33.6	293.5	184.5	−57.4
1955–1959	29.1	215.9	...	143.8	...	732.3	1 507.3	−775.0	4.3	23.2	−18.9	276.1	165.5	−64.2
1960–1964	42.4	252.6	...	396.3	...	1 042.8	1 672.7	−629.9	2.4	26.6	−24.2	157.1	244.6	−45.8
1965–1969	14.9	106.0	...	389.2	...	875.5	1 206.3	−330.8	1.4	22.0	−20.6	346.4	541.0	−46.0
1970–1974	10.6	159.9	121.7	249.8	−128.1	651.2	697.2	− 46.0	1.4	16.9	−15.5	509.2	629.6	+88.9
1970	2.3	21.2	22.7	92.7	− 70.0	142.5	151.9	− 9.4	0.3	2.7	− 2.4	114.4	180.1	− 3.5
1971	2.3	26.1	24.7	61.7	− 37.0	128.6	167.7	− 39.1	0.2	2.8	− 2.6	128.1	151.2	− 2.3
1972	1.3	43.4	27.5	43.4	− 15.9	138.2	141.8	− 3.6	0.2	3.2	− 3.0	110.1	105.0	− 1.5
1973	1.3	45.0	22.3	27.5	− 5.2	125.2	123.8	+ 1.4	0.2	4.0	− 3.8	101.2	122.8	+15.1
1974	3.3	24.2	24.5	24.5	+ 0.0	116.7	112.0	+ 4.7	0.5	4.2	− 3.7	55.4	70.6	+81.1

	Europe (continued)																	
	Northern Europe												Western Europe					
	Denmark			Norway			Sweden			United Kingdom[h]			Belgium			Germany, Federal Republic of		
	Immigrants	Emigrants	Net migration	Immigrants	Emigrants	Net migration	Immigrants	Emigrants	Net migration	Immigrants	Emigrants	Net migration	Immigrants	Emigrants	Net migration	Immigrants	Emigrants	Net migration
1950–1954	101.0	117.3	−16.3	...	...	...	125.8	75.7	+50.1	...	...	...	214.6	190.6	+ 24.0	2 160.0[j]	1 009.4[j]	+1 150.6[j]
1955–1959	108.4	140.5	−32.1	41.1[i]	45.6[i]	−4.5[i]	132.3	72.3	+60.0	...	...	...	251.9	181.6	+ 70.3	2 686.2[j]	1 079.7[j]	+1 606.6[j]
1960–1964	136.2	124.7	+11.5	62.1	67.4	−5.3	146.1	76.1	+70.0	...	...	...	296.0	174.4	+121.6	3 419.1	1 865.9	+ 1 553.3
1965–1969	153.3	146.1	+ 7.2	71.0	67.6	+3.4	227.0	99.2	+127.8	1 077.7	1 465.3	−387.6	327.9	207.5	+120.4	3 715.7	2 566.8	+1 148.9
1970–1974	179.8	153.9	+25.9	91.7	73.2	+18.5	216.7	178.5	+38.2	1 026.7	1 278.7	−252.0	323.4	206.8	+116.6	4 560.9	2 850.7	+1 710.2
1970	38.6	27.0	+11.6	17.4	18.3	−0.9	77.3	28.7	+48.7	225.6	290.7	− 65.1	62.1	45.6	+ 16.5	1 072.4	498.4	+ 574.0
1971	35.0	31.6	+ 3.4	19.3	12.7	+6.6	42.6	39.6	+ 3.0	199.7	240.0	− 40.3	62.7	37.3	+ 25.4	987.7	557.0	+ 430.7
1972	31.2	25.8	+ 5.4	18.4	14.0	+4.4	29.9	41.6	−11.7	221.9	233.3	− 11.3	62.5	42.7	+ 19.8	903.1	572.3	+ 330.8
1973	41.9	29.7	+12.2	17.4	13.9	+3.5	29.4	40.3	−10.9	195.7	245.8	− 50.1	64.2	40.4	+ 23.8	967.9	583.9	+ 384.0
1974	33.1	39.8	− 6.7	19.2	14.3	+4.9	37.4	28.4	+ 9.1	183.8	269.0	− 85.2	71.9	40.8	+ 31.1	629.8	639.1	− 9.3

TABLE 144. IMMIGRANTS AND EMIGRANTS, SELECTED COUNTRIES, 1950–1974 (*continued*)

	Western Europe (continued)											*Oceania*					
	France				*Luxembourg*			*Netherlands*			*Switzerland*	*Australia*			*New Zealand*[m]		
	Immigrant workers and family members (except Algerians)	*Repatriations of French nationals*	*Net migration Algerians*	*Net migration Total*	*Immigrants*	*Emigrants*	*Net migration*	*Immigrants*	*Emigrants*	*Net migration*	*Residence permits issued for the first time to foreigners authorized to work*[k]	*Immigrants*	*Emigrants*	*Net migration*	*Immigrants*	*Emigrants*	*Net migration*
1950–1954	121.6[e]	—	—	+ 155	—	—	—	227.2	327.9	−100.8	367.0	613.8	140.9	+472.9	116.5	37.4	+79.1
1955–1959	362.9[e]	339	+ 49	+ 780	56.8	46.0	+10.8	259.1	292.6	− 33.5	508.1	607.2	199.7	+407.5	115.3	51.2	+64.1
1960–1964	715.2	950	+167	+1 580	57.2	43.0	+14.2	288.7	256.1	+ 32.6	818.3	709.2	302.5	+406.7	156.5	75.1	+81.4
1965–1969	929.8	20	+ 95	+ 577	43.7	34.1	+ 9.6	355.0	301.6	+ 53.4	498.9	1 039.9	472.0	+567.9	155.0	127.8	+27.2
1970–1974	982.9	—	+138	+ 634	50.3	30.9	+19.4	445.7	305.9	+139.8	272.3	1 094.8	641.8	+453.0	274.8	197.0	+77.8
1970	255.2	—	+ 45	+ 180	7.4	6.3	+ 1.1	90.8	57.4	+ 33.5	70.4	258.6	120.2	+138.4	39.4	38.2	+ 1.2
1971	217.5	—	+ 35	+ 145	10.0	5.0	+ 5.0	95.1	62.0	+ 33.0	52.5	233.8	130.3	+103.6	45.1	37.5	+ 7.6
1972	173.0	—	+ 25	+ 109	9.6	6.4	+ 3.2	+81.3	62.2	+ 19.1	+56.3	193.3	137.0	+ 56.3	54.7	35.5	+19.2
1973	204.7	—	+ 25	+ 120	11.6	6.7	+ 4.9	84.7	63.6	+ 21.1	54.3	197.4	129.9	+ 67.5	69.8	42.3	+27.5
1974	132.5	—	+ 8	+ 80	11.6	6.5	+ 5.1	93.8	60.7	+ 33.1	38.8	211.6	124.4	+ 87.2	65.9	43.5	+22.4

Sources: National statistical publications and *Demographic Yearbook* migration questionnaires.

[a] Non-Rhodesian men only.

[b] For 1955–1963, data are official estimates for European population only.

[c] Data for all periods refer to "permanent" immigrants.

[d] Years ending 30 June.

[e] Series lacks comparability.

[f] Adjusted to include clandestine emigration to France.

[g] Including passenger movements by sea only before 1971; beginning in 1971 also including passengers travelling on the Portuguese airline, TAP.

[h] Excluding migration between the United Kingdom and the Republic of Ireland.

[i] 1956–1959.

[j] Excluding Berlin.

[k] Excluding seasonal and frontier workers.

[l] Count of family members incomplete.

[m] Years running from 1 April to 31 March.

TABLE 145. FOREIGN-BORN POPULATION, SELECTED COUNTRIES, BY REGION, RECENT CENSUSES

	Year	Total population (thousands)	Foreign-born (thousands)	Foreign-born as percentage of total
Africa				
Angola[a]	1960	4 604.4	3.9	0.1
Gambia	1963	315.5	35.6	11.3
Ghana	1970	8 559.3	349.9	4.1
Kenya	1969	10 942.7	158.7	1.5
Liberia	1962	1 016.4	31.6	3.1
Malawi	1966	4 039.6	294.5	7.3
Nigeria	1963	55 670.1	101.5	0.2
Senegal	1960–61	3 109.8	169.7	5.5
Sierra Leone	1963	2 180.4	52.6	2.4
South Africa[a]	1970	15 036.4	490.1	3.3
Southern Rhodesia[a]	1969	4 846.9	337.8	7.0
Sudan	1956	10 262.5	247.1	2.4
Swaziland	1966	374.6	39.6	10.6
Togo	1970	1 950.6	143.6	7.4
Uganda[a]	1969	9 456.5	751.8	7.9
United Republic of Tanzania	1967	12 305.6	451.7	3.7
Zaire	1970	21 637.9	932.0[b]	4.3[b]
Zambia	1969	4 057.0	238.9	5.9
Latin America				
Argentina	1970	23 362.2	2 180.9	9.3
Brazil	1970	93 139.0	1 229.1	1.3
Chile	1970	8 853.1	94.3	1.1
Colombia	1973	19 735.3	64.7	0.3
Costa Rica	1973	1 871.8	22.3	1.2
Ecuador	1962	4 514.8	27.9	0.6
El Salvador	1971	3 554.6	24.5	0.7
Guatemala	1964	4 288.0	49.5	1.2
Honduras	1961	1 884.8	51.2[b]	2.7[b]
Mexico	1970	48 381.5	191.2	0.4
Nicaragua	1963	1 535.6	13.1	0.9
Panama	1970	1 428.1	48.4	3.4
Paraguay	1972	2 358.0	81.1	3.4
Peru	1972	13 538.2	67.2	0.5
Puerto Rico	1970	2 712.0	52.8	1.9
Surinam	1964	324.2	20.9	6.5
Uruguay	1963	2 595.5	208.7	8.0
Venezuela	1971	10 721.5	596.5	5.6
Northern America				
Canada	1971	21 568.3	3 295.5	15.3
United States of America	1970	203 193.8	9 739.7	4.8
Asia				
Bahrain	1971	216.1	37.9	17.5
Hong Kong	1971	3 936.6	1 716.0	43.6
Iran	1966	25 078.9	57.1	0.2
Israel	1972[c]	2 686.7	1 414.4	52.6
Japan	1970	104 665.2	604.3[b]	0.6[b]
Kuwait	1970	738.7	391.3	53.0
Malaysia	1970	10 319.3	764.4	19.9
Peninsular Malaysia		8 780.7	676.0	7.7
Sabah		651.3	53.1	8.2
Sarawak		887.3	35.3	4.0
Nepal	1971	11 556.0	337.4	2.9
Pakistan	1961	90 282.7	6 278.6	7.0
Philippines	1960	26 868.0	11.4	0.04
Republic of Korea	1970	31 435.3	181.2	0.6
Singapore	1970	2 074.5	528.1	25.5
Sri Lanka	1963	10 582.1	248.2	2.4
Thailand	1970	34 397.4	349.6	1.0
Turkey	1965	31 391.4	903.1	2.9

TABLE 145. FOREIGN-BORN POPULATION, SELECTED COUNTRIES, BY REGION, RECENT CENSUSES *(continued)*

	Year	Total population (thousands)	Foreign born (thousands)	Foreign-born as percentage of total
Europe				
Austria	1971	7 456.4	176.8[b]	2.3[b]
Belgium	1970	9 650.9	740.1	7.7
Denmark	1965	4 768.1	100.2	2.1
Finland	1970	4 598.3	32.5	0.7
France	1968	49 755.8	5 047.8	10.1
Germany, Federal Republic of	1970	60 650.6	2 600.6[b]	4.3[b]
Luxembourg	1966	334.8	56.7[b]	16.9[b]
Netherlands	1960	11 462.0	448.6	3.9
Poland	1970	32 642.3	2 087.1	6.4
Romania	1966	19 103.2	329.0	1.7
Sweden	1970	8 076.9	537.6	6.7
Switzerland	1970	6 269.8	1 080.1[b]	17.2[b]
United Kingdom	1971	53 978.6	2 983.1	5.5
Yugoslavia	1971	20 523.0	158.3	0.8
Oceania				
Australia	1971	12 755.6	2 579.3	20.2
New Zealand	1971	2 862.6	418.5	14.6

Sources: National statistical publications and United Nations, *Demographic Yearbook*, various issues.

