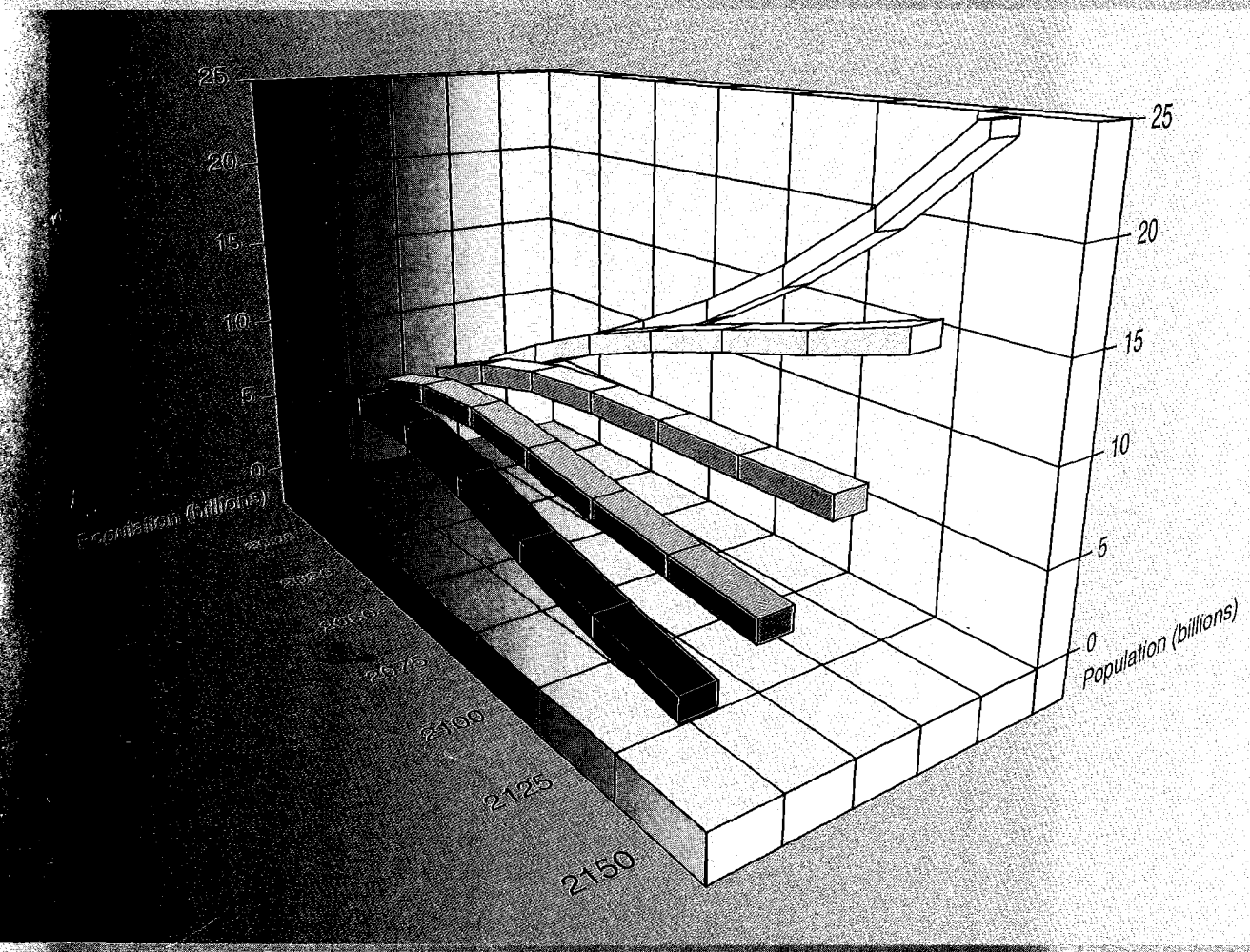
Economic & Social Affairs

Long-range World Population Projections:

Based on the 1998 Revision



United Nations

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Department of Economic and Social Affairs
Population Division

Long-range World Population Projections:

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United Nations New York, 2000

NOTE

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

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PREFACE

Every two years the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat prepares the official United Nations estimates and projections of world, regional and national population size and growth, and demographic indicators. The results from the most recent set of estimates and projections were published in *World Population Prospects: The 1998 Revision*, a three-volume set issued over the period 1999-2000. The estimates and projections in the *1998 Revision* cover the period 1950-2050.

The United Nations also prepares, as warranted, supplementary world population projections for a longer period ending in 2150. The present publication presents long-range projections for the world and its major areas, extending the results of the *1998 Revision* over the period 2050-2150. The United Nations has published long-range projections on five previous occasions: 1968, 1978, 1980, 1990 and 1998.

The Executive Summary of this report, as well as other population information, may be accessed at *www.un.org/esa/population/unpop.htm,* the Population Division's world wide web site. For inquiries related to this publication or any other population issues, please contact the office of Mr. Joseph Chamie, Director, Population Division, United Nations, New York, N.Y. 10017.

The United Nations wishes to express its appreciation to the David and Lucile Packard Foundation whose grant helped support the preparation of these projections. Acknowledgement is also due to Griffith Feeney, who assisted the Population Division in the preparation of this report.

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Symbols of United Nations documents are composed of capital letters combined with figures.

Various symbols have been used in the tables throughout this report, as follows:

Two dots (..) indicate that data are not available or are not separately reported.
An em dash (—) indicates that the population is less than 500 persons.
A hyphen (-) indicates that the item is not applicable.
A minus sign (-) before a figure indicates a decrease.
A full stop (.) is used to indicate decimals.
Years given refer to 1 July.
Use of a hyphen (-) between years, for example, 1995-2000, signifies the full period involved, from 1 July of the beginning year to 1 July of the end year.

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

Countries and areas are grouped geographically into six major areas: Africa; Asia; Europe; Latin America and the Caribbean; Northern America; and Oceania. Those major areas are further divided geographically into 21 regions. In addition, the regions are classified as belonging, for statistical convenience, to either of two general groups: more developed and less developed regions. The less developed regions include all regions of Africa, Asia (excluding Japan), Latin America and the Caribbean, Melanesia, Micronesia and Polynesia. The more developed regions comprise Australia/New Zealand, Europe, Japan and Northern America.

The group of least developed countries currently comprises 48 countries: Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Samoa, Sao Tome and Principe, Sierra Leone, Solomon Islands, Somalia, Sudan, Togo, Tuvalu, Uganda, United Republic of Tanzania, Vanuatu, Yemen and Zambia.

KEY FINDINGS

The long-range projections prepared by the United Nations Population Division include several scenarios for population growth for the world and its major areas over the period 1995-2150. The medium scenario assumes that fertility in all major areas stabilizes at replacement level around 2050; the low scenario assumes that fertility is half a child lower than in the medium scenario; and the high scenario assumes that fertility is half a child higher than in the medium scenario. The constant scenario maintains fertility constant during 1995-2150 at the level estimated for 1990-1995, and the instant-replacement scenario makes fertility drop instantly to replacement level in 1995 and remain at that level thereafter. The key findings yielded by these projection scenarios are the following:

1. World population rises from 5.7 billion persons in 1995 to 9.7 billion persons in 2150 according to the medium scenario and, assuming that fertility remains at replacement level thereafter, world population nearly stabilizes at a level just above 10 billion after 2200.

2. Future population size is sensitive to small but sustained deviations of fertility from replacement level. Thus, the low scenario results in a declining population that reaches 3.2 billion in 2150 and the high scenario leads to a growing population that rises to 24.8 billion by 2150.

3. If the fertility of major areas is kept constant at 1995 levels, the world population soars to 256 billion by 2150, 169 billion of whom live in Africa.

4. If fertility remains at replacement level starting in 1995, the world population rises from 5.7 billion persons in 1995 to 9.3 billion persons in 2150, 400 million less than the population projected by the medium scenario.

5. All scenarios result in significant shifts in the geographical distribution of the world population. According to the medium scenario, the share of Africa doubles (passing from 12 per cent of the world population in 1995 to 24 per cent in 2150), whereas that of China is reduced by a third (from 22 per cent in 1995 to 14 per cent in 2150) and that of Europe by more than half (from 13 per cent to 5 per cent).

6. By 2150 in the medium scenario about a third of the world population lives in China and India; about a quarter in the rest of Asia; another quarter in Africa; fewer than one in ten persons lives in Europe and Northern America; and about the same proportion lives in Latin America and the Caribbean.

7. The low, medium and high scenarios all result in significant shifts of the age distribution towards older ages. According to the medium scenario, the share of persons aged 0-14 declines from 30 per cent in 1995 to 18 per cent in 2150, whereas the share of persons aged 60 or over rises from 10 per cent to 30 per cent over the same period.

8. Increasing longevity is expected to have a moderate impact on population increase over the long term. If longevity does not increase after 2050, the world population reaches 8.6 billion by 2150 instead of the 9.7 billion reached under the assumption of declining mortality in the medium scenario.

EXECUTIVE SUMMARY

The Population Division of the United Nations has prepared new long-range projections for the world population and eight major world areas for the period 1995-2150. These projections extend the results published in *World Population Prospects: The 1998 Revision*, Volumes I, II and III (United Nations, 1999a, 1999b and 2000) which cover the period 1995-2050. The long-range projections present detailed results for the following major areas: Africa; Asia excluding China and India; Europe; Latin America and the Caribbean; Northern America; Oceania; and for China and India, the only countries considered separately.

The long-range projections include a number of scenarios for the possible future growth of the world population. The three key scenarios are (*a*) the medium scenario which assumes that fertility in all major areas will stabilize at replacement level (at slightly over 2 children per woman) by 2050 or after; (*b*) the low scenario which assumes that in all major areas fertility will be lower than the fertility in the medium scenario by about half a child; and (*c*) the high scenario which assumes that fertility will be higher than in the medium scenario by about half a child. Also considered for illustrative purposes are (*d*) a constant scenario where fertility is maintained constant over the period 1995-2150 at the level it had in each major area as of 1990-1995; and (*e*) an instant-replacement scenario in which fertility in each major area is assumed to drop instantly to replacement level in 1995 and remain at that level during 1995-2150. In all these scenarios mortality is assumed to decline steadily during the projection period but, for some scenarios, a variation that incorporates constant mortality over the period 2050-2150 at the level attained in 2050 is also considered for purposes of comparison.

Normally, long-range projections are produced every five years. However, the changes introduced in the *1998 Revision* of *World Population Prospects* (United Nations, 1999a, 1999b and 2000) have made an early revision of these projections necessary. In recent years a major reassessment of the prospects for fertility decline has taken place. By 1995 only 17 countries in the developing world, with less than 4 per cent of the world population, showed no signs of a fertility reduction. In many of the countries where fertility reductions had begun, the decline was rapid. Furthermore, in countries that were already far advanced in the transition from high to low fertility, fertility did not necessarily stabilize at replacement level. Thus, the number of countries with below-replacement fertility is large and increasing. By 1995, 44 per cent of the world population lived in countries where fertility was at or below replacement level (2.1 children per woman). Forty-nine countries, including China, were in that group, and many of those countries had been experiencing below-replacement fertility for at least a decade or two. In 10 countries, fertility reached levels below 1.5 children per woman and more recent data confirmed that low fertility had persisted. These developments justified the assumption that fertility would remain below replacement level during most of the 1995-2050 period in countries with below-replacement fertility today. The *1998 Revision* incorporated such an assumption in the medium projection, whereas the *1996 Revision* assumed a return to replacement-level fertility in all countries. Such differing assumptions have important implications for the long-term future: whereas the medium scenario of the preceding long-range projections, consistent with the *1996 Revision*, yielded a world population of 10.8 billion in 2150, the medium scenario of the present projections, consistent with the *1998 Revision*, produced a population of 9.7 billion, 1.1 billion lower.

THE EFFECT OF FERTILITY ON POPULATION SIZE AND GROWTH

The present set of long-range projections permits an assessment of the long-term impact of

different fertility trends. The medium scenario, with a fertility that eventually stabilizes at replacement level (2.05-2.09 children per women), leads to zero population growth in the long run. In contrast, the high scenario produces an ever increasing population because its fertility stabilizes at 2.5-2.6 children per woman, and the low scenario leads to a decreasing population since its fertility stabilizes at 1.5-1.6 children per women, about half a child below replacement level.

The three scenarios result therefore in projections of very different sizes for the world population. By 2150, the population of the world will be 24.8 billion according to the high scenario, 9.7 billion according to the medium scenario and 3.2 billion according to the low scenario. The low and high scenarios illustrate how deviations of about half a child from replacement level, if sustained over the long run, can produce large deviations from the path of the medium scenario which leads to an unchanging population size. Owing to the nature of exponential growth, the deviations expand over time (see table 1 and figure 1). Thus, the differences between the high and low scenarios with respect to the medium scenario are moderate in 2050 (at less than 2 billion each), but in 2150 they amount to 15 billion and 6 billion respectively. Aside from reflecting the uncertainty surrounding the projection of population size over the long-term future, these deviations underscore the importance of attaining replacement-level fertility as soon as possible and sustaining levels very close to it over long periods. Even a deviation of about 0.2-0.3 children per women above the fertility of the medium scenario, if sustained until 2150, would result in a population of 16.2 billion persons instead of the 9.7 yielded by the medium scenario.

Future fertility trends also affect the rate at which population grows. Fertility has both a direct effect on population growth, by determining the number of births women have, and an indirect one, by determining the size of the different generations. In a population with fertility above replacement level, offspring outnumber their parents, sometimes by substantial amounts, and those offspring may in turn have more children than needed to replace the generations of their own parents even when fertility levels are falling. That is, as fertility falls, the number of births to the relatively large generations of parents is higher for a time than the number of deaths in the population, which are mostly those of the grandparents and great-grandparents of the children in the population, even though fertility may have already reached replacement level. This effect is responsible for producing positive population growth even long after fertility reaches and remains at replacement level. Partly because of this process, the illustrative instant-replacement scenario produces positive growth rates during the whole 1995-2150 period (see table 1). However, after 2070, the rate of population growth in that scenario is very low (below 0.15 per cent per year). Interestingly, the medium scenario produces even lower growth rates after 2070 (see table 1). The fact that fertility in the medium scenario remains below replacement level for the populations of China, Europe and Northern America at least until 2050 and then rises slowly to replacement level is responsible for this difference and contributes to producing a world population in 2150 for the medium scenario that is fairly close to that produced by the instant-replacement scenario (9.7 billion versus. 9.3 billion).

In comparison to the medium scenario, where in 2150 the population has a growth rate nearing zero, that of the low scenario will be declining at about 0.9 per cent per year and that of the high scenario will be growing at about the same rate (see table 1). Were those rates of decline and increase to be sustained after 2150, the population of the low scenario would be cut in half every 77 years and that of the high scenario would double every 77 years. This observation suggests that both the low and the high scenarios embody patterns of decline and growth that are unsustainable over the very long run. For that reason, scenarios based on smaller fertility deviations from replacement level have also been prepared. In the low-medium and high-medium scenarios fertility remains within a band of 0.2 children below or 0.3 children above the level in the medium scenario. These intermediate scenarios result in more moderate rates of decline or growth in the long run and in lower reductions or increases of the world population (see

TABLE 1. WORLD POPULATION ACCORDING TO VARIOUS PROJECTION SCENARIOS, 1995-2150

Year or period	Projection scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
				Population (millions)			
1995	5 666	5 666	5 666	5 666	5 666	5 666	5 666
2000	5 962	6 028	6 028	6 055	6 082	6 082	6 113
2025	7 424	7 275	7 275	7 824	8 379	8 379	9 069
2050	8 310	7 343	7 547	8 909	10 409	10 674	14 421
2075	8 663	6 402	7 024	9 319	12 026	13 149	26 048
2100	8 924	5 153	6 324	9 459	13 430	16 178	52 508
2125	9 142	4 074	5 779	9 573	14 735	19 986	113 302
2150	9 349	3 236	5 329	9 746	16 218	24 834	255 846
				Growth rates (per year)			
1995-2000	1.02	1.24	1.24	1.33	1.42	1.42	1.52
2020-2025	0.71	0.50	0.50	0.84	1.17	1.17	1.65
2045-2050	0.29	-0.23	-0.07	0.34	0.69	0.87	2.02
2070-2075	0.13	-0.73	-0.39	0.11	0.51	0.83	2.57
2095-2100	0.11	-0.92	-0.40	0.04	0.40	0.83	2.93
2120-2125	0.09	-0.93	-0.34	0.06	0.37	0.86	3.16
2145-2150	0.09	-0.92	-0.32	0.08	0.39	0.87	3.32

Source: Values for 1995-2050 for the low, medium, high and constant scenarios were obtained from *World Population Prospects: The 1998 Revision*, vol. I, *Comprehensive Tables* (United Nations, publication, Sales No. E.99.XIII.9). All other values are the result of the long-range projections.

NOTE: Values for 1995 are estimates rather than projections and are therefore the same for all scenarios. Projected numbers for the world are the sum of the projected numbers for the eight major world areas based on the assumptions for each scenario.

Figure 1. World population according to five projection scenarios, 1950-2150

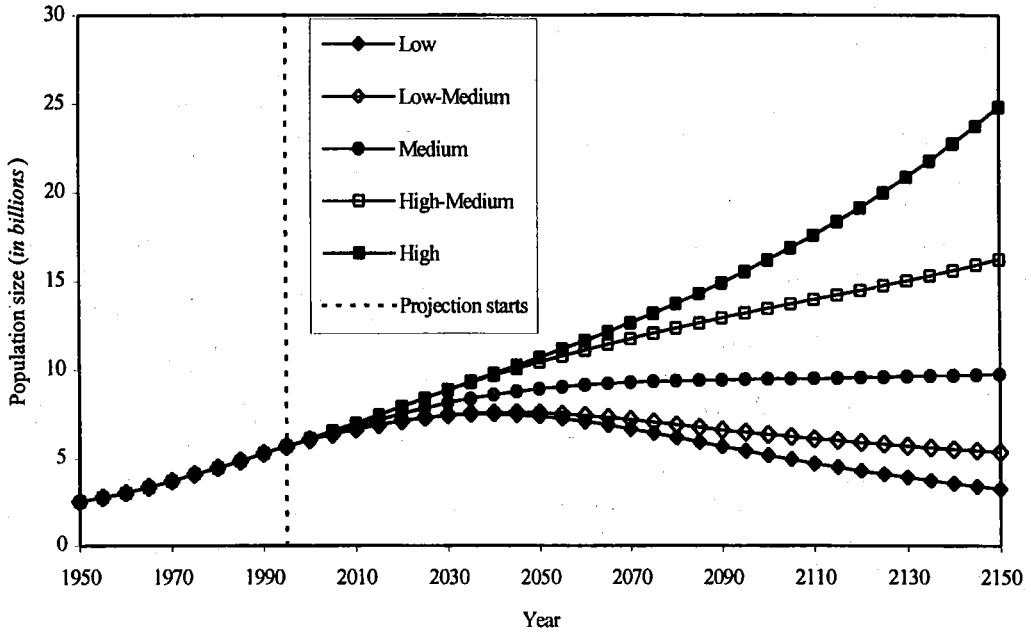


table 1 and figure 1). The path that fertility will actually follow in the future will very likely be bound by these scenarios if sustainability is to be maintained.