[a] African population only.

[b] Foreign nationals.

[c] Jewish population only.

TABLE 146. IMMIGRANTS TO SELECTED COUNTRIES OF NORTHERN AMERICA AND OCEANIA, BY REGION OF LAST RESIDENCE, 1950–1974
(Thousands)

Region, country and period	Total	Region of last residence				
		Europe	Asia	Africa	Latin America	Other
Northern America						
Canada						
1950–1954	755.9	671.0	19.3	2.9	10.1	52.6
1955–1959	802.0	680.0	20.7	6.8	16.6	78.0
1960–1964	456.1	340.0	19.3	9.3	15.9	71.5
1965–1969	909.9	623.4	91.5	20.5	53.7	120.8
1970–1974	794.3	338.4	161.5	33.4	118.1	142.8
United States of America[a]						
1950–1954	1 099.0	716.3	35.7	4.9	173.8[b]	168.4
1955–1959	1 400.2	688.6	96.2	8.2	394.6[b]	212.6
1960–1964	1 419.0	547.2	108.7	9.6	503.6[b]	250.0
1965–1969	1 794.7	586.1	250.1	14.2	737.5[b]	206.9
1970–1974	1 923.4	459.2	552.1	29.2	769.8[b]	113.2
Oceania						
Australia						
1950–1954	613.8	538.8	32.7	10.9	0.7	30.8
1955–1959	607.2	509.4	38.8	10.8	1.0	47.1
1960–1964	709.3	552.0	51.0	19.7	2.5	84.1
1965–1969	1 039.9	746.0	86.8	27.0	6.8	173.3
1970–1973	883.1	524.0	114.3	28.9	19.9	196.0
New Zealand[c]						
1950–1954	116.5	80.5	4.7	1.2	...	30.1[d]
1955–1959	115.3	73.1	4.5	1.6	...	36.1[d]
1960–1964	156.5	79.9	6.4	3.4	...	66.8[d]
1965–1969	155.0	74.5	8.0	1.2	...	71.4[d]
1970–1973	208.9	89.2	11.4	3.8	...	104.5[d]

Sources: National statistics and *Demographic Yearbook* migration questionnaire.

[a] For years running from July to June.

[b] Excluding immigration from Puerto Rico.

[c] For years running from April to March.

[d] Including Latin America.

TABLE 147. ESTIMATED NUMBERS OF IMMIGRANTS FROM DEVELOPING REGIONS, SELECTED INDUSTRIALIZED COUNTRIES, BY REGION OF ORIGIN, 1960 AND 1974

(Thousands)

Region of origin	Total		Northern America and Oceania[a]		Northern and Western Europe[b]	
	1960	1974	1960	1974	1960	1974
Total	3 250	9 475	2 150	5 300	1 100	4 175
Africa	525	1 900	50	200	475	1 700
Asia	925	3 725	525	1 700	400	2 025
Latin America	1 775	3 800	1 550[c]	3 350[c]	225	450
Oceania[d]	25	50	25	50	–	–

Source: United Nations estimates based on census data and annual migration statistics.

[a] Australia, Canada, New Zealand and United States of America.

[b] Austria, Belgium, France, Germany, Federal Republic of, Luxembourg, Netherlands, Sweden, Switzerland and United Kingdom.

[c] Including Puerto Rican immigrants in the United States.

[d] Other than Australia and New Zealand.

TABLE 148. MIGRATION OF PROFESSIONAL, TECHNICAL AND RELATED WORKERS FROM LESS DEVELOPED COUNTRIES TO CANADA, THE UNITED KINGDOM AND THE UNITED STATES OF AMERICA, FROM EARLY 1960S TO 1972

Region of origin	Total			Scientists and engineers			Physicians and surgeons			Teachers[a]	
	Canada 1963–1972	United Kingdom 1964–1972	United States of America 1962–1972[a]	Canada 1963–1972	United Kingdom 1964–1972	United States 1962–1972[a]	Canada 1963–1972	United Kingdom[b] 1964–1972	United States[c] 1962–1972[a]	Canada 1963–1972	United Kingdom 1964–1972
Total	37 653	60 428	73 284	10 646	8 384	48 242	15 915	29 467	25 042	11 092	22 577
Asia	19 979	23 685	51 947	6 132	3 239	35 708	8 792	11 628	16 239	5 055	8 818
Africa	1 326	10 176	3 246	523	1 035	2 334	302	3 845	912	501	5 296
Latin America	565	2 393	12 678	207	1 402	6 974	199	495	5 704	159	496
Other[e]	15 783	24 174	5 413	3 784	2 708	3 226	6 622	13 499	2 187	5 377	7 967

Sources: Compiled from International Labour Office, *Employment, Growth and Basic Needs: A One-World Problem* (Geneva, 1976), p. 130, table 14. For Canada, D. DeVoretz and M. Maki, "The brain drain and income taxation: Canada", in Jagdish Bhagwati and M. Partington, eds., *Taxing the Brain Drain: A Proposal* (Amsterdam, North-Holland Publishing Co., 1976), table 1. For the United Kingdom, P. Balacs and A. Gordon, "The brain drain and income taxation: a United Kingdom case study", in Jagdish Bhagwati and M. Partington, eds., *op. cit.*, table 6. For the United States of America, 1962–1969. Jagdish Bhagwati and William Dellalfar, "The brain drain and income taxation", in *World Development*, vol. I, Nos. 1 and 2 (February 1973), p. 98, table 1; for 1971–1972, National Science Foundation, *Immigrant Scientists and Engineers in the United States. A Study of Characteristics and Attitudes* (Washington, D.C., 1973), p. 2.

[a] Data not available for the United States of America.

[b] Doctors, dentists and nurses.

[c] Including dentists, graduate nurses, medical and dental technicians.

[d] Excluding 1970.

[e] Including Greece, Portugal, Turkey and Yugoslavia.

TABLE 149. MIGRANT WORKERS, BY COUNTRY OF ORIGIN, SELECTED COUNTRIES OF NORTHERN AND WESTERN EUROPE, 1974

(Thousands)

Country of employment	Region and country of origin												Migrant workers as percentage of economically active population
	Southern Europe					Northern Africa			Turkey	Other	Citizen immigrants	Total	
	Greece	Italy	Portugal	Spain	Yugoslavia	Algeria	Morocco	Tunisia					
Austria	...	...	...	...	166	...	...	...	30	23	...	218	7
Belgium[a]	9	90	3	28	...	2	16	1	7	101	...	257	7
France	5	220	385	260	58	450	145	85	33	189	125[b]	1 955	9
Germany, Federal Republic of	225	370	85	165	470	2	15	11	590	417	...	2 350	9
Netherlands	2	10	4	20	9	...	24	1	33	61	50[c]	215	5
Sweden[d]	10	4	...	...	24	...	...	...	...	184	...	222	6
Switzerland	6	338	4	83	28	...	...	...	17	234	...	711	24
TOTAL	257	1 032	481	556	755	454	200	98	710	1 209	175	5 928	9
Migrant workers as percentage of economically active population	8	6	14	5	9	12	5	7	5				

Source: National statistics as quoted in International Labour Office, *Employment, Growth and Basic Needs; a One-World Problem* (Geneva, 1976), p. 127, table 13.

[a] From the population census of 31 December 1970.

[b] From French overseas departments and territories.

[c] From Surinam and Netherlands Antilles.

[d] 1 July 1973.

TABLE 150. PERCENTAGE DISTRIBUTION OF FOREIGN AND NATIONAL MANUAL WORKERS IN FRANCE AND THE FEDERAL REPUBLIC OF GERMANY, BY SKILL LEVELS

	France (1968)		Germany, Federal Republic of	
Skill level	*Foreigners*	*French nationals*	*Foreign males*	*All males*
Total	100[a]	100[a]	100	100
Foremen	2	5	20	53
Skilled	27	38		
Semi-skilled	32	37	48	33
Unskilled	39	20	32	14

Source: Compiled from W. R. Böhning, "Mediterranean workers in Western Europe: effects on home countries and countries of employment", ILO World Employment Programme working paper (WEP 2.26/WP.2), p. 33.

[a] Excluding miners.

TABLE 151. PERCENTAGE DISTRIBUTION OF MIGRANT WORKERS, SELECTED COUNTRIES OF EUROPE, BY INDUSTRY, RECENT YEARS

Industry	*Belgium 1971*	*France 1971*	*Germany, Federal Republic of 1973*	*Netherlands 1973*	*Sweden 1973*	*Switzerland 1973*
Total	100[a]	100	100	100	100[a]	100[a]
Agriculture	—	6	1	1	3	2
Mining and quarrying	18	3	3	2	1	1
Building and public works	12	31	16	6	5	11
Manufacturing	43	33	60	82	59	52
Commerce	27	10	6	1	2	9
Services		17	14	8	30	25

Source: J. H. Lasserre-Bigorry, "General survey of main present day international migration for employment", General Conditions of Work Series, No. 34, *Migrant Workers*, Geneva, July 1975. Some later revisions are incorporated in the figures shown here.

[a] Insufficiently described activities, amounting to 2 per cent or less of the total, have been distributed proportionally among the other categories.

TABLE 152. EMIGRANTS FROM ITALY, PORTUGAL AND SPAIN TO LATIN AMERICA, 1950–1974
(Thousands)

	Total	*Italy*	*Portugal*	*Spain*
1950–1954	868.8	406.9	170.3	291.6
1955–1959	589.4	198.9	117.6	272.9
1960–1964	262.9	42.8	79.3	140.8
1965–1969	141.2	15.5	37.1	88.6
1970–1974	76.8	17.3	23.8	35.7

Source: National statistical publications of Italy, Portugal and Spain.

TABLE 153. ESTIMATED NON-NATIONAL AFRICAN POPULATION, SELECTED COUNTRIES OF WESTERN AND MIDDLE AFRICA, BY COUNTRY OF ORIGIN, 1975

(Thousands)

Country of origin	*Country of immigration*													*Emigrants as percentage of*	
	Benin	*Equatorial Guinea*	*Gambia*	*Ghana*	*Guinea-Bissau*	*Ivory Coast*	*Liberia*	*Sao Tome and Principe*	*Senegal*	*Sierra Leone*	*Togo*	*Other African countries*	*Total*	*Total population*	*Economically active population*
Benin		...	...	25	...	50	...	...	...	...	30	45	150	5	10
Cape Verde	...	...	...	...	40	...	...	3	50	...	...	2	95	32	107
Gambia	...	...		...	...	...	...	...	...	5	...	15	20	4	8
Guinea	30	...	5	...	30	130	20	...	25	40	...	40	320	7	16
Mali	25	...	10	30	5	200	...	...	40	...	...	90	400	7	13
Mauritania	...	...	...	...	...	...	...	...	150	...	...	20	170	13	43
Niger	50	...	...	30	...	100	...	...	...	...	10	60	250	5	17
Sao Tome and Principe	...	...	...	...	...	...	...		...	...	...	5	5	6	19
Senegal	25	...	25	...	10	50	...	...		...	...	65	175	4	9
Togo	20	...	...	280	...	50	5	...	...	...		25	380	17	40
Upper Volta	...	...	...	230	...	700	...	...	...	...	...	70	1 000	17	30
Other African countries	50	35	10	305	5	120	25	17	35	55	60	...	[a]	[a]	[a]
Total of specified countries of emigration													2 965	9	20
												Total of specified countries of immigration			
Total	200	35	50	900	90	1 400	50	20	300	100	100	[a]	3 245		
Non-national African population as percentage of:															
Total population	7	11	10	9	17	29	3	25	7	3	4	[a]	11		
Economically active population	14	33	20	24	54	55	7	77	16	9	11	[a]	25		

Source: Estimates of the International Labour Office.