THE EFFECT OF MORTALITY ON POPULATION SIZE AND GROWTH

Population growth is also affected by changes in mortality. Under constant fertility conditions, reductions in the risks of dying contribute to increased population growth. When fertility is falling, the effects of declining mortality on population growth counterbalance those of declining fertility. The main long-range projection scenarios prepared by the Population Division assume that mortality declines steadily after 2050, albeit at a slow pace. Thus, the expectation of life at birth for women increases from 79 years in 2050 to 88 years in 2150. For men the increase is from 74 years to 83 years over the same period.

To explore the impact that the assumed changes in mortality would have on population growth, scenarios were prepared that incorporated constant mortality risks as of 2050. As expected, constant mortality reduces population growth in all scenarios and results in smaller populations in 2150. The largest impact in relative terms is on the declining population of the low scenario where constant mortality would cut population size in 2150 by 15 per cent, resulting in a population of 2.8 billion instead of the 3.2 billion that the low scenario yields. For the medium and high scenarios the reductions are of the order of 10 to 11 per cent. In 2150, constant mortality would produce populations of 8.6 billion and 22.4 billion instead of the medium and high scenario populations of 9.7 billion and 24.8 billion respectively.

THE CHANGING GEOGRAPHICAL DISTRIBUTION OF THE POPULATION

Today, the different major areas of the world are at different stages of the transition from high to low mortality and fertility. Consequently, their growth paths differ considerably over the projection period. According to all scenarios, Africa experiences the highest rates of population growth and Europe experiences the lowest, followed by China and Northern America in increasing order. Different rates of growth result in a redistribution of the population by major area. In all projection scenarios the fastest growing area, Africa, increases its share of the world population, whereas Europe and China, which experience the lowest growth, see their shares reduced (see table 2). According to the medium scenario, the number of inhabitants in Africa increases from 697 million in 1995 to 2.3 billion in 2150, and their share of the world population doubles, expanding from 12 per cent to 24 per cent. For Europe, the population declines from 728 million in 1995 to 517 million in 2150 and its share of the world population falls from 13 per cent to 5 per cent. In the case of China, although the population increases from 1.2 billion to nearly 1.4 billion between 1995 and 2150, its share of the world population declines from 22 per cent to 14 per cent. Other areas experience less marked changes over the projection period.

As a result of these trends, the world of 2150 is likely to be one in which China and India together will account for about a third of the world population; the rest of Asia and Africa each will account for nearly a quarter of the world population; Latin America and the Caribbean will comprise nearly a tenth; and so will Europe and Northern America taken together. In terms of population size, by 2150 the most populous major area will continue to be Asia (even excluding China and India), but Africa will be the second most populous area, followed by India, China, and Latin America and the Caribbean (see figure 2).

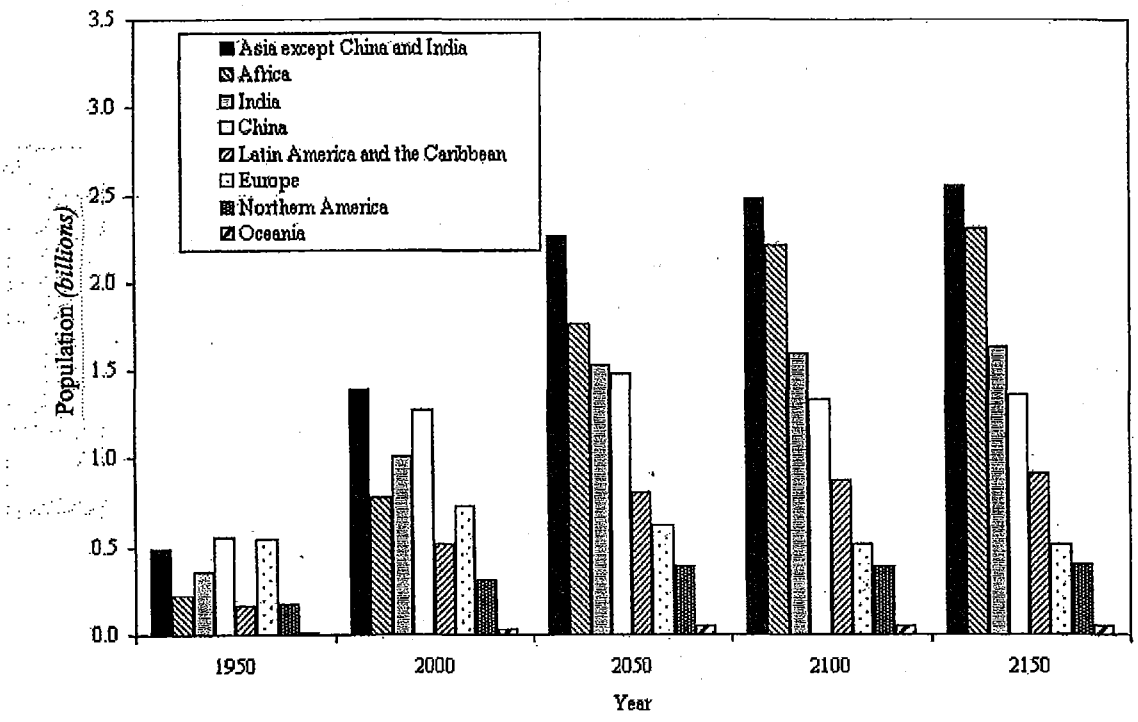
THE UNAVOIDABLE GREYING OF THE POPULATION

In a growing population, children outnumber their parents and younger age groups comprise rising proportions of the population. When fertility declines, the number of children starts to fall and, if fertility reductions are sustained, younger age groups account for a decreasing proportion of the population over time. The declining proportion of children is counterbalanced by a rising proportion of adults, at first concentrated largely in the middle age range and later impacting

TABLE 2. WORLD POPULATION BY MAJOR AREA, MEDIUM SCENARIO, 1995-2050

Year	Total	Major area							
		Africa	*Europe*	*Latin America and the Caribbean*	*Northern America*	*Oceania*	*Asia excluding China and India*	*China*	*India*
				Population (millions)					
1995	5 666	697	728	480	297	28	1 282	1 221	934
2000	6 055	784	729	519	310	30	1 391	1 278	1 014
2025	7 824	1 298	702	697	364	40	1 912	1 480	1 330
2050	8 909	1 766	628	809	392	46	2 262	1 478	1 529
2075	9 319	2 077	549	857	390	48	2 423	1 386	1 589
2100	9 459	2 215	515	877	388	49	2 476	1 340	1 600
2125	9 573	2 264	508	894	390	50	2 512	1 338	1 617
2150	9 746	2 308	517	912	398	51	2 558	1 361	1 642
				Percentage					
1995	100	12	13	8	5	1	23	22	16
2000	100	12	13	8	5	1	23	22	16
2025	100	13	12	9	5	1	23	21	17
2050	100	17	9	9	5	1	24	19	17
2075	100	20	7	9	4	1	25	17	17
2100	100	22	6	9	4	1	26	15	17
2125	100	23	5	9	4	1	26	14	17
2150	100	24	5	9	4	1	26	14	17

Figure 2. Population size of major world areas, medium scenario, 1950-2150



mostly the upper age range (see figure 3). Consequently, reductions in fertility result in population ageing, a process whereby the proportions of children and younger persons decline and those of middle-aged and older adults rise. Given that, with the exception of the constant scenario, all other scenarios assume a decline of fertility for most areas during the 1995-2050 period, they all result in a considerable ageing of the population.

Consideration of the changing numbers of persons in the different age groups will help to illustrate the extent of population ageing over the projection period. According to the medium scenario, the world population increases by 4 billion persons between 1995 and 2150, yet the number of children (0 to 14 years of age) declines slightly (from 1.8 billion in 1995 to 1.7 billion in 2150). Over the same period, the number of persons aged 15 to 59 years rises by 1.7 billion but that of persons aged 60 years or more increases by 2.4 billion. In terms of the distribution by age, these changes imply that the proportion of children declines from 31 per cent in 1995 to 18 per cent in 2150, whereas the proportion of persons aged 60 or over triples, passing from 10 per cent in 1995 to 30 per cent in 2150 (see table 3). The proportion of the population aged 15 to 59 changes moderately, dropping from 59 per cent in 1995 to 52 per cent in 2150, but the nature of the economically dependent population changes drastically. By 2150, instead of involving mostly children who depend on their parents for support, this portion of the population will include mostly elderly persons whose support may have to depend either directly or indirectly on younger generations unless the period of economically productive life is effectively extended and provisions are taken to ensure that sound mechanisms for the funding of old-age pensions are in place.

Lastly, another major change brought about by the long-term ageing of the population is a very marked increase in the number and proportion of the population of the very old (those aged 80 years or over). According to the medium scenario, by 2150 there will be nearly one billion persons in that age group, 15 times the number in 1995. As a proportion of the population, those aged 80 or over will also become prominent, comprising

Figure 3. Percentage of world population by age group, medium scenario, 1950-2150

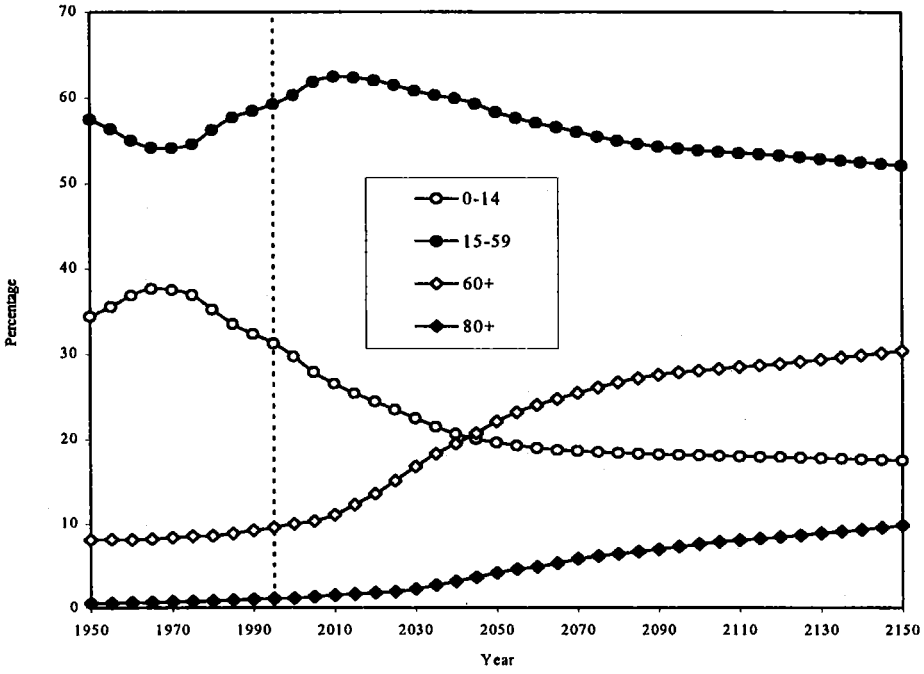


TABLE 3. AGE DISTRIBUTION OF THE WORLD POPULATION, MEDIUM SCENARIO, SELECTED AGE GROUPS, 1995-2150

Year	Total	Age group			
		0-14	15-59	60+	80+
		Population (millions)			
1995	5 666	1 768	3 354	544	62
2000	6 055	1 800	3 650	605	70
2025	7 824	1 836	4 807	1 180	149
2050	8 909	1 747	5 193	1 970	370
2075	9 319	1 724	5 166	2 428	572
2100	9 459	1 713	5 092	2 654	717
2125	9 573	1 707	5 078	2 788	824
2150	9 746	1 706	5 075	2 964	956
		Percentage			
1995	100	31	59	10	1
2000	100	30	60	10	1
2025	100	23	61	15	2
2050	100	20	58	22	4
2075	100	19	55	26	6
2100	100	18	54	28	8
2125	100	18	53	29	9
2150	100	18	52	30	10

10 per cent of the population in 2150 instead of 1 per cent as they do today. These changes suggest that the society of the future will have to value more the contributions of its older members so as to ensure that they remain active and engaged for most of their lengthy life spans. If the world population evolves as projected in the medium scenario, society will have some time to adapt to the expected changes, especially as savings can be accrued because of the slow growth and eventual reduction in the number of children. However, in historical terms, the time available is short and successful adaptation requires that we embark early on the path of societal change.

INTRODUCTION

The second half of the twentieth century marked a turning point in human demographic history. After rising continuously for more than two centuries, the rate of world population growth finally began to decline in the late 1960s. The long-range projections presented in this report provide persuasive evidence that this reversal is permanent and that world population growth rates will continue to decline for the foreseeable future. At the same time, however, they show that the world population is unlikely to stabilize before 2040 and may not do so before the end of the next century.

The immediate cause of the downturn of population growth rates is declining fertility. During the twentieth century, world population grew far more rapidly than it had ever grown before. The peak growth rate, attained during 1965-1970 would, if continued, have doubled world population every 34 years. As a reaction to the potential problems caused by such rapid growth, policies and programmes to reduce fertility were instituted in most countries. Partly as a result of those policies and partly owing to social and economic development, the total fertility in the world as a whole declined from 5 children per woman in 1960-1965 to 3 children per woman in 1990-1995.

Since 1950 fertility has declined both in countries that had very high fertility (above 5 children per woman) and also in those that already had relatively low fertility as documented in *World Population Prospects: The 1998 Revision,* vol. III, *Analytical Report* (United Nations, 2000). In Latin America and the Caribbean, for example, the level of fertility declined from just under 6 children per woman in 1960-1965 to slightly under 3 children per woman in 1990-1995 and in Europe, which had a total fertility of just 2.35 children per woman in 1960-1965, fertility declined to 1.57 children per woman by 1990-1995. As a result of such declines in the low-fertility countries, by 1990-1995, 44 per cent of the world population lived in countries with a total fertility below the level required to assure the long-term replacement of the population (2.1 children per woman).

The consistency and degree of prevalence of below-replacement fertility in the developed countries is remarkable. In the more developed regions, total fertility was above the replacement level only in Albania and Iceland in 1990-1995. Total fertility in Europe fell below replacement level in 1975-1980 and, as noted above, by 1990-1995 had declined to 1.57 children per woman. The total fertility of Japan fell below replacement level in 1955-1960 and had declined further to 1.49 children per woman by 1990-1995. Europe and Japan together represent more than 70 per cent of the population of the more developed regions, and in 1990-1995 they had, as a unit, a total fertility approximately half a child below replacement level.

Below-replacement fertility is no longer restricted to the more developed countries. In the past 15 years several developing countries have moved to below-replacement fertility. In 1990-1995 the total fertility of China, a country having over 22 per cent of the world population, fell to 1.92 children per woman. By that time below-replacement fertility also characterized Armenia, Azerbaijan, the Democratic People's Republic of Korea, Georgia, the Republic of Korea, Singapore and Thailand. While these countries represent less than 3 per cent of the world population, they show that below-replacement level fertility in developing countries is not limited to China.

A. LONG-RANGE POPULATION PROJECTIONS

The increasing prevalence of below-replacement fertility led to a change in the assumptions underlying the official population projections produced by the United Nations Population Division. Every two years, the projections through the year 2050 are updated for every country in the world. Four projection variants are

produced for each country, based on four different assumptions about future trends in fertility. The resulting sets of projections are known as the medium-fertility, high-fertility, low-fertility and constant-fertility variants, or medium, high, low and constant variants for short. In all projection variants, life expectancy is assumed to rise slowly but steadily and to follow the same increasing trend for each country.

The medium variant of the *1996 Revision* of the United Nations population projections (United Nations, 1998a) assumed a relatively early return to replacement level fertility in countries with below-replacement fertility in 1990-1995. In the medium variant of the *1998 Revision* (United Nations, 1999a, 1999b and 2000), the fertility of all countries that had below-replacement fertility levels in 1990-1995 remains well below replacement level until 2050, reflecting the persistence and degree to which below-replacement fertility was prevalent in 1995.

Projections 50 years into the future are not sufficient for all purposes. The rise in world population growth rates occurred over several centuries, and the approach to world population stabilization may take more than a century. To address the need for scenarios of population dynamics over the longer-term future, the Population Division has been producing long-range population projections that extend the results of the medium-term *Revisions* for an additional 100 years. The previous long-range projections (United Nations, 1998b) extended the projections of the *1996 Revision* from 2050 to 2150. Normally an interval of five or more years would elapse before the issuance of another set of long-range projections. However, the substantial changes in the *1998 Revision* imply a very different population situation in 2050 than that resulting from the *1996 Revision*. It is therefore appropriate that the revised set of long-range projections presented in this report, based on the *1998 Revision*, should be released at this time.

This report presents new long-range projections that extend the medium, high, low and constant variants of the *1998 Revision* from 2050 to 2150. Because of the greater uncertainty about population trends in the long-term future, it presents several other projection scenarios as well. These include the high-medium, low-medium and instant-replacement scenarios where fertility trends are different from those followed in the medium, high, low and constant scenarios. In addition, for each fertility scenario two sets of projections were produced: one where life expectancy increases steadily and another where life expectancy remains constant.