[a] Because of the small numbers of migrants to and from "other African countries" in relation to their total population, data for these countries are not shown and are excluded from the totals.

TABLE 154. ESTIMATED NUMBER OF REFUGEES IN AFRICA OF CONCERN TO THE UNITED NATIONS HIGH COMMISSIONER FOR REFUGEES AS OF 31 DECEMBER 1975

Country of asylum	*Country of origin*	*Number of refugees*	
Botswana	Angola	1 100	
	others	700	1 800
Burundi	Rwanda		48 500
Central African Empire, Chad, Congo, Gabon and United Republic of Cameroon	Equatorial Guinea	90 000	
	Angola	5 000	101 000
	others	6 000	
Ethiopia	Most from Sudan		11 000
Kenya	Various African countries		2 450
Lesotho	South Africa		187
Rwanda	Burundi		7 400
Senegal	Guinea-Bissau		50 000
Sudan	Ethiopia	91 000	95 500
	Zaire	4 500	
Uganda	Rwanda	78 000	112 500
	Zaire	34 500	
United Republic of Tanzania	Burundi	110 500	
	Mozambique	33 700	171 000
	Rwanda	23 100	
	Others	3 700	
Zaire	Angola	460 000	
	Burundi	24 000	509 050
	Rwanda	24 300	
	Zambia	750	
Zambia	Angola	30 000	36 000
	others	6 000	

Source: Office of the United Nations High Commissioner for Refugees.

TABLE 155. ESTIMATED NUMBERS OF PERSONS BORN IN SELECTED COUNTRIES OF LATIN AMERICA AND LIVING IN SPECIFIED COUNTRIES ABROAD, 1974

Country of birth	*Estimated number living in specified countries abroad (thousands)*	*Percentage of total population of country of birth*
Colombia	90[a]	0.3
Cuba	530[a]	6
Dominican Republic	115[a]	2
Ecuador	55[a]	1
Haiti	50[a]	1
Jamaica	320[b]	16
Mexico	1 025[a]	2
Panama	25[a]	2
Puerto Rico	720[a]	25
Surinam	65[c]	16
Trinidad and Tobago	85[d]	8

Source: United Nations estimates based on census data and immigration statistics of receiving countries.

[a] In the United States of America only.

[b] About 30,000 in Canada, 167,000 in the United Kingdom and 123,000 in the United States of America.

[c] Net number of immigrants to the Netherlands in 1960–1974.

[d] About 19,000 in Canada, 17,000 in the United Kingdom and 49,000 in the United States of America.

TABLE 156. FOREIGN-BORN POPULATION, SELECTED COUNTRIES OF LATIN AMERICA, RECENT CENSUSES

		Foreign-born population (thousands)		Percentage born in other Latin American countries
		Total	Born in other Latin American countries	
Argentina	1970[a]	2 193.3	591.2	27.0
Brazil	1970	1 229.1	72.1	5.9
Honduras	1961	51.2[b]	47.6[b]	92.9[b]
Panama	1970	48.4	32.3	66.8
Paraguay	1962	49.1[b]	29.7[b]	60.6[b]
Puerto Rico	1970	52.8	43.0	81.4
Surinam	1964	20.9	1.2	5.9
Uruguay	1963	208.7	51.7	24.8
Venezuela	1971	596.5	228.8	38.4

Sources: National statistical publications and United Nations, *Demographic Yearbook*, various issues.

[a] Based on sample tabulation of census returns.

[b] Data for foreign nationals.

TABLE 157. ESTIMATED CONTINENTAL IMMIGRANTS, SELECTED COUNTRIES OF SOUTH AMERICA, BY COUNTRY OF ORIGIN, 1974 [a]

(thousands)

Country of origin	Total emigrants	Immigrants by country of immigration						
		Argentina	Brazil	Colombia	Ecuador	Peru	Venezuela	Other
Total emigrants	3 152	1 620	140	120	85	110	820	257
Bolivia	715	500	45	5	5	60	10	90
Brazil	180	70		5	20	5	20	60
Chile	400	350	...	5	...	10	20	15
Colombia	680	...	...		50	5	600	25
Ecuador	115	...	...	60		20	20	15
Paraguay	690	600	70	...	...	...	...	20
Uruguay	115	80	3	...	...	...	...	32
Other	257	20	22	45	10	10	150	...

Source: International Labour Office, *Seminario Regional Departito sobre la Situación de los Trabajadores Migrantes en Sudamerica* (Geneva, 1974), p. 12. Some later revisions are incorporated in the figures shown here.

[a] Including illegal migration.

TABLE 158. ESTIMATED NUMBERS OF PERSONS BORN IN SELECTED COUNTRIES OF ASIA AND LIVING IN OTHER CONTINENTS, 1974

Country of birth	Estimated numbers living in other continents (thousands)	Percentage of total population of country of birth
Cyprus	97	15
India	600	0.1
Japan	315	0.3
Lebanon	140	5
Pakistan	170[a]	0.1
Peninsular Malaysia	40	0.4
Philippines	360	0.8
Republic of Korea	130	0.4
Singapore	35	2
Sri Lanka	30	0.2
Syrian Arab Republic	75	1
Turkey	1 300	3

Source: United Nations estimates based mainly on census data and immigration statistics of receiving countries.

[a] Including Bangladesh.

TABLE 159. TOTAL AND ECONOMICALLY ACTIVE ALIENS, BY COUNTRY OF ORIGIN, SELECTED MEMBER STATES OF THE ORGANIZATION OF PETROLEUM EXPORTING COUNTRIES, RECENT YEARS

(Thousands)

Country of immigration or employment	*Date*	*Category of aliens*	*Country of origin*								*Total aliens*	*Total population*	*Aliens as percentage of total*
			Egypt	*Iraq*	*Jordan*[a]	*Lebanon*	*Oman*	*Syrian Arab Republic*	*Tunisia*	*Other*			
Bahrain	3 April 1971 census	Active	...	...	...	...	...	...	...	...	22.4	60.3	37
		Total	0.6	0.1	1.3	0.3	10.8	0.1	...	24.8[b]	37.9	216.1	18
Kuwait	19–20 April 1970 census	Active	17.7	17.1	41.3	8.4	10.5	12.7	...	67.8	175.4	235.3	75
		Total	30.4	39.1	147.7	25.4	14.7	27.2	...	106.8[c]	391.3	738.7	53
Libyan Arab Jamahiriya	September 1973–July 1974[f]	Active	60.7	...	8.6	8.3	...	6.2	21.4	23.2[d]	128.4	560.0[e]	23
		Total	125.0	...	15.6	7.6	...	10.1	30.5	35.9	224.6	2 346.0[g]	10
Oman	1972[h]	Active	...	...	...	...		...	...	...	5.9[i]	17.3	34
Saudi Arabia	1970[j]	Active	...	...	50	30	...	40	...	280[k]	400	1 200	33

Sources: International Labour Office, based on data in Abdelmegid M. Farrag, "Migration between Arab countries", in *Manpower and Employment in Arab Countries: Some Critical Issues* (Geneva, 1976) and J. A. Socknat, "Labour market conditions and prospects in the Gulf States and Saudi Arabia". Internal report produced for the Government of Bahrain by the Ford Foundation, June 1975.

[a] Also including Palestinians.

[b] Including 6,700 from India, 5,100 from Iran, 5,400 from Pakistan, 1,300 from Saudi Arabia and 1,500 from Yemen and Democratic Yemen.

[c] Including 17,300 from India, 39,100 from Iran, 10,900 from Saudi Arabia and 11,000 from Yemen and Democratic Yemen.

[d] Including 20,300 non-Arabs.

[e] ILO estimate.

[f] Residence permits issued to foreigners.

[g] Official estimate.

[h] Survey of employment in public and private modern sector establishments, including government.

[i] Including 2,600 Indians and 1,900 Pakistanis.

[j] Rough estimates.

[k] Including 200,000–250,000 from Yemen and Democratic Yemen.

TABLE 160. ESTIMATES OF NET MIGRATION AND NET MIGRATION RATES, SELECTED COUNTRIES OF ASIA

	Period[a]	Estimated net migration (thousands)	Average annual net migration per 1,000 population
Hong Kong	1961–1971	+118	+3.2
Peninsular Malaysia	1947–1957	−270	−4.9
	1957–1970	−533	−5.4
Singapore	1947–1957	+109	+9.4
	1957–1970	+ 32	+1.4
Sri Lanka	1953–1963	−122	−1.3
	1963–1971	−156	−1.6

Sources: Computed from data in *Hong Kong Population and Housing Census, Main Report* (Hong Kong, Statistics Department, 1972), p. 9 and United Nations, *Demographic Yearbook*, various issues.

[a] Intercensal periods except for Hong Kong, for which data are from mid year to mid year.

TABLE 161. URBAN AND RURAL POPULATION, PERCENTAGE OF URBAN POPULATION AND AVERAGE ANNUAL GROWTH RATES, MAJOR AREAS, REGIONS AND COUNTRIES, 1950–1975

	Population (thousands) and percentage urban				Average annual growth rates (percentage)		
	1950	1960	1970	1975	1950–1960	1960–1970	1970–1975
World total							
Urban population	718 701	1 010 994	1 354 237	1 560 309	3.41	2.92	2.83
Rural population	1 782 512	1 974 985	2 256 140	2 407 555	1.03	1.33	1.30
Percentage urban	28.73	33.86	37.51	39.32			
More developed regions							
Urban population	459 643	589 926	724 190	789 645	2.50	2.05	1.73
Rural population	397 662	385 822	359 828	342 039	−0.30	−0.70	−1.01
Percentage urban	53.61	60.46	66.81	69.78			
Less developed regions							
Urban population	259 058	421 068	630 047	770 663	4.86	4.03	4.03
Rural population	1 384 850	1 589 162	1 896 312	2 065 517	1.38	1.77	1.71
Percentage urban	15.76	20.95	24.94	27.17			
Africa							
Urban population	30 016	47 895	77 135	97 568	4.67	4.77	4.70
Rural population	188 787	224 900	274 592	303 746	1.75	2.00	2.02
Percentage urban	13.72	17.56	21.93	24.31			
Eastern Africa							
Urban population	3 294	5 691	10 540	13 986	5.47	6.16	5.66
Rural population	58 584	71 502	89 278	100 512	1.99	2.22	2.37
Percentage urban	5.32	7.37	10.56	12.22			
Ethiopia							
Urban population	801	1 323	2 391	3 137	5.02	5.92	5.43
Rural population	15 874	18 701	22 464	24 838	1.64	1.83	2.01
Percentage urban	4.80	6.61	9.62	11.21			
Kenya							
Urban population	335	595	1 113	1 499	5.74	6.26	5.95
Rural population	5 683	7 520	10 134	11 752	2.80	2.98	2.96
Percentage urban	5.57	7.33	9.90	11.31			
Madagascar							
Urban population	339	624	1 066	1 426	6.10	5.36	5.82
Rural population	3 991	4 746	5 866	6 594	1.73	2.12	2.34
Percentage urban	7.83	11.62	15.38	17.78			
Mozambique							
Urban population	130	233	434	584	5.84	6.22	5.94
Rural population	5 612	6 371	7 800	8 655	1.27	2.02	2.08
Percentage urban	2.26	3.53	5.27	6.32			
Southern Rhodesia							
Urban population	236	462	896	1 188	6.72	6.62	5.64
Rural population	2 040	3 076	4 412	5 088	4.11	3.61	2.85
Percentage urban	10.37	13.06	16.88	18.93			

TABLE 161. URBAN AND RURAL POPULATION, PERCENTAGE OF URBAN POPULATION AND AVERAGE ANNUAL GROWTH RATES, MAJOR AREAS, REGIONS AND COUNTRIES, 1950–1975 *(continued)*

	Population (thousands) and percentage urban				*Average annual growth rates (percentage)*		
	1950	*1960*	*1970*	*1975*	*1950–1960*	*1960–1970*	*1970–1975*
Eastern Africa *(continued)*							
Uganda							
Urban population	175	346	684	952	6.82	6.82	6.61
Rural population	5 794	7 205	9 122	10 401	2.18	2.36	2.62
Percentage urban	2.93	4.58	6.98	8.39			
United Republic of Tanzania							
Urban population	286	467	792	1 043	4.90	5.28	5.51
Rural population	7 606	9 606	12 481	14 395	2.33	2.62	2.85
Percentage urban	3.62	4.64	5.97	6.76			
Zambia							
Urban population	273	575	1 321	1 838	7.45	8.32	6.61
Rural population	2 200	2 644	2 974	3 184	1.84	1.18	1.36
Percentage urban	11.04	17.86	30.76	36.60			
Middle Africa							
Urban population	3 256	5 180	8 307	10 438	4.64	4.72	4.57
Rural population	23 002	26 595	32 139	34 872	1.45	1.89	1.63
Percentage urban	12.40	16.30	20.54	23.04			
Angola							
Urban population	230	486	858	1 160	7.48	5.68	6.03
Rural population	3 739	4 237	4 812	5 193	1.25	1.27	1.52
Percentage urban	5.79	10.29	15.13	18.26			
United Republic of Cameroon							
Urban population	368	652	1 185	1 525	5.72	5.97	5.05
Rural population	3 724	4 213	4 651	4 873	1.23	0.99	0.93
Percentage urban	8.99	13.40	20.31	23.84			
Zaire							
Urban population	2 162	3 182	4 694	5 714	3.86	3.89	3.93
Rural population	10 893	12 969	16 944	18 771	1.74	2.67	2.05
Percentage urban	16.56	19.70	21.69	23.34			
Northern Africa							
Urban population	12 032	19 222	31 029	38 932	4.68	4.79	4.54
Rural population	39 774	46 510	54 598	59 253	1.56	1.60	1.64
Percentage urban	23.23	29.24	36.24	39.65			
Algeria							
Urban population	1 877	3 362	6 347	8 385	5.83	6.35	5.57
Rural population	6 876	7 438	7 983	8 407	0.79	0.71	1.04
Percentage urban	21.44	31.13	44.29	49.93			
Egypt							
Urban population	6 527	9 734	14 784	17 906	4.00	4.18	3.83
Rural population	13 934	16 195	18 545	19 637	1.50	1.35	1.14
Percentage urban	31.90	37.54	44.36	47.69			
Morocco							
Urban population	1 846	3 430	5 183	6 655	6.20	4.13	5.00
Rural population	7 107	8 210	9 943	10 849	1.44	1.92	1.74
Percentage urban	20.62	29.47	34.27	38.02			
Sudan							
Urban population	673	1 014	1 848	2 411	4.10	6.00	5.32
Rural population	8 394	10 756	13 847	15 857	2.48	2.53	2.71
Percentage urban	7.42	8.62	11.77	13.20			
Tunisia							
Urban population	913	1 362	2 167	2 665	4.00	4.64	4.14
Rural population	2 617	2 859	2 970	3 082	0.88	0.38	0.74
Percentage urban	25.86	32.27	42.18	46.37			
Southern Africa							
Urban population	5 240	7 587	10 615	12 796	3.70	3.36	3.74
Rural population	9 084	10 619	13 720	15 057	1.56	2.56	1.86
Percentage urban	36.58	41.67	43.62	45.94			
South Africa							
Urban population	5 158	7 428	10 279	12 331	3.65	3.25	3.64
Rural population	7 300	8 497	11 221	12 332	1.52	2.78	1.89
Percentage urban	41.40	46.64	47.81	50.00			
Western Africa							
Urban population	6 194	10 215	16 644	21 416	5.00	4.88	5.04
Rural population	58 344	69 674	84 857	94 053	1.77	1.97	2.06
Percentage urban	9.60	12.79	16.40	18.55			

TABLE 161. URBAN AND RURAL POPULATION, PERCENTAGE OF URBAN POPULATION AND AVERAGE ANNUAL GROWTH RATES, MAJOR AREAS, REGIONS AND COUNTRIES, 1950–1975 (*continued*)

	Population (thousands) and percentage urban				*Average annual growth rates (percentage)*		
	1950	*1960*	*1970*	*1975*	*1950–1960*	*1960–1970*	*1970–1975*
Western Africa *(continued)*							
Ghana							
Urban population	727	1 570	2 510	3 285	7.70	4.69	5.38
Rural population	4 297	5 206	6 118	6 588	1.92	1.61	1.48
Percentage urban	14.47	23.17	29.09	33.27			
Mali							
Urban population	276	403	611	766	3.79	4.16	4.52
Rural population	3 150	3 686	4 436	4 931	1.57	1.85	2.12
Percentage urban	8.06	9.86	12.11	13.45			
Nigeria							
Urban population	3 556	5 596	8 957	11 418	4.53	4.70	4.86
Rural population	30 775	37 351	46 116	51 507	1.94	2.11	2.21
Percentage urban	10.36	13.03	16.26	18.15			
Upper Volta							
Urban population	149	235	388	500	4.56	5.01	5.07
Rural population	3 620	4 165	4 996	5 532	1.40	1.82	2.04
Percentage urban	3.95	5.34	7.21	8.29			
Latin America							
Urban population	67 039	104 579	160 647	195 529	4.45	4.29	3.93
Rural population	96 886	110 998	122 373	128 563	1.36	0.98	0.99
Percentage urban	40.90	48.51	56.76	60.33			
Caribbean							
Urban population	5 513	7 392	11 073	13 068	2.93	4.04	3.31
Rural population	11 212	12 834	13 543	14 048	1.35	0.54	0.73
Percentage urban	32.96	36.55	44.98	48.19			
Cuba							
Urban population	2 866	3 593	5 056	5 839	2.26	3.42	2.88
Rural population	2 886	3 426	3 509	3 642	1.72	0.24	0.74
Percentage urban	49.83	51.19	59.03	61.59			
Dominican Republic							
Urban population	539	940	1 726	2 253	5.56	6.08	5.33
Rural population	1 774	2 220	2 617	2 865	2.24	1.65	1.81
Percentage urban	23.30	29.75	39.74	44.02			
Middle America							
Urban population	14 155	22 462	36 107	45 086	4.62	4.75	4.44
Rural population	21 680	26 227	30 896	33 566	1.90	1.64	1.66
Percentage urban	39.50	46.13	53.89	57.32			
Guatemala							
Urban population	893	1 263	1 721	2 082	3.47	3.09	3.81
Rural population	2 130	2 727	3 577	4 047	2.47	2.71	2.47
Percentage urban	29.54	31.65	32.48	33.97			
Mexico							
Urban population	11 207	18 293	29 845	37 400	4.90	4.89	4.51
Rural population	15 399	18 076	20 468	21 804	1.60	1.24	1.26
Percentage urban	42.12	50.30	59.32	63.17			
Temperate South America							
Urban population	15 987	21 781	28 148	31 314	3.09	2.56	2.13
Rural population	9 450	9 040	7 925	7 433	-0.44	-1.32	-1.28
Percentage urban	62.85	70.67	78.03	80.82			
Argentina							
Urban population	11 011	14 665	18 379	20 300	2.87	2.26	1.99
Rural population	6 139	5 946	5 369	5 084	-0.32	-1.02	-1.09
Percentage urban	64.20	71.15	77.39	79.97			
Chile							
Urban population	3 541	5 211	7 460	8 507	3.86	3.59	2.63
Rural population	2 550	2 374	1 909	1 746	-0.72	-2.18	-1.79
Percentage urban	58.13	68.70	79.62	82.97			
Tropical South America							
Urban population	31 384	52 944	85 319	106 061	5.23	4.77	4.35
Rural population	54 544	62 897	70 009	73 517	1.42	1.07	0.98
Percentage urban	36.52	45.70	54.93	59.06			
Bolivia							
Urban population	778	1 104	1 652	2 013	3.50	4.03	3.95
Rural population	2 241	2 678	3 128	3 397	1.78	1.55	1.65
Percentage urban	25.77	29.19	34.56	37.21			

TABLE 161. URBAN AND RURAL POPULATION, PERCENTAGE OF URBAN POPULATION AND AVERAGE ANNUAL GROWTH RATES, MAJOR AREAS, REGIONS AND COUNTRIES, 1950–1975 (*continued*)

	Population (thousands) and percentage urban				*Average annual growth rates (percentage)*		
	1950	*1960*	*1970*	*1975*	*1950–1960*	*1960–1970*	*1970–1975*
Tropical South America *(continued)*							
Brazil							
Urban population	18 699	32 169	52 390	65 253	5.43	4.88	4.39
Rural population	34 202	39 370	42 814	44 477	1.41	0.84	0.76
Percentage urban	35.35	44.97	55.03	59.47			
Colombia							
Urban population	4 202	7 425	12 614	15 989	5.69	5.30	4.74
Rural population	7 487	8 480	9 461	9 901	1.25	1.09	0.91
Percentage urban	35.95	46.68	57.14	61.76			
Ecuador							
Urban population	915	1 457	2 245	2 828	4.65	4.32	4.62
Rural population	2 309	2 871	3 786	4 262	2.18	2.77	2.37
Percentage urban	28.38	33.66	37.22	39.89			
Peru							
Urban population	3 268	4 695	7 305	8 973	3.62	4.42	4.11
Rural population	4 647	5 298	5 943	6 353	1.31	1.15	1.33
Percentage urban	41.29	46.98	55.14	58.55			
Venezuela							
Urban population	2 838	5 157	7 852	9 504	5.97	4.20	3.82
Rural population	2 307	2 478	2 707	2 709	0.72	0.88	0.01
Percentage urban	55.16	67.54	74.36	77.82			
Northern America							
Urban population	105 703	138 736	167 872	181 257	2.72	1.91	1.53
Rural population	60 370	59 926	58 517	55 584	-0.07	-0.24	-1.03
Percentage urban	63.65	69.84	74.15	76.53			
Canada							
Urban population	8 333	12 259	16 176	17 886	3.86	2.77	2.01
Rural population	5 404	5 650	5 230	4 915	0.45	-0.77	-1.24
Percentage urban	60.66	68.45	75.57	78.44			
United States of America							
Urban population	97 313	126 404	151 602	163 266	2.62	1.82	1.48
Rural population	54 958	54 267	53 277	50 659	-0.13	-0.18	-1.01
Percentage urban	63.91	69.96	74.00	76.32			
East Asia							
Urban population	111 890	193 961	263 972	307 983	5.50	3.08	3.08
Rural population	562 931	594 019	662 894	698 397	0.54	1.10	1.04
Percentage urban	16.58	24.61	28.48	30.60			
China							
Urban population	61 988	122 162	167 313	196 943	6.78	3.15	3.26
Rural population	496 202	532 326	604 527	641 860	0.70	1.27	1.20
Percentage urban	11.11	18.67	21.68	23.48			
Japan							
Urban population	42 048	58 851	74 436	83 578	3.36	2.35	2.32
Rural population	41 577	35 245	29 895	27 542	-1.65	-1.65	-1.64
Percentage urban	50.28	62.54	71.35	75.21			
Other East Asia							
Urban population	7 854	12 948	22 223	27 462	5.00	5.40	4.23
Rural population	25 151	26 448	28 471	28 994	0.50	0.74	0.36
Percentage urban	23.80	32.87	43.84	48.64			
Korea							
Urban population	5 750	9 834	18 023	22 825	5.37	6.06	4.72
Rural population	24 346	25 387	27 234	27 689	0.42	0.70	0.33
Percentage urban	19.11	27.92	39.82	45.19			
Democratic People's Republic of Korea							
Urban population	2 000	3 000	5 290	6 769	4.05	5.67	4.93
Rural population	7 740	7 526	8 602	9 083	-0.28	1.34	1.09
Percentage urban	20.53	28.50	38.08	42.70			
Republic of Korea							
Urban population	3 750	6 834	12 733	16 057	6.00	6.22	4.64
Rural population	16 606	17 861	18 632	18 606	0.73	0.42	-0.03
Percentage urban	18.42	27.67	40.60	46.32			