The high-medium and low-medium scenarios were introduced because of the large difference between the total population produced by the high and low scenarios. The instant-replacement scenario shows what would happen if all major areas achieved replacement level fertility in 1995 and maintained that fertility level until 2150. This assumption implies a rapid fertility decline for major areas that had above-replacement fertility in the early 1990s and a fertility increase for major areas with below-replacement fertility. The constant-mortality scenarios permit to infer the impact that increasing life expectancy has on population growth and aging.

The results of the long-range projections presented in this report refer to the world as a whole and to eight major areas: Africa; Europe; Latin America and the Caribbean; Northern America; Oceania; Asia excluding China and India; China and India considered separately. The *1998 Revision* presents results for each country of the world as well as for six major areas: Africa; Asia; Europe; Latin America and the Caribbean; Northern America; and Oceania. For the long-term projections, China and India are the only two countries considered individually. Such a strategy is warranted by the large population size of those countries.

B. Overview of the long-range projection results

According to the medium scenario, the world population rises from 5.7 billion persons in 1995 to 9.7 billion persons in 2150. The world population growth rate declines steadily, falling to less than 0.1 per cent per year by 2075. This growth rate results from a total fertility that declines to replacement level shortly before 2050 and remains

near replacement level thereafter, and from gradually rising life expectancy at birth. These results are summarized in table 4, which includes population and growth rate estimates beginning with 1900 in order to place recent and projected future growth in historical perspective.

In the long-range projections, relatively small differences in fertility and mortality levels have large effects on future growth. The low scenario, for example, shows world population peaking before 2050 and declining to only 3.2 billion persons by 2150. In contrast, the high scenario shows world population rising to 24.8 billion by 2150, even though the growth rate declines continuously during 2050-2150 (table 5).

The constant-fertility scenario shows the absurdity of assuming a continuation of current fertility levels, for such an assumption results in a

TABLE 4. WORLD POPULATION CHANGE, ESTIMATES AND MEDIUM SCENARIO, 1900-2150

Year	*Population (Millions)*	*Period*	*Growth rate*	*Total fertility rate*	*Expectation of life at birth (both sexes)*
1900.....	1 656	1900-1905	0.58	—	—
1925.....	1 900	1925-1930	1.27	—	—
1950.....	2 521	1950-1955	1.77	4.99	46.5
1975.....	4 075	1975-1980	1.72	3.92	59.8
2000.....	6 055	2000-2005	1.20	2.57	66.5
2025.....	7 824	2025-2030	0.72	2.17	73.1
2050.....	8 909	2050-2055	0.26	2.02	77.1
2075.....	9 319	2075-2080	0.08	2.06	79.9
2100.....	9 459	2100-2105	0.04	2.06	82.1
2125.....	9 573	2125-2130	0.06	2.06	84.1
2150.....	9 746	2150-2155	0.08	2.06	85.7

Sources: 1900 population from *Determinants and Consequences of Population Trends*, vol. I (United Nations publication, Sales No. E.71.XIII.5), table II.1; 1925 population and growth rates graphically interpolated; values for 1950-2050 from *World Population Prospects: The1998 Revision*, vol. I, *Comprehensive Tables* (United Nations publication, Sales No. E.99.XIII.9).

TABLE 5. WORLD POPULATION AND POPULATION GROWTH RATES, 1995 ESTIMATES AND SEVEN PROJECTION SCENARIOS, 2000-2150

	Scenario						
Years	*Instant-replacement*	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
				Population (millions)			
1995.....	5 666	5 666	5 666	5 666	5 666	5 666	5 666
2000.....	5 962	6 028	6 028	6 055	6 082	6 082	6 113
2025.....	7 424	7 275	7 275	7 824	8 379	8 379	9 069
2050.....	8 310	7 343	7 547	8 909	10 409	10 674	14 421
2075.....	8 663	6 402	7 024	9 319	12 026	13 149	26 048
2100.....	8 924	5 153	6 324	9 459	13 430	16 178	52 508
2125.....	9 142	4 074	5 779	9 573	14 735	19 986	113 302
2150.....	9 349	3 236	5 329	9 746	16 218	24 834	255 846
				Growth rates (per annum)			
1995-2000.....	1.02	1.24	1.24	1.33	1.42	1.42	1.52
2020-2025.....	0.71	0.50	0.50	0.84	1.17	1.17	1.65
2045-2050.....	0.29	-0.23	-0.07	0.34	0.69	0.87	2.02
2070-2075.....	0.13	-0.73	-0.39	0.11	0.51	0.83	2.57
2095-2100.....	0.11	-0.92	-0.40	0.04	0.40	0.83	2.93
2120-2125.....	0.09	-0.93	-0.34	0.06	0.37	0.86	3.16
2145-2150.....	0.09	-0.92	-0.32	0.08	0.39	0.87	3.32

world population of 256 billion persons in 2150 (table 5). World population growth rates increase to over 3 per cent per year by 2150 according to this scenario. Growth rates increase because Africa, the major area with the highest total fertility today, is projected to comprise a continually increasing proportion of the world population, reaching 66 per cent in 2150 or 169 billion inhabitants.

The instant-replacement scenario shows only slightly lower population growth than the medium scenario. This scenario implies a very rapid fertility decline in the major areas that today have above-replacement fertility, but it also implies a sizeable increase in fertility in those major areas that have below-replacement fertility. Since the latter major areas comprise nearly half of the world population, the two effects tend to cancel each other.

Different growth rates in different major areas imply major shifts of the world population by 2150, even though fertility levels converge by 2075 in each of the projection scenarios (table 6). If all areas were to follow the medium scenario, for example, Africa's share of the world population would double between 2000 and 2150, from 12 per cent to 24 per cent, while Europe's share would shrink from 13 per cent to 5 per cent. China's share falls from 22 per cent to 14 per cent, while the shares of the other areas, including India, do not change significantly.

Fertility trends exert a strong influence on the age distribution of the population. The sharper the decline of fertility, the higher the proportion of older persons in the population. In 2150, persons aged 60 or over will constitute 23 per cent of the world population in the high-fertility scenario, but 41 per cent in the low-fertility scenario (table 7).

TABLE 6. POPULATION, GROWTH RATE AND PERCENTAGE SHARE OF WORLD POPULATION, EIGHT MAJOR WORLD AREAS, MEDIUM SCENARIO FOR SELECTED YEARS, 1995-2150

Year(s)	*Total*	*Africa*	*Europe*	*Latin America and the Caribbean*	*Northern America*	*Oceania*	*Asia excluding China and India*	*China*	*India*
					Numbers (millions)				
1995	5 666	697	728	480	297	28	1 282	1 221	934
2000	6 055	784	729	519	310	30	1 391	1 278	1 014
2025	7 824	1 298	702	697	364	40	1 912	1 480	1 330
2050	8 909	1 766	628	809	392	46	2 262	1 478	1 529
2075	9 319	2 077	549	857	390	48	2 423	1 386	1 589
2100	9 459	2 215	515	877	388	49	2 476	1 340	1 600
2125	9 573	2 264	508	894	390	50	2 512	1 338	1 617
2150	9 746	2 308	517	912	398	51	2 558	1 361	1 642
					Share of world population (percentage)				
2000	100	12	13	8	5	1	23	22	16
2025	100	13	12	9	5	1	23	21	17
2050	100	17	9	9	5	1	24	19	17
2075	100	20	7	9	4	1	25	17	17
2100	100	22	6	9	4	1	26	15	17
2125	100	23	5	9	4	1	26	14	17
2150	100	24	5	9	4	1	26	14	17
					Growth rates (per annum)				
1995-2000	1.33	2.36	0.03	1.57	0.85	1.29	1.64	0.91	1.64
2020-2025	0.84	1.79	-0.27	0.93	0.54	0.88	1.00	0.35	0.90
2045-2050	0.34	0.99	-0.56	0.41	0.20	0.47	0.48	-0.24	0.37
2070-2075	0.11	0.47	-0.44	0.14	-0.03	0.12	0.17	-0.23	0.05
2095-2100	0.04	0.14	-0.14	0.08	-0.01	0.04	0.06	-0.07	0.04
2120-2125	0.06	0.08	0.01	0.08	0.05	0.07	0.07	0.04	0.05
2145-2150	0.08	0.08	0.09	0.08	0.08	0.08	0.08	0.08	0.07

TABLE 7. AGE DISTRIBUTION OF THE WORLD POPULATION BY PERCENTAGE AND NUMBERS IN BROAD AGE GROUPS, LOW, MEDIUM AND HIGH SCENARIOS, SELECTED YEARS, 2000-2150

	Low scenario				*Medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
						Percentage						
2000.....	29	61	10	1	30	60	10	1	30	60	10	1
2025.....	20	64	16	2	23	61	15	2	27	59	14	2
2050.....	15	59	27	5	20	58	22	4	24	57	18	3
2075.....	13	53	34	9	19	55	26	6	24	56	20	4
2100.....	12	50	38	11	18	54	28	8	24	55	21	5
2125.....	12	49	39	13	18	53	29	9	23	55	22	6
2150.....	12	48	41	15	18	52	30	10	23	54	23	7
						Number of persons (millions)						
2000.....	1 773	3 649	605	70	1 800	3 650	605	70	1 826	3 651	605	70
2025.....	1 461	4 634	1 179	148	1 836	4 807	1 180	149	2 220	4 978	1 181	149
2050.....	1 076	4 301	1 966	370	1 747	5 193	1 970	370	2 575	6 127	1 972	371
2075.....	822	3 388	2 193	568	1 724	5 166	2 428	572	3 125	7 373	2 650	570
2100.....	632	2 584	1 936	586	1 713	5 092	2 654	717	3 813	8 918	3 447	843
2125.....	488	1 989	1 597	530	1 707	5 078	2 788	824	4 667	10 914	4 404	1 173
2150.....	378	1 538	1 321	479	1 706	5 075	2 964	956	5 731	13 393	5 710	1 660

NOTE: The base of the percentages is the total population for the scenario and year. Percentages in the 0-14, 15-59 and 60+ columns add up to 100 except for rounding errors.