TABLE 161. URBAN AND RURAL POPULATION, PERCENTAGE OF URBAN POPULATION AND AVERAGE ANNUAL GROWTH RATES, MAJOR AREAS, REGIONS AND COUNTRIES, 1950–1975 (*continued*)

	Population (thousands) and percentage urban				*Average annual growth rates (percentage)*		
	1950	*1960*	*1970*	*1975*	*1950–1960*	*1960–1970*	*1970–1975*
South Asia							
Urban population	107 972	154 948	230 254	283 616	3.61	3.96	4.17
Rural population	584 944	700 763	870 945	966 177	1.81	2.17	2.08
Percentage urban	15.58	18.11	20.91	22.69			
Eastern South Asia							
Urban population	24 019	37 354	57 007	71 198	4.42	4.23	4.45
Rural population	149 209	179 632	225 962	252 638	1.86	2.29	2.23
Percentage urban	13.87	17.21	20.15	21.99			
Burma							
Urban population	2 937	4 276	6 229	7 659	3.76	3.76	4.13
Rural population	15 443	17 978	21 519	23 581	1.52	1.80	1.83
Percentage urban	15.98	19.21	22.45	24.52			
Democratic Kampuchea							
Urban population	414	559	912	1 136	3.00	4.89	4.39
Rural population	3 749	4 805	6 148	6 974	2.48	2.46	2.52
Percentage urban	9.94	10.42	12.92	14.01			
Indonesia[b]							
Urban population	8 885	13 553	20 851	26 232	4.22	4.31	4.59
Rural population	66 564	79 148	98 616	109 812	1.73	2.20	2.15
Percentage urban	11.78	14.62	17.45	19.28			
Malaysia							
Urban population	1 238	2 049	2 908	3 651	5.04	3.50	4.55
Rural population	4 949	5 859	7 558	8 442	1.69	2.55	2.21
Percentage urban	20.01	25.91	27.79	30.19			
Philippines							
Urban population	5 511	8 298	12 638	15 977	4.09	4.21	4.69
Rural population	15 477	19 263	24 966	28 460	2.19	2.59	2.62
Percentage urban	26.26	30.11	33.61	35.95			
Thailand							
Urban population	2 052	3 362	5 356	6 963	4.94	4.66	5.25
Rural population	17 958	23 030	30 889	35 130	2.49	2.77	2.90
Percentage urban	10.25	12.74	14.98	16.54			
Viet Nam							
Urban population	2 327	3 859	5 894	7 023	5.06	4.24	3.51
Rural population	22 273	26 341	33 212	36 428	1.68	2.32	1.85
Percentage urban	9.46	12.78	15.07	16.16			
Middle South Asia							
Urban population	73 639	99 819	142 769	173 718	3.04	3.58	3.92
Rural population	401 706	480 744	598 941	664 081	1.80	2.20	2.06
Percentage urban	15.49	17.19	19.25	20.74			
Afghanistan							
Urban population	700	1 097	1 823	2 368	4.49	5.08	5.23
Rural population	10 960	12 639	15 155	16 912	1.43	1.82	2.19
Percentage urban	6.00	7.99	10.74	12.28			
Bangladesh							
Urban population	1 801	2 585	4 923	6 075	3.61	6.44	4.21
Rural population	39 236	48 861	62 769	67 671	2.19	2.50	1.50
Percentage urban	4.39	5.02	7.27	8.24			
India							
Urban population	59 359	77 535	106 498	127 660	2.67	3.17	3.62
Rural population	293 305	350 267	436 634	485 557	1.77	2.20	2.12
Percentage urban	16.83	18.12	19.61	20.82			
Iran							
Urban population	4 849	7 146	11 616	14 586	3.88	4.86	4.55
Rural population	12 064	14 408	16 743	18 337	1.78	1.50	1.82
Percentage urban	28.67	33.15	40.96	44.30			
Nepal							
Urban population	182	289	443	567	4.62	4.27	4.94
Rural population	7 818	8 891	10 789	12 005	1.29	1.93	2.14
Percentage urban	2.28	3.15	3.94	4.51			
Pakistan							
Urban population	5 614	9 361	14 661	18 993	5.11	4.49	5.18
Rural population	30 836	36 490	45 788	51 567	1.68	2.27	2.38
Percentage urban	15.40	20.42	24.25	26.92			

TABLE 161. URBAN AND RURAL POPULATION, PERCENTAGE OF URBAN POPULATION AND AVERAGE ANNUAL GROWTH RATES, MAJOR AREAS, REGIONS AND COUNTRIES, 1950-1975 (*continued*)

	Population (thousands) and percentage urban				*Average annual growth rates (percentage)*		
	1950	*1960*	*1970*	*1975*	*1950-1960*	*1960-1970*	*1970-1975*
Sri Lanka							
Urban population	1 107	1 769	2 751	3 401	4.69	4.42	4.24
Rural population	6 571	8 120	9 763	10 585	2.12	1.84	1.62
Percentage urban	14.42	17.89	21.98	24.32			
Western South Asia							
Urban population	10 314	17 775	30 478	38 699	5.44	5.39	4.78
Rural population	34 029	40 386	46 042	49 459	1.71	1.31	1.43
Percentage urban	23.26	30.56	39.83	43.90			
Iraq							
Urban population	1 884	2 918	5 367	6 854	4.38	6.09	4.89
Rural population	3 296	3 929	3 989	4 213	1.76	0.15	1.09
Percentage urban	36.37	42.62	57.36	61.93			
Saudi Arabia							
Urban population	400	729	1 377	1 868	6.00	6.36	6.10
Rural population	4 490	5 250	6 363	7 098	1.56	1.92	2.19
Percentage urban	8.18	12.19	17.79	20.83			
Syrian Arab Republic							
Urban population	1 216	1 681	2 683	3 300	3.24	4.68	4.14
Rural population	2 279	2 880	3 564	3 959	2.34	2.13	2.10
Percentage urban	34.79	36.86	42.95	45.46			
Turkey							
Urban population	4 441	8 180	13 579	17 171	6.11	5.07	4.69
Rural population	16 368	19 329	21 653	22 711	1.66	1.14	0.95
Percentage urban	21.34	29.74	38.54	43.05			
Yemen							
Urban population	75	170	402	591	8.18	8.61	7.71
Rural population	3 547	4 259	5 365	6 077	1.83	2.31	2.49
Percentage urban	2.07	3.84	6.97	8.86			
Europe							
Urban population	217 225	256 323	303 053	324 229	1.66	1.67	1.35
Rural population	174 743	168 831	156 032	148 869	-0.34	-0.79	-0.94
Percentage urban	55.42	60.29	66.01	68.53			
Eastern Europe							
Urban population	37 348	46 007	54 733	59 848	2.09	1.74	1.79
Rural population	51 152	50 702	48 209	46 419	-0.09	-0.50	-0.76
Percentage urban	42.20	47.57	53.17	56.32			
Bulgaria							
Urban population	1 998	2 967	4 442	5 090	3.95	4.04	2.72
Rural population	5 253	4 900	4 048	3 703	-0.70	-1.91	-1.78
Percentage urban	27.55	37.71	52.32	57.89			
Czechoslovakia							
Urban population	5 271	6 452	7 880	8 597	2.02	2.00	1.74
Rural population	7 118	7 202	6 459	6 196	0.12	-1.09	-0.83
Percentage urban	42.55	47.25	54.96	58.12			
German Democratic Republic[e]							
Urban population	13 019	12 408	12 559	12 830	-0.48	0.12	0.43
Rural population	5 368	4 832	4 499	4 297	-1.05	-0.71	-0.92
Percentage urban	70.81	71.97	73.63	74.91			
Hungary							
Urban population	3 445	3 994	4 668	5 023	1.48	1.56	1.47
Rural population	5 893	5 990	5 670	5 511	0.16	-0.55	-0.57
Percentage urban	36.89	40.00	45.15	47.68			
Poland							
Urban population	9 440	13 983	16 926	18 829	3.93	1.91	2.13
Rural population	15 384	15 578	15 547	15 012	0.13	-0.02	-0.70
Percentage urban	38.03	47.30	52.12	55.64			
Romania							
Urban population	4 175	6 203	8 258	9 480	3.96	2.86	2.76
Rural population	12 136	12 200	11 986	11 698	0.05	-0.18	-0.49
Percentage urban	25.60	33.71	40.79	44.76			

TABLE 161. URBAN AND RURAL POPULATION, PERCENTAGE OF URBAN POPULATION AND AVERAGE ANNUAL GROWTH RATES, MAJOR AREAS, REGIONS AND COUNTRIES, 1950–1975 (*continued*)