Thus, the impact of fertility on the age distribution may be greater, although less well recognized, than the impact of increasing life expectancy. In fact, the proportion of older persons also rises very substantially in the high fertility scenario for even this scenario involves a reduction of fertility and declining growth rates for the world population (table 7).

The rise in proportions of the oldest old, that is, persons aged 80 years or over, is even more pronounced than that of persons aged 60 years or over. High proportions of older persons are a characteristic feature of any demographic regime in which life expectancy is high and growth rates are low. Lower proportions of older persons may usually be realized only by raising growth rates or lowering life expectancy.

The changing numbers of persons at each age may be as important as their changing percentages in the total population. In the low scenario, for example, the number of persons in the labour force ages (15-59 years of age) rises to 4.6 billion by 2025 and then falls to 1.5 billion by 2150 (table 7), and the number of young persons (under 15 years of age) falls from 1.8 billion in 2000 to 378 million in 2150.

I. METHODOLOGY FOR LONG-RANGE PROJECTIONS

The long-range projections presented in this report extend and supplement the projections presented in *World Population Prospects: The 1998 Revision* (United Nations, 1999a, 1999b and 2000). The description of the methodology for producing the long-range projections therefore begins with a brief summary of the methodology used to produce the projections of the *1998 Revision*.

A. *WORLD POPULATION PROSPECTS: THE 1998 REVISION*

The *1998 Revision* presents population projections for each of the 228 countries and areas that constitute the populated world. For countries with a 1995 population of 150,000 persons or more, the projections of the population by sex and age-group are produced at five-year intervals from 1995 to 2050 using a cohort-component approach. For countries with a 1995 population of fewer than 150,000 persons, projections are made for the total population by sex based on assumptions about trends in population growth rates.

For each of the 184 countries with a 1995 population of 150,000 or more, four projection variants based on pre-established future levels of fertility, mortality and migration were produced. For each scenario, total fertility levels are specified for each quinquennial period and age-specific fertility rates consistent with those total fertility levels are calculated. The expectation of life at birth for males and females is also specified for each five-year period and survival ratios specific by sex and age-group that are consistent with the specified expectations of life are calculated. The same set of survival ratios is used in all projection variants. Lastly, the net number of international migrants is specified for each five-year period and distributed by age and sex on the basis of models. The projection results for each variant include the future number of persons in each sex and age group and the future number of births to women in each five-year age group between ages 15 and 49.

The four variants, summarized here, are based on different assumptions about future levels of fertility. A detailed description of those assumptions can be found in the *1998 Revision*, volume III (United Nations, 2000).

In the medium variant, the fertility of countries that in 1990-1995 had a total fertility above replacement level (i.e., higher than 2.1 children per woman) is projected to reach replacement level at some point before 2050 and to remain at that level from the time it reaches it until 2050. For countries that in 1990-1995 had a total fertility at or below replacement level, total fertility is projected to remain below replacement level during 1995-2050.

In the high variant, the fertility of countries that had a total fertility above replacement level in 1990-1995 is projected to reach 2.6 children per woman at some point before 2050 and to remain at that level from the time it reaches it until 2050. Countries with fertility at or below replacement level in 1990-1995 are projected to have a total fertility 0.4 children higher than that of the medium variant.

In the low variant, the fertility of countries that had a total fertility above replacement level in 1990-1995 is projected to reach 1.6 children per woman at some point before 2050 and to remain at that level from the time it reaches it until 2050. Countries with fertility at or below replacement level in 1990-1995 are projected to have a total fertility 0.4 children lower than that of the medium variant.

In the constant variant, the fertility of each country is assumed to remain constant during 1995-2050, at the same level as in 1990-1995.

The results of each variant at the country level are combined, as appropriate, to produce the results of the equivalent projection variant for the major areas. Thus, the numbers of persons projected for a major area are obtained by summing

the corresponding projected numbers for the constituent countries. Special procedures are required to make allowance for the contribution of countries whose population in 1995 was less than 150,000 persons, since their projections are not made by age and sex.

To obtain future levels of fertility and mortality for major areas, the appropriately weighted averages of country-level parameters are calculated. Consequently, at the level of the major areas, the values of fertility and mortality indicators are outputs of the projection procedure rather than inputs to it, since they result from the appropriate aggregation of data for individual countries. For instance, the total fertility for the world in 2000-2005 produced by the medium variant (2.57 children per woman as shown in table 4) does not represent an assumed level for the world but is instead the result of the assumptions made for each country individually.

The total fertility for any group of countries depends not only on the total fertility of each country in the group, but also on the levels of mortality and migration of those countries. Mortality and migration influence the relative population size of the countries in the group and therefore affect the weights applied in aggregating their total fertility levels. For the same reason, the expectation of life at birth for a group of countries depends on the assumed levels of fertility and migration for each country in the group as well as on the expectation of life for each of them.

The aggregation of results for countries, producing major areas, and for major areas, producing projections for the world as a whole, results in trends that may appear puzzling. For instance, in the constant-fertility scenario the total fertility for the world rises between 1995 and 2050. This is a result of the assumption of constant fertility for each country, which implies that countries with higher fertility levels and therefore higher growth rates will have an expanding share of the world population over time. As time goes by, countries with higher initial levels of fertility weigh increasingly heavily in the calculation of total world fertility, causing it to rise.

B. THE LONG-RANGE PROJECTIONS

The overall approach to producing the long-range projections was similar to that used for the *1998 Revision*. The cohort-component method was used, and assumptions about future fertility and mortality were expressed in terms of total fertility and expectation of life at birth by sex per quinquennial period.

The long-range projections were produced for eight major areas and for the world as a whole, but not for each country separately. When the long-range projection results were not a direct extension of the *1998 Revision* results, levels of fertility and mortality for the period 2025-2050 were specified separately for the eight major areas only.

The eight major areas include Africa, Europe, Latin America and the Caribbean, Northern America, Oceania, Asia excluding China and India, China and India. The countries included in each major area are listed in table 8.

For each major area, seven basic scenarios of the long-term dynamics of population growth were prepared. A description of the characteristics and assumptions underlying each different scenario is given below (see box). The basic scenarios differ from each other mainly with respect to the assumptions made about the future course of fertility. In addition, two versions of each of the first six scenarios were calculated: one assumed a steady increase in the expectation of life based on models (table 15) and the other set the expectation of life constant over the projection period. For each scenario, therefore, two versions were created: a "normal" one with increasing life expectancy and a constant-mortality version that served as a basis for assessing the impact that declining mortality would have in the long run. Because the constant-mortality versions were produced only for analytical purposes, they are rarely referred to in the rest of this report. Consequently, attention is focused primarily on the versions of the different scenarios where the expectation of life increases steadily.

In the seven scenarios with an increasing life expectancy, the path followed by the male and

TABLE 8. COUNTRIES CONSTITUTING THE SIX MAJOR WORLD REGIONS, 1995 POPULATION
(*Thousands*)