	Population (thousands) and percentage urban				*Average annual growth rates (percentage)*		
	1950	*1960*	*1970*	*1975*	*1950–1960*	*1960–1970*	*1970–1975*
Northern Europe							
Urban population	53 755	59 073	65 701	68 396	0.94	1.06	0.80
Rural population	18 722	16 761	14 608	13 579	-1.11	-1.37	-1.46
Percentage urban	74.17	77.90	81.81	83.44			
Denmark							
Urban population	2 901	3 380	3 930	4 123	1.53	1.51	0.96
Rural population	1 370	1 201	999	903	-1.32	-1.84	-2.02
Percentage urban	67.92	73.78	79.73	82.03			
Sweden							
Urban population	4 624	5 419	6 526	6 943	1.59	1.86	1.24
Rural population	2 390	2 061	1 517	1 348	-1.48	-3.06	-2.36
Percentage urban	65.93	72.45	81.14	83.74			
United Kingdom							
Urban population	42 122	44 989	48 865	50 332	0.66	0.83	0.59
Rural population	8 494	7 570	6 615	6 095	-1.15	-1.35	-1.64
Percentage urban	83.22	85.60	88.08	89.20			
Southern Europe							
Urban population	48 765	58 588	71 889	78 339	1.84	2.05	1.72
Rural population	59 787	59 510	55 807	54 015	-0.05	-0.64	-0.65
Percentage urban	44.92	49.61	56.30	59.19			
Greece							
Urban population	2 823	3 568	4 669	5 081	2.34	2.69	1.69
Rural population	4 743	4 759	4 124	3 849	0.03	-1.43	-1.38
Percentage urban	37.31	42.85	53.10	56.90			
Italy							
Urban population	25 420	29 745	34 363	36 704	1.57	1.44	1.32
Rural population	21 349	20 478	19 202	18 319	-0.42	-0.64	-0.94
Percentage urban	54.35	59.23	64.15	66.71			
Portugal							
Urban population	1 787	2 005	2 262	2 453	1.15	1.21	1.62
Rural population	6 618	6 821	6 366	6 309	0.30	-0.69	-0.18
Percentage urban	21.26	22.72	26.22	28.00			
Spain							
Urban population	14 660	17 369	22 442	24 638	1.70	2.56	1.87
Rural population	13 208	12 934	11 337	10 795	-0.21	-1.32	-0.98
Percentage urban	52.61	57.32	66.44	69.53			
Yugoslavia							
Urban population	3 589	5 135	7 151	8 256	3.58	3.31	2.87
Rural population	12 757	13 267	13 220	13 066	0.39	-0.04	-0.23
Percentage urban	21.96	27.90	35.10	38.72			
Western Europe							
Urban population	77 357	92 655	110 730	117 646	1.80	1.78	1.21
Rural population	45 082	41 858	37 407	34 857	-0.74	-1.12	-1.41
Percentage urban	63.18	68.88	74.75	77.14			
Austria							
Urban population	3 424	3 524	3 838	3 994	0.29	0.85	0.80
Rural population	3 511	3 524	3 609	3 544	0.04	0.24	-0.36
Percentage urban	49.37	50.00	51.54	52.98			
Belgium							
Urban population	5 477	6 043	6 795	7 139	0.98	1.17	0.99
Rural population	3 162	3 110	2 843	2 707	-0.17	-0.90	-0.98
Percentage urban	63.40	66.02	70.50	72.51			
France							
Urban population	23 373	28 490	36 890	40 241	1.98	2.58	1.74
Rural population	18 363	17 194	13 780	12 672	-0.66	-2.21	-1.68
Percentage urban	56.00	62.36	72.80	76.05			
Germany, Federal Republic of[c]							
Urban population	35 411	43 009	49 371	51 453	1.94	1.38	0.83
Rural population	14 578	12 424	11 329	10 229	-1.60	-0.92	-2.04
Percentage urban	70.84	77.59	81.34	83.42			
Netherlands							
Urban population	7 398	8 633	10 159	10 801	1.54	1.63	1.23
Rural population	2 716	2 847	2 873	2 798	0.47	0.09	-0.53
Percentage urban	73.15	75.20	77.95	79.42			

TABLE 161. URBAN AND RURAL POPULATION, PERCENTAGE OF URBAN POPULATION AND AVERAGE ANNUAL GROWTH RATES, MAJOR AREAS, REGIONS AND COUNTRIES, 1950–1975 (*continued*)

	Population (thousands) and percentage urban				*Average annual growth rates (percentage)*		
	1950	*1960*	*1970*	*1975*	*1950–1960*	*1960–1970*	*1970–1975*
Northern Europe *(continued)*							
Switzerland							
Urban population	2 075	2 735	3 420	3 751	2.76	2.24	1.85
Rural population	2 619	2 627	2 847	2 784	0.03	0.80	-0.45
Percentage urban	44.21	51.01	54.57	57.40			
Oceania							
Urban population	8 040	10 411	13 561	15 283	2.58	2.64	2.39
Rural population	4 592	5 360	5 762	6 025	1.55	0.72	0.89
Percentage urban	63.65	66.01	70.18	71.72			
Australia and New Zealand							
Urban population	7 864	10 094	12 938	14 425	2.50	2.48	2.18
Rural population	2 263	2 593	2 433	2 415	1.36	-0.64	-0.15
Percentage urban	77.65	79.56	84.17	85.66			
Australia							
Urban population	6 486	8 294	10 640	11 896	2.46	2.49	2.23
Rural population	1 733	2 021	1 912	1 913	1.54	-0.55	0.01
Percentage urban	78.91	80.41	84.77	86.15			
USSR							
Urban population	70 816	104 141	137 743	154 844	3.86	2.80	2.34
Rural population	109 259	110 188	105 025	100 194	0.08	-0.48	-0.94
Percentage urban	39.33	48.59	56.74	60.71			

[a] Data for countries with less than 5 million inhabitants in 1975 are not listed separately in this table. World and regional totals include an allowance for these countries.

[b] Including West Irian.

[c] Including Berlin—designations and figures for Berlin appearing in this table were based on data supplied by the competent authorities pursuant to the relevant agreements of the four Powers.

TABLE 162. DISTRIBUTION OF THE WORLD'S LABOUR FORCE, BY AGE AND MAJOR AREA, 1950 AND 1975

	All age groups		*10–24 years*		*25–54 years*		*55 years and over*	
	Number (thousands)	*Percentage of world total*	*Number (thousands)*	*Percentage of world total*	*Number (thousands)*	*Percentage of world total*	*Number (thousands)*	*Percentage of world total*
				1950				
World	1 100 150	100.0	354 015	100.0	606 200	100.0	139 935	100.0
More developed regions	397 436	36.1	108 091	30.5	232 577	38.4	56 768	40.6
Less developed regions	702 714	63.9	245 924	69.5	373 624	61.6	83 166	59.4
South Asia	303 502	27.6	112 569	31.8	155 844	25.7	35 090	25.1
East Asia	292 722	26.6	91 781	25.9	163 879	27.0	37 062	26.5
Europe	181 971	16.5	48 351	13.7	106 448	17.6	27 172	19.4
USSR	93 790	8.5	30 343	8.6	51 846	8.6	11 601	8.3
Africa	94 698	8.6	35 196	9.9	48 828	8.1	10 674	7.6
Northern America	70 554	6.4	13 955	3.9	45 083	7.4	11 516	8.2
Latin America	57 464	5.2	20 267	5.7	31 094	5.1	6 104	4.4
Oceania	5 449	0.5	1 554	0.4	3 179	0.5	716	0.5
				1975				
World	1 645 575	100.0	476 757	100.0	980 942	100.0	187 876	100.0
More developed regions	520 082	31.6	113 452	23.8	340 551	34.7	66 079	35.2
Less developed regions	1 125 493	68.4	363 305	76.2	640 391	65.3	121 797	64.8
East Asia	472 770	28.7	131 306	27.5	281 367	28.9	60 097	32.0
South Asia	468 090	28.5	157 199	33.0	264 454	27.0	46 437	24.7
Europe	210 305	12.7	45 363	9.5	134 475	13.7	30 467	16.2
Africa	152 142	9.3	53 576	11.2	83 342	8.5	15 224	8.1
USSR	126 935	7.7	27 464	5.8	91 930	9.4	7 542	4.0
Northern America	104 234	6.3	25 003	5.2	62 485	6.4	16 746	8.9
Latin America	102 022	6.2	34 231	7.2	57 544	5.9	10 247	5.5
Oceania	9 076	0.6	2 615	0.6	5 345	0.5	1 116	0.6

TABLE 163. LABOUR FORCE PARTICIPATION RATES, BY AGE AND SEX, 1950 AND 1975

	Both sexes, all age groups	Males				Females			
		All age groups	10–24 years	25–54 years	55+ years	All age groups	10–24 years	25–54 years	55+ years
					1950				
World	43.9	60.4	63.0	96.8	74.9	27.5	34.6	41.9	24.0
More developed regions	46.4	61.5	55.4	96.3	66.4	32.5	40.1	45.5	24.2
Less developed regions	42.7	59.8	66.4	97.1	81.0	24.7	31.9	39.4	23.8
South Asia	43.8	59.8	67.9	97.3	82.8	27.0	34.0	45.2	28.1
East Asia	43.4	60.8	62.5	96.7	76.9	24.9	32.6	37.3	20.6
Europe	46.4	64.8	60.4	97.1	64.1	29.4	40.6	39.1	20.1
USSR	52.1	57.2	52.5	94.6	71.4	48.1	50.0	68.1	40.9
Africa	42.8	57.7	69.1	98.1	87.8	28.0	35.8	47.3	33.4
Northern America	42.5	61.0	49.2	95.5	66.2	24.0	26.3	36.7	17.3
Latin America	35.1	57.1	63.2	97.2	82.8	12.7	17.6	19.3	13.7
Oceania	43.1	62.9	62.5	97.8	63.3	22.7	41.2	28.9	11.5
					1975				
World	41.5	53.8	49.6	95.9	61.5	29.1	31.4	51.1	22.4
More developed regions	46.0	57.3	43.0	95.9	48.2	35.4	34.7	59.9	18.1
Less developed regions	39.7	52.5	51.7	96.0	71.3	26.4	30.3	46.5	26.7
South Asia	37.5	50.9	51.7	96.0	75.5	23.4	27.7	42.0	24.8
East Asia	47.0	57.4	50.0	96.0	66.5	36.3	38.7	59.6	31.0
Europe	44.5	58.2	44.9	96.0	46.9	31.4	35.5	50.2	17.3
USSR	49.8	53.9	39.7	95.8	33.2	46.2	37.4	90.0	10.0
Africa	37.9	51.6	56.5	97.1	78.6	24.4	29.1	43.9	30.1
Northern America	44.0	56.3	43.1	94.7	52.6	32.2	31.2	51.6	24.0
Latin America	31.5	48.9	47.8	95.3	64.8	14.1	18.4	24.1	11.4
Oceania	42.6	56.9	50.1	96.3	56.8	27.9	37.2	43.7	15.3

TABLE 164. PERCENTAGE DISTRIBUTION OF THE LABOUR FORCE, BY AGE AND SEX, 1950 AND 1975

	Both sexes, all age groups	Males				Females			
		All age groups	10–24 years	25–54 years	55+ years	All age groups	10–24 years	25–54 years	55+ years
					1950				
World	100.0	68.7	21.0	38.4	9.3	31.3	11.1	16.7	3.4
More developed regions	100.0	63.3	15.8	37.9	9.7	36.7	11.4	20.6	4.6
Less developed regions	100.0	71.7	24.0	38.6	9.1	28.3	11.0	14.5	2.7
South Asia	100.0	69.9	24.9	36.2	8.7	30.1	12.1	15.1	2.8
East Asia	100.0	72.1	21.2	41.1	9.8	27.9	10.1	14.9	2.8
Europe	100.0	67.1	16.0	40.5	10.6	32.9	10.6	18.0	4.3
USSR	100.0	48.2	16.3	26.0	5.8	51.8	16.0	29.2	6.5
Africa	100.0	67.1	24.5	34.7	7.9	32.9	12.7	16.8	3.4
Northern America	100.0	71.7	12.9	45.9	12.8	28.3	6.8	18.0	3.5
Latin America	100.0	82.0	27.7	45.3	9.0	18.0	7.6	8.8	1.6
Oceania	100.0	74.1	17.6	45.5	11.0	25.9	10.9	12.8	2.1
					1975				
World	100.0	65.0	18.0	39.1	7.9	35.0	11.0	20.5	3.5
More developed regions	100.0	60.3	12.3	39.7	8.3	39.7	9.6	25.8	4.4
Less developed regions	100.0	67.2	20.6	38.8	7.8	32.8	11.7	18.1	3.0
South Asia	100.0	69.5	22.3	39.7	7.5	30.5	11.3	16.8	2.4
East Asia	100.0	62.0	15.9	37.7	8.4	38.0	11.9	21.8	4.3
Europe	100.0	63.8	12.3	41.9	9.7	36.2	9.3	22.1	4.8
USSR	100.0	50.3	11.3	35.3	3.7	49.7	10.3	37.1	2.3
Africa	100.0	67.6	23.3	37.3	7.0	32.4	11.9	17.5	3.0
Northern America	100.0	62.6	14.1	38.3	10.2	37.4	9.9	21.6	5.9
Latin America	100.0	77.7	24.3	44.9	8.4	22.3	9.2	11.5	1.6
Oceania	100.0	67.7	16.9	41.3	9.5	32.3	11.9	17.6	2.8

TABLE 165. AVERAGE ANNUAL RATES OF GROWTH OF LABOUR FORCE, BY AGE AND SEX, 1950–1975

	Both sexes				Males				Females			
	Total	10–24 years	25–54 years	55+ years	Total	10–24 years	25–54 years	55+ years	Total	10–24 years	25–54 years	55+ years
World	1.6	1.2	1.9	1.2	1.4	1.0	1.7	1.0	2.1	1.6	2.5	1.7
More developed regions	1.1	0.2	1.5	0.6	0.9	0.1	1.3	0.5	1.4	0.4	2.0	0.9
Less developed regions	1.9	1.6	2.2	1.5	1.6	1.3	1.9	1.3	2.5	2.1	2.8	2.3
Africa	1.9	1.7	2.2	1.4	1.9	1.7	2.2	1.4	1.9	1.7	2.1	1.5
Latin America	2.3	2.1	2.5	2.1	2.1	1.8	2.3	2.0	3.2	3.1	3.4	2.4
Northern America	1.6	2.4	1.3	1.5	1.0	1.9	0.8	0.6	2.7	3.1	2.3	3.7
East Asia	1.9	1.4	2.2	2.0	1.3	0.8	1.6	1.3	3.2	2.6	3.5	3.6
South Asia	1.8	1.3	2.1	1.1	1.7	1.3	2.1	1.1	1.8	1.5	2.2	1.1
Europe	0.6	–0.2	0.9	0.5	0.4	–0.5	0.7	0.2	1.0	0.1	1.4	1.0
Oceania	2.1	2.1	2.1	1.8	1.7	1.9	1.7	1.5	3.0	2.4	3.4	3.2
USSR	1.2	–0.4	2.3	–1.7	1.4	–0.2	2.5	–0.6	1.1	–0.6	2.2	–3.0

TABLE 166. DEPENDENCY RATIOS: NON-ACTIVE PERSONS PER 1,000 ACTIVE PERSONS, BY AGE AND SEX, 1950 AND 1975

			Males					Females				
		Both sexes, all age groups	All age groups	0–14 years	15–24 years	25–54 years	55+ years	All age groups	0–14 years	15–24 years	25–54 years	55+ years
World	1950	1 276	451	372	35	13	31	825	371	114	232	108
	1975	1 411	557	422	69	17	50	854	412	125	197	120
More developed regions	1950	1 157	397	298	35	15	49	761	290	78	247	145
	1975	1 176	450	276	68	17	89	726	265	88	172	201
Less developed regions	1950	1 343	481	415	34	11	21	861	416	134	224	88
	1975	1 520	607	490	69	16	31	913	480	141	208	83
Africa	1950	1 337	491	444	29	7	11	846	469	122	188	67
	1975	1 639	633	545	58	11	19	1 006	557	154	223	70
Latin America	1950	1 853	616	546	38	13	19	1 237	562	205	368	102
	1975	2 107	813	652	93	22	46	1 364	651	224	362	127
Northern America	1950	1 354	457	323	47	22	66	896	313	106	310	167
	1975	1 272	486	293	79	22	92	787	283	114	203	187
East Asia	1950	1 305	466	385	37	14	30	839	361	118	251	109
	1975	1 129	461	342	61	16	42	667	333	91	148	95
South Asia	1950	1 283	470	406	36	10	18	813	422	135	183	72
	1975	1 670	670	554	75	17	24	1 000	534	161	232	73
Europe	1950	1 154	365	268	25	12	59	789	262	74	281	173
	1975	1 250	459	273	59	17	110	791	261	81	219	230
Oceania	1950	1 318	438	340	23	10	64	881	328	73	315	165
	1975	1 348	514	369	58	16	72	834	354	93	226	161
USSR	1950	920	361	286	36	15	23	559	276	52	137	94
	1975	1 009	430	264	76	16	74	579	254	80	42	203

TABLE 167. PERCENTAGE CHANGES IN DEPENDENCY RATIOS, BY AGE AND SEX, 1950–1975

		Males					Females				
	Both sexes, all age groups	All age groups	0–14 years	15–24 years	25–54 years	55+ years	All age groups	0–14 years	15–24 years	25–54 years	55+ years
World	11	24	13	98	32	60	4	11	10	–15	11
More developed regions	2	13	– 7	94	15	82	– 4	– 9	12	–30	39
Less developed regions	13	26	18	101	44	49	6	15	6	– 7	– 5
Africa	23	29	23	100	67	73	19	19	27	19	5
Latin America	18	32	20	143	65	144	10	16	10	– 2	25
Northern America	– 6	6	– 9	69	0	40	–12	–10	7	–35	12
East Asia	–13	– 1	–11	64	12	44	–20	– 7	–23	–41	–12
South Asia	30	42	36	110	64	35	23	26	20	26	1
Europe	8	26	2	135	42	85	0	0	10	–22	33
Oceania	2	18	8	151	54	12	– 5	8	27	–28	– 2
USSR	10	19	– 8	111	4	217	4	– 8	55	–69	116

TABLE 168. PERCENTAGE DISTRIBUTION OF DEPENDANTS BY SEX AND AGE, 1950 AND 1975

	Date	Both sexes, all age groups	Males					Females				
			All age groups	0–14 years	15–24 years	25–54 years	55+ years	All age groups	0–14 years	15–24 years	25–54 years	55+ years
World	1950	100	35	29	3	1	2	65	29	9	18	8
	1975	100	39	30	5	1	3	61	29	9	14	9
More developed regions	1950	100	34	26	3	1	4	66	25	7	21	12
	1975	100	38	23	6	1	8	62	23	7	15	17
Less developed regions	1950	100	36	31	3	1	2	64	31	10	17	6
	1975	100	40	32	5	1	2	60	32	9	14	5
Africa	1950	100	37	33	2	0	1	63	35	9	14	5
	1975	100	39	33	4	1	1	61	34	9	14	4
Latin America	1950	100	33	29	2	1	1	67	30	11	20	5
	1975	100	37	30	4	1	2	63	30	10	17	6
Northern America	1950	100	34	24	3	2	5	66	23	8	23	12
	1975	100	38	23	6	2	7	62	22	9	16	15
East Asia	1950	100	36	30	3	1	2	64	28	9	19	8
	1975	100	41	30	5	1	4	59	29	8	13	8
South Asia	1950	100	37	32	3	1	1	63	33	10	14	6
	1975	100	40	33	4	1	1	60	32	10	14	4
Europe	1950	100	32	23	2	1	5	68	23	6	24	15
	1975	100	37	22	5	1	9	63	21	6	18	18
Oceania	1950	100	33	26	2	1	5	67	25	6	24	13
	1975	100	38	27	4	1	5	62	26	7	17	12
USSR	1950	100	39	31	4	2	3	61	30	6	15	10
	1975	100	43	26	8	1	7	57	25	8	4	20

TABLE 169. ENROLMENT RATIOS FOR AGE GROUPS 6–11 YEARS AND 12–17 YEARS, BOTH SEXES[a]

Less developed regions	6–11 years				12–17 years			
	1960	1965	1970	1975	1960	1965	1970	1975
Total	46.6	53.9	56.7	60.3	21.4	28.0	31.1	33.5
Africa	33.3	39.7	43.3	49.9	17.4	22.0	26.3	29.9
Latin America	58.1	64.1	72.1	80.0	35.7	42.4	48.5	57.8
South Asia	47.9	56.1	57.4	58.9	19.2	26.2	28.1	28.6

[a] Ratios are provisional estimates.

TABLE 170. DISAGGREGATION OF FACTORS CAUSING INCREASES IN SCHOOL ENROLMENTS

Trend in enrolment ratio	Population growth alone	Enrolment rate alone	Interaction of population and enrolment ratio trends	Increase in pupils	
				Number	Percentage
Very rapid rise in enrolment ratio (from 40 per cent to 95 per cent in 10 years)					
High fertility	14.3	66.1	19.6	111 000	20
Declining fertility	14.0	66.8	19.2	109 000	20
Rapidly declining fertility	13.0	69.0	18.0	106 000	20
Rapid rise in enrolment ratio (from 40 per cent to 95 per cent in 20 years)					
High fertility	25.0	40.7	34.3	179 000	33
Declining fertility	20.7	50.8	28.5	143 000	27
Rapidly declining fertility	14.0	66.8	19.2	109 000	20
Slower rise in enrolment ratio (from 40 per cent to 95 per cent in 30 years)					
High fertility	30.9	26.6	42.5	274 000	51
Declining fertility	22.4	46.9	30.7	155 000	29
Rapidly declining fertility	13.3	55.3	31.4	106 000	20
Slow rise in enrolment ratio (From 40 per cent to 95 per cent in 40 years)					
High fertility	34.7	17.6	47.7	415 000	78
Declining fertility	23.5	44.2	32.3	164 000	30
Rapidly declining fertility	20.8	50.6	28.6	144 000	27

Source: Gavin W. Jones, "Effect of population change on the attainment of educational goals in the developing countries," in National Academy of Sciences, *Rapid Population Growth; Consequences and Policy Implications* (Washington, D.C., 1971).

Note: Estimates have been computed for a hypothetical country with a population structure resembling that of many developing countries.

TABLE 171. ADULT LITERACY AROUND 1960 AND 1970: BOTH SEXES

	Around 1960				*Around 1970*			
	Adult population 15 years old and over (thousands)	*Literate adults (thousands)*	*Illiterate adults (thousands)*	*Illiteracy percentage*	*Adult population 15 years old and over (thousands)*	*Literate adults (thousands)*	*Illiterate adults (thousands)*	*Illiteracy percentage*
Total[a]	1 869 000	1 134 000	735 000	39.3	2 287 000	1 504 000	783 000	34.2
Africa	153 000	29 000	124 000	81.0	194 000	51 100	143 000	73.7
Northern America	136 600	133 300	3 300	2.4	161 000	158 000	2 500	1.5
Latin America	123 200	83 200	40 000	32.5	163 000	125 000	38 600	23.6
Asia[a]	982 000	440 000	542 000	55.2	1 237 000	658 000	579 000	46.8
Europe and USSR	463 500	439 000	24 500	5.3	521 000	502 000	18 700	3.6
Oceania	10 600	9 400	1 200	11.5	13 200	11 800	1 400	10.3

[a] Excluding China, the Democratic People's Republic of Korea and the former Democratic Republic of Viet-Nam.

TABLE 172. SCHOOL ENROLMENT RATIOS, SPECIFIED AGE GROUPS, BY SEX AND BY URBAN AND RURAL AREAS, SELECTED COUNTRIES OF ASIA

(Percentage)

Country and census year	*Sex*	*Age group* 5–9 *Urban*	5–9 *Rural*	10–14 *Urban*	10–14 *Rural*	15–19 *Urban*	15–19 *Rural*
India[a] (1965/66)	Both sexes	75.3	62.8	39.9	14.4	39.8	8.6
Indonesia (1961)	Both sexes	49.0	30.9	79.8	55.8	39.3	12.3
	Male	49.4	31.8	84.1	60.9	48.2	18.2
	Female	48.5	30.2	75.4	49.9	30.1	7.4
Iran[b] (1966)	Both sexes	76.0	31.6	75.8	29.2	41.9	6.9
	Male	83.0	47.8	84.3	46.4	53.5	12.5
	Female	69.0	13.9	66.5	9.9	29.1	1.6
Pakistan[c] (1961)	Both Sexes	26.4	13.3	41.2	19.6	20.0	6.9
	Male	30.7	17.3	48.9	27.8	26.0	12.7
	Female	21.5	8.9	32.2	9.2	12.0	0.9
Sri Lanka (1963)	Both sexes	79.8	72.4	81.4	73.9	49.8	37.5
	Male	80.4	73.9	83.2	77.7	51.2	41.1
	Female	79.2	71.0	80.0	69.9	48.1	33.8

Sources: Statistics of Children and Youth. Supplement to the Statistical Yearbook for Asia and the Far East, 1968 (United Nations publication, E/CN.11/879); *Population Dynamics and Educational Development* (Bangkok, UNESCO Regional Office for Education in Asia, 1974).