Name	*1995 Population*	*Name*	*1995 Population*	*Name*	*1995 Population*
		Africa			
Algeria	28 058	Ethiopia	55 354	Nigeria	98 952
Angola	10 972	Gabon	1 077	Réunion	655
Benin	5 336	Gambia	1 111	Rwanda	5 259
Botswana	1 474	Ghana	17 649	Sao Tome and Principe	133
Burkina Faso	10 415	Guinea	7 153	Senegal	8 330
Burundi	6 156	Guinea-Bissau	1 086	Seychelles	73
Cameroon	13 182	Kenya	27 216	Sierra Leone	4 188
Cape Verde	381	Lesotho	1 926	Somalia	8 201
Central African Republic	3 288	Liberia	2 090	South Africa	37 470
Chad	6 707	Libyan Arab Jamahiriya	4 967	St. Helena	6
Comoros	606	Madagascar	13 744	Sudan	26 617
Congo	2 561	Malawi	9 670	Swaziland	873
Côte d'Ivoire	13 528	Mali	9 944	Togo	4 060
Democratic Republic		Mauritania	2 329	Tunisia	8 943
of the Congo	45 421	Mauritius	1 114	Uganda	18 935
Djibouti	601	Morocco	25 966	United Rep. of Tanzania	29 925
Egypt	62 282	Mozambique	17 388	Western Sahara	248
Equatorial Guinea	399	Namibia	1 543	Zambia	8 193
Eritrea	3 187	Niger	9 150	Zimbabwe	10 871
		Asia			
Afghanistan	19 663	Iran (Islamic Republic of)	62 324	Pakistan	136 244
Armenia	3 574	Iraq	20 095	Philippines	68 354
Azerbaijan	7 563	Israel	5 566	Qatar	548
Bahrain	558	Japan	125 472	Republic of Korea	44 949
Bangladesh	118 616	Jordan	5 734	Saudi Arabia	18 253
Bhutan	1 847	Kazakhstan	16 507	Singapore	3 321
Brunei Darussalam	294	Kuwait	1 690	Sri Lanka	17 920
Cambodia	9 982	Kyrgyzstan	4 571	Syrian Arab Republic	14 200
China	1 220 516	Lao People's		Tajikistan	5 750
China, Hong Kong SAR	6 224	Democratic Republic	4 773	Thailand	58 610
Cyprus	744	Lebanon	3 009	Turkey	61 276
Democratic People's		Macau	430	Turkmenistan	4 078
Republic of Korea	22 239	Malaysia	20 108	United Arab Emirates	2 210
East Timor	814	Maldives	249	Uzbekistan	22 480
Gaza Strip	905	Mongolia	2 451	Viet Nam	73 866
Georgia	5 250	Myanmar	42 877	Yemen	15 022
India	933 665	Nepal	21 272		
Indonesia	197 464	Oman	2 155		
		Europe			
Albania	3 177	Gibraltar	26	Poland	38 610
Andorra	64	Greece	10 489	Portugal	9 856
Austria	8 001	Holy See	1	Republic of Moldova	4 376
Belarus	10 391	Hungary	10 227	Romania	22 731
Belgium	10 088	Iceland	268	Russian Federation	148 097
Bosnia and Herzegovina	3 415	Ireland	3 609	San Marino	25
Bulgaria	8 499	Isle of Man	74	Slovakia	5 355
Channel Islands	148	Italy	57 338	Slovenia	1 990
Croatia	4 493	Latvia	2 537	Spain	39 568
Czech Republic	10 325	Liechtenstein	31	Sweden	8 800
Denmark	5 225	Lithuania	3 726	Switzerland	7 143

TABLE 8 (*continued*)

Name	*1995 Population*	*Name*	*1995 Population*	*Name*	*1995 Population*
Estonia	1 486	Luxembourg	407	The former Yugoslav Republic of Macedonia	1 963
Faeroe Islands	45	Malta	375	Ukraine	51 432
Finland	5 108	Monaco	32	United Kingdom of Great Britain and Northern Ireland	58 308
France	58 020	Netherlands	15 459	Yugoslavia	10 567
Germany	81 661	Norway	4 349		
		Latin America and the Caribbean			
Anguilla	8	Dominican Republic	7 823	Nicaragua	4 426
Antigua and Barbuda	66	Ecuador	11 460	Panama	2 631
Argentina	34 768	El Salvador	5 669	Paraguay	4 828
Aruba	82	Falkland Islands (Malvinas)	2	Peru	23 532
Bahamas	280	French Guiana	147	PuertoRico	3 715
Barbados	264	Grenada	92	Saint Kitts and Nevis	40
Belize	213	Guadeloupe	424	Saint Lucia	144
Bolivia	7 414	Guatemala	9 976	Saint Vincent and the Grenadines	110
Brazil	159 346	Guyana	830	Suriname	409
British Virgin Islands	19	Haiti	7 560	Trinidad and Tobago	1 262
Cayman Islands	32	Honduras	5 654	Turks and Caicos Islands	14
Chile	14 210	Jamaica	2 473	Uruguay	3 218
Colombia	38 542	Martinique	379	United States Virgin Islands	97
Costa Rica	3 554	Mexico	91 145	Venezuela	21 844
Cuba	10 964	Montserrat	11		
Dominica	71	Netherlands Antilles	205		
		Northern America			
Bermuda	62	Greenland	56	United States of America	267 020
Canada	29 617	St. Pierre and Miquelon	6		
		Oceania			
American.Samoa	57	Marshall Islands	55	Samoa	168
Australia	17 946	Nauru	11	Solomon Islands	379
Cook Islands	19	New Caledonia	193	Tokelau	2
Micronesia (Federated States of)	107	New Zealand	3 671	Tonga	97
Fiji	768	Niue	2	Tuvalu	10
French Polynesia	215	Northern Mariana Islands	59	Vanuatu	169
Guam	151	Palau	17	Wallis and Futuna Islands	14
Kiribati	78	Papua New Guinea	4 301		
		Pitcairn	0		

Source: World Population Prospects: The 1998 Revision, vol. I, *Comprehensive Tables* (United Nations publication, Sales No. E.99.XIII.9).

female life expectancies at the level of each major area was the same for all scenarios. Slight differences between the life expectancies of major areas in the different scenarios arose as a result of the aggregation of country-level projections before 2050 (tables 10-13). Only in the cases of China and India, where no aggregation took place, were the expectations of life at birth identical in all projection scenarios (table 14).

As already noted, the main differences among the scenarios stem from the distinct paths of fertility change that they incorporate. The starting points of each scenario are, however, slightly dif-

Long-range projection scenarios and their underlying assumptions				
Long-range scenario	*Take-off point for long-range scenario (1998 Revision)*	*Beginning period for the long-range scenario*	*Fertility assumptions*	*Mortality assumptions*
Low scenario	Low variant	2050-2055	Total fertility stays at the level reached in 2045-2050 for the low variant of the *1998 Revision*. For each major area, this level tends to range between 0.45 and 0.6 children below the total fertility of the medium scenario.	e_0 increasing according to model e_0 constant at level reached in 2045-2050
Medium scenario	Medium variant	2050-2055	Total fertility stays or converges to replacement level in all major areas. This means that in low-fertility areas it increases to replacement level.	e_0 increasing according to model e_0 constant at level reached in 2045-2050
High scenario	High variant	2050-2055	For high-fertility major areas total fertility stays at the level it reached in 2045-2050 in the high variant of the *1998 Revision*. For low-fertility areas total fertility rises to 2.5 or 2.55 children per woman.	e_0 increasing according to model e_0 constant at level reached in 2045-2050
Low-medium scenario	Low variant	2025-2030	Total fertility takes off at the level reached in 2020-2025 of the low variant of the *1998 Revision* and converges to 1.85 children per woman following a path that falls between that of the low and medium variants of the *1998 Revision*.	e_0 increasing according to model e_0 constant at level reached in 2020-2025
High-medium scenario	High variant	2025-2030	Total fertility takes off at the level reached in 2020-2025 for the high variant of the *1998 Revision* and converges to 2.25 children per woman following a path that falls between that of the high and medium variants of the *1998 Revision*.	e_0 increasing according to model e_0 constant at level reached in 2020-2025
Constant-fertility scenario	Constant variant	2050-2055	For each major area total fertility remains constant at the level reached in 2045-2050	e_0 increasing according to model e_0 constant at level reached in 2045-2050
Instant-replacement scenario	Estimates	1995-2000	Total fertility drops to replacement level in 1995-2000 for each major area and is modified, as necessary, to ensure that the net reproduction rate remains equal to 1 even as mortality declines.	e_0 increasing according to model

ferent. Because the long-range scenarios were intended to be continuations of the medium-range projections presented in the *1998 Revision* they should ideally have started where the *1998 Revision* variants ended. That is the case for the low, medium, high and constant-fertility scenarios which are the direct extension, at the level of major areas, of the low, medium, high and constant-fertility variants of the *1998 Revision* (see box). However, the low-medium and the high-medium scenarios have no direct counterpart in the *1998 Revision* variants. Instead, a transition period is required to place their fertility trajectories at approximately halfway between those of the low and medium or high and medium variants respectively. To do so, the low-medium and high-medium scenarios take off in 2025-2030 (instead of 2050-2055 as the low, medium and high scenarios) and start at levels corresponding to the low and high variants respectively (see box). Similarly, the instant-replacement scenario, which has no counterpart in the *1998 Revision*, starts in 1995-2000 so as to embody the effects of achieving replacement-level fertility instantly and maintaining it over the whole projection period (until 2150).

The general trajectories of total fertility set for each scenario are summarized in the box on page 18 and the actual total fertility levels used for projection purposes are shown in table 9. A short description of the fertility trends assumed under each scenario is presented below.

The medium scenario extends the medium variant of the *1998 Revision* from 2050 to 2150. Total fertility was assumed to remain or rise to replacement level in all major areas. Replacement level was calculated on the basis of the mortality level prevalent in each major area in 2145-2150 (when mortality is low, the level of total fertility ensuring replacement is slightly lower than 2.1 children per women). For high-fertility areas (Africa, Latin America and the Caribbean, Asia excluding China and India, and India), total fertility remains essentially constant between 2050 and 2150 (table 9). In low-fertility areas total fertility rises to replacement level and remains constant thereafter. The return of total fertility to replacement level occurs in 2060-2065 for Oceania; 2065-2070 for Northern America and China; and 2070-2075 for Europe. Male and female life expectancies for each major area increase gradually over the projection period (tables 10 and 14).

The high scenario extends the high variant of the *1998 Revision* from 2050 to 2150. For high-fertility areas total fertility remains constant at the level reached in 2045-2050 in the high variant, a level approximately 0.5 children per woman above replacement level (table 9). For low-fertility areas, total fertility rises to 2.5 children per woman between 2050 and 2075, except in Oceania where it rises to 2.54 children per woman. Male and female life expectancies for each major area increase gradually over the projection period (tables 11 and 14).