[a] Enrolment data are from Second All-India Educational Survey. Population data were estimated on the basis of the 1961 age distribution.

[b] Figures in column "Age group 5–9" refer to age group 7–9.

[c] Including data for Bangladesh.

TABLE 173. SCHOOL ENROLMENT RATIOS, AGES 5–14 YEARS, BOTH SEXES, BY URBAN AND RURAL AREAS, SELECTED COUNTRIES OF LATIN AMERICA

(Percentage)

Country	*Year*	*Total*	*Urban*	*Rural*
Brazil	1970	51	61	40
Dominican Republic	1970	98	100	97
Chile	1970	89	95	72
Colombia	1969	60	68	50
El Salvador	1971	54	91	33
Ecuador	1968	75	97	62

TABLE 174. WORLD CEREAL SUPPLIES, 1969–1974

(Millions of metric tons)

	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75[a]
Wheat						
Production[b]	315.5	318.4	353.9	347.3	377.2	361.0
Imports[c]	48.1	52.6	52.6	67.6	63.1	62.7
Developed countries[d]	(19.3)	(23.2)	(22.8)	(33.7)	(22.7)	(18.7)
Developing countries	(28.8)	(29.4)	(29.8)	(33.9)	(40.4)	(44.0)
Closing stocks of main exporting countries[e]	65.1	50.1	48.8	29.0	27.0	30.0
Coarse grains[f]						
Production[b]	583.5	581.7	648.8	631.0	675.0	649.2
Imports	38.1	43.8	47.4	54.9	63.2	57.0
Developed countries[d]	(34.0)	(38.9)	(40.9)	(45.4)	(49.7)	(44.4)
Developing countries	(4.1)	(4.9)	(6.5)	(9.5)	(13.5)	(12.6)
Closing stocks of main exporting countries[g]	54.8	38.6	54.1	38.7	28.2	23.0
Rice (milled equivalent)						
Production[h]	197.2	205.7	205.9	197.4	216.3	214.5
Imports[b]	6.3	7.1	7.6	7.6	7.7	7.3
Developed countries	(1.4)	(1.3)	(1.5)	(1.4)	(1.3)	(1.3)
Developing countries	(4.9)	(5.8)	(6.1)	(6.2)	(6.4)	(6.0)
Closing stocks of main exporting countries[h]	9.7	8.9	6.1	3.7	4.2	3.8
Total cereals						
Production	1 096.2	1 105.8	1 208.4	1 176.2	1 268.5	1 224.7
Imports	92.5	103.5	107.6	130.1	134.0	127.0
Developed countries	(54.7)	(63.4)	(65.2)	(80.5)	(73.7)	(64.4)
Developing countries	(37.8)	(40.1)	(42.4)	(49.6)	(60.3)	(62.6)
Closing stocks of main exporting countries	129.6	97.6	109.0	71.4	58.3	57.0

[a] Preliminary.
[b] Calendar years 1969–1974.
[c] Including wheat flour in wheat equivalent.
[d] Excluding trade within the European Economic Community (EEC).
[e] Argentina, Australia, Canada, EEC, United States of America.
[f] Rye, barley, oats, maize, millet and sorghum, mixed grains.
[g] Argentina, Australia, Canada, South Africa, United States of America.
[h] Japan, Pakistan, Thailand, United States of America.

TABLE 175. AVERAGE ENERGY AND PROTEIN SUPPLY OF THE WORLD, BY REGION, 1961–1971[a]

	Energy		Protein		Energy as percentage of requirement	
	1961	1969–1971	1961	1969–1971	1961	1969–1971
	(kilocalories per capita)		(grams per capita)		(percentage)	
Developed market economies	2 950	3 090	87.5	95.1	115	121
Western Europe	3 020	3 130	89.3	93.7	118	123
North America	3 110	3 320	92.3	105.2	118	126
Oceania	3 210	3 260	92.7	108.1	121	123
Other developed market economies	2 420	2 550	73.3	79.1	102	108
Eastern Europe and USSR	2 990	3 260	85.8	99.3	116	127
Developed regions	2 960	3 150	87.0	96.4	116	123
Developing market economies	2 130	2 210	55.0	56.0	93	97
Africa	2 120	2 190	55.7	58.4	91	94
Asia and the Pacific	2 050	2 080	51.3	50.7	92	94
Latin America	2 410	2 530	63.7	65.0	100	105
Western Asia	2 200	2 500	62.3	69.3	89	102
Asian centrally planned economies	2 020	2 170	54.7	60.4	86	92
Developing regions	2 100	2 200	54.9	57.4	91	95
World	2 380	2 480	65.2	69.0	100	104

[a] The figures relate to protein and energy content of the food available at the retail level after allowance is made for the storage and marketing losses and waste.

TABLE 176. *Per capita* ENERGY SUPPLIES IN COUNTRIES OF ASIA AND THE PACIFIC AND LATIN AMERICA FOR WHICH INFORMATION IS AVAILABLE, 1970–1974[a]

(Kilocalories)

Asia and the Pacific		*1969–1971*	*1971*	*1972*	*1973*	*1974*	*Latin America*		*1969–1971*	*1971*	*1972*	*1973*	*1974*
							Countries showing surpluses in energy supplies[b]						
Burma	E	2 189	2 188	2 018	2 167	2 223	Panama	E	2 553	2 560	2 293	2 283	2 421
	R	101	101	93	100	103		R	111	111	99	99	105
Hong Kong	E	2 599	2 696	2 602	2 650	2 525	Uruguay	E	3 023	2 905	2 875	2 979	3 086
	R	113	118	114	116	110		R	113	109	108	112	116
Peninsular Malaysia	E	2 474	2 450	2 450	2 536	2 571	Argentina	E	3 350	3 302	3 247	3 186	3 406
	R	110	109	110	113	115		R	126	125	123	120	129
Thailand	E	2 290	2 301	2 256	2 308	2 371	Guyana	E	2 358	2 337	2 278	2 410	2 351
	R	103	104	102	104	107		R	104	103	100	106	104
							Countries showing deficits in energy supplies[b]						
Bangladesh	E	1 943	1 887	1 902	1 915	2 024	Bolivia	E	1 808	1 846	1 879	1 852	1 849
	R	88	85	86	87	92		R	76	77	79	77	77
India	E	2 036	2 085	2 053	1 886	1 976	Colombia	E	2 152	2 191	2 166	2 144	2 183
	R	92	94	93	85	89		R	93	94	93	92	94
Philippines	E	1 951	1 931	1 943	1 982	1 994	Guatemala	E	2 016	2 003	1 987	1 984	1 944
	R	86	85	86	88	87		R	93	91	91	91	91
Sri Lanka	E	2 280	2 198	2 094	2 081	2 019	Honduras	E	2 178	2 114	2 072	2 042	2 041
	R	103	99	94	94	91		R	96	94	92	90	90
TOTAL	E	2 070	2 102	2 068	2 002	2 068	TOTAL	E	2 531	2 529	2 531	2 538	2 557
	R	94	95	93	90	93		R	106	106	106	107	107

[a] The countries covered in this analysis include over 90 per cent of the total population of the Far East and Latin America.

[b] E = energy supplies *per capita* per day; R = energy supplies as percentage of requirements.

TABLE 177. DISTRIBUTION OF FOOD EXPENDITURE, BY INCOME CLASSES, COUNTRIES AT DIFFERENT LEVELS OF DEVELOPMENT

	India (urban and rural)				*Japan (urban and rural)*			
	Average	*Lowest*	*Medium*	*Highest*	*Average*	*Lowest*	*Medium*	*Highest*
	1957–1958				*1965*			
Percentage of households	100	10	73	17	100	8	80	12
Food expenditure as percentage of total	67	80	72	52	38	49	40	33
Percentage of expenditure on total food for:								
(a) Cereals, starchy roots and sugar	60	76	64	45	30	35	30	25
(b) Meat, fish, milk and eggs	16	5	13	26	27	23	26	30
	1960–1961				*1967*			
Percentage of households	100	12	66	22	100	9	78	13
Food expenditure as percentage of total	68	81	72	53	37	45	38	32
Percentage of expenditure on total food for:								
(a) Cereals, starchy roots and sugar	55	74	60	42	26	32	27	23
(b) Meat, fish, milk and eggs	17	6	15	24	28	25	27	31
	1963–1964				*1969*			
Percentage of households	100	11	74	17	100	7	79	14
Food expenditure as percentage of total	68	81	75	59	36	44	37	32
Percentage of expenditure on total food for:								
(a) Cereals, starchy roots and sugar	54	71	59	40	23	27	24	21
(b) Meat, fish, milk and eggs[a]	11	4	9	17	30	29	30	32

[a] Milk only.

TABLE 178. FOOD CONSUMPTION IN RURAL AND URBAN AREAS OF JAPAN, 1951–1968

	Rural					Urban					Urban as per cent of rural				
	1951	1956	1961	1966	1968	1951	1956	1961	1966	1968	1951	1956	1961	1966	1968
	(per capita *per day*)					(per capita *per day*)									
Calories (kilocalories)	2 171	2 152	2 210	2 243	2 225	2 061	2 034	2 036	2 209	2 218	95	94	92	98	100
Proteins (grammes): Total	67	68	69	74	75	70	70	71	77	77	104	103	103	104	103
Animal	(17)	(20)	(21)	(27)	(29)	(23)	(25)	(30)	(32)	(34)	(135)	(125)	(143)	(118)	(117)
Fats	16	19	23	36	39	21	24	29	44	47	131	126	126	122	120
Commodities (grammes)															
Cereals: Total	500	491	485	431	395	490	457	426	397	370	98	93	88	92	94
Rice	(370)	(386)	(399)	(362)	(332)	(329)	(340)	(341)	(316)	(293)	(89)	(88)	(85)	(87)	(88)
Wheat	(73)	(54)	(37)	(10)	(9)	(109)	(80)	(74)	(76)	(73)	(149)	(148)	(200)	(760)	(811)
Other cereals	(57)	(51)	(49)	(59)	(54)	(52)	(37)	(11)	(5)	(4)	(91)	(72)	(22)	(8)	(7)
Starchy roots	135	79	76	76	46	78	57	54	67	46	58	72	71	88	100
Sugars	10	14	13	15	20	14	17	13	14	20	140	121	100	93	100
Pulses	60	69	68	78	76	67	77	70	78	72	112	112	103	100	95
Vegetables	235	244	232	248	236	197	216	194	234	247	84	88	84	94	105
Fruits	39	52	70	111	—	62	78	81	136	—	159	150	116	122	—
Milk	7	17	24	37	50	11	26	45	66	71	157	153	187	178	142
Meat and poultry	4	8	10	24	26	12	23	29	42	44	300	287	290	175	169
Eggs	6	9	16	28	34	11	17	28	39	41	183	189	175	139	121
Fish and shellfish	65	68	66	87	88	85	77	79	86	84	131	113	120	99	95
Fats and oils	3	4	6	10	13	4	6	7	12	14	133	150	117	120	108
Other commodities	121	147	187	260	300	161	188	265	329	359	133	128	142	126	120

Source: Annual report of the National Institute of Nutrition, Japan, 1971.

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