The low scenario extends the low variant of the *1998 Revision* from 2050 to 2150. Total fertility in all major areas remains constant after 2050 at the level it reached in 2045-2050 in the low variant, which is approximately 0.5 children per woman below replacement level (table 9). Male and female life expectancies for each major area increase gradually over the projection period (tables 12 and 14).

The high-medium scenario starts with the fertility level of the high variant of the *1998 Revision* on 2025-2030. In high-fertility areas, total fertility declines to a level approximately 0.20 children per woman higher than replacement level at some point between 2025 and 2075 and remains constant thereafter (table 9). In low-fertility areas, total fertility changes in such a way that it remains approximately 0.2 children per woman above the total fertility of the medium scenario during the period 2025-2150 (table 9). Male and female life expectancies for each major area increase gradually over the projection period (tables 11 and 14).

The low-medium scenario starts with the fertility of the low variant of the *1998 Revision* for 2025-2030. In all major areas except Africa, total fertility increases to a level approximately 0.20 children per woman lower than replacement level over the period 2025-2075 (table 9). For Africa, total fertility decreases until it reaches the same level. Male and female life expectancies for each major world area increase gradually (tables 12 and 14).

TABLE 9. PROJECTED TOTAL FERTILITY FOR THE EIGHT MAJOR AREAS AND EACH OF SEVEN SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	Low	Low-medium	Medium	High-medium	High	Constant
			Africa				
1995-2000	2.642	—	—	—	—	—	—
2000-2005	2.647	—	—	—	—	—	—
2005-2010	2.580	—	—	—	—	—	—
2010-2015	2.481	—	—	—	—	—	—
2015-2020	2.391	—	—	—	—	—	—
2020-2025	2.318	—	—	—	—	—	—
2025-2030	2.257	—	2.400	—	3.240	—	—
2030-2035	2.208	—	2.140	—	2.910	—	—
2035-2040	2.172	—	1.950	—	2.580	—	—
2040-2045	2.146	—	1.900	—	2.400	—	—
2045-2050	2.126	—	1.870	—	2.300	—	—
2050-2055	2.104	1.600	1.850	2.048	2.250	2.600	5.858
2055-2060	2.090	1.600	1.850	2.048	2.250	2.600	5.858
2060-2065	2.083	1.600	1.850	2.048	2.250	2.600	5.858
2065-2070	2.077	1.600	1.850	2.048	2.250	2.600	5.858
2070-2075	2.073	1.600	1.850	2.048	2.250	2.600	5.858
2145-2150	2.048	1.600	1.850	2.048	2.250	2.600	5.858
			Europe				
1995-2000	2.101	—	—	—	—	—	—
2000-2005	2.097	—	—	—	—	—	—
2005-2010	2.095	—	—	—	—	—	—
2010-2015	2.091	—	—	—	—	—	—
2015-2020	2.088	—	—	—	—	—	—
2020-2025	2.085	—	—	—	—	—	—
2025-2030	2.084	—	1.364	—	2.055	—	—
2030-2035	2.081	—	1.417	—	2.025	—	—
2035-2040	2.080	—	1.470	—	1.995	—	—
2040-2045	2.078	—	1.523	—	1.965	—	—
2045-2050	2.076	—	1.550	—	1.950	—	—
2050-2055	2.076	1.350	1.588	1.810	1.988	2.220	1.608
2055-2060	2.075	1.350	1.663	1.880	2.063	2.300	1.608
2060-2065	2.074	1.350	1.738	1.950	2.138	2.386	1.608
2065-2070	2.072	1.350	1.813	2.020	2.213	2.470	1.608
2070-2075	2.072	1.350	1.850	2.064	2.250	2.500	1.608
2145-2150	2.064	1.350	1.850	2.064	2.250	2.500	1.608
			Latin America and the Caribbean				
1995-2000	2.173	—	—	—	—	—	—
2000-2005	2.154	—	—	—	—	—	—
2005-2010	2.135	—	—	—	—	—	—
2010-2015	2.120	—	—	—	—	—	—
2015-2020	2.112	—	—	—	—	—	—
2020-2025	2.105	—	—	—	—	—	—
2025-2030	2.101	—	1.688	—	2.608	—	—
2030-2035	2.096	—	1.724	—	2.529	—	—
2035-2040	2.093	—	1.760	—	2.449	—	—
2040-2045	2.089	—	1.796	—	2.369	—	—
2045-2050	2.085	—	1.832	—	2.290	—	—
2050-2055	2.083	1.597	1.850	2.060	2.250	2.593	4.066
2055-2060	2.081	1.597	1.850	2.060	2.250	2.593	4.066
2060-2065	2.079	1.597	1.850	2.060	2.250	2.593	4.066
2065-2070	2.077	1.597	1.850	2.060	2.250	2.593	4.066
2070-2075	2.075	1.597	1.850	2.060	2.250	2.593	4.066
2145-2150	2.060	1.597	1.850	2.060	2.250	2.593	4.066

Table 9 (*continued*)

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
				Northern America			
1995-2000	2.082	—	—	—	—	—	—
2000-2005	2.080	—	—	—	—	—	—
2005-2010	2.079	—	—	—	—	—	—
2010-2015	2.077	—	—	—	—	—	—
2015-2020	2.076	—	—	—	—	—	—
2020-2025	2.073	—	—	—	—	—	—
2025-2030	2.073	—	1.525	—	2.270	—	—
2030-2035	2.071	—	1.575	—	2.221	—	—
2035-2040	2.071	—	1.625	—	2.173	—	—
2040-2045	2.071	—	1.675	—	2.124	—	—
2045-2050	2.069	—	1.700	—	2.100	—	—
2050-2055	2.068	1.500	1.725	1.935	2.125	2.350	2.024
2055-2060	2.067	1.500	1.775	2.005	2.175	2.450	2.024
2060-2065	2.067	1.500	1.825	2.050	2.225	2.500	2.024
2065-2070	2.066	1.500	1.850	2.058	2.250	2.500	2.024
2070-2075	2.066	1.500	1.850	2.058	2.250	2.500	2.024
2145-2150	2.058	1.500	1.850	2.058	2.250	2.500	2.024
				Oceania			
1995-2000	2.164	—	—	—	—	—	—
2000-2005	2.152	—	—	—	—	—	—
2005-2010	2.140	—	—	—	—	—	—
2010-2015	2.130	—	—	—	—	—	—
2015-2020	2.121	—	—	—	—	—	—
2020-2025	2.113	—	—	—	—	—	—
2025-2030	2.107	—	1.658	—	2.462	—	—
2030-2035	2.102	—	1.693	—	2.382	—	—
2035-2040	2.097	—	1.728	—	2.301	—	—
2040-2045	2.093	—	1.763	—	2.220	—	—
2045-2050	2.091	—	1.780	—	2.180	—	—
2050-2055	2.089	1.553	1.798	2.020	2.198	2.460	3.353
2055-2060	2.087	1.553	1.833	2.060	2.233	2.510	3.353
2060-2065	2.085	1.553	1.850	2.066	2.250	2.540	3.353
2065-2070	2.083	1.553	1.850	2.066	2.250	2.540	3.353
2070-2075	2.081	1.553	1.850	2.066	2.250	2.540	3.353
2145-2150	2.066	1.553	1.850	2.066	2.250	2.540	3.353
				Asia excluding China and India			
1995-2000	2.294	—	—	—	—	—	—
2000-2005	2.243	—	—	—	—	—	—
2005-2010	2.204	—	—	—	—	—	—
2010-2015	2.169	—	—	—	—	—	—
2015-2020	2.146	—	—	—	—	—	—
2020-2025	2.125	—	—	—	—	—	—
2025-2030	2.116	—	1.769	—	2.633	—	—
2030-2035	2.107	—	1.787	—	2.480	—	—
2035-2040	2.101	—	1.805	—	2.327	—	—
2040-2045	2.096	—	1.823	—	2.250	—	—
2045-2050	2.093	—	1.841	—	2.250	—	—
2050-2055	2.089	1.580	1.850	2.064	2.250	2.560	4.238
2055-2060	2.087	1.580	1.850	2.064	2.250	2.560	4.238
2060-2065	2.085	1.580	1.850	2.064	2.250	2.560	4.238
2065-2070	2.083	1.580	1.850	2.064	2.250	2.560	4.238
2070-2075	2.081	1.580	1.850	2.064	2.250	2.560	4.238
2145-2150	2.064	1.580	1.850	2.064	2.250	2.560	4.238

Table 9 (*continued*)

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
				China			
1995-2000	2.244	—	—	—	—	—	—
2000-2005	2.200	—	—	—	—	—	—
2005-2010	2.179	—	—	—	—	—	—
2010-2015	2.150	—	—	—	—	—	—
2015-2020	2.142	—	—	—	—	—	—
2020-2025	2.134	—	—	—	—	—	—
2025-2030	2.129	—	1.525	—	2.283	—	—
2030-2035	2.122	—	1.575	—	2.248	—	—
2035-2040	2.119	—	1.625	—	2.213	—	—
2040-2045	2.115	—	1.675	—	2.178	—	—
2045-2050	2.114	—	1.700	—	2.100	—	—
2050-2055	2.110	1.500	1.725	1.940	2.125	2.350	1.918
2055-2060	2.108	1.500	1.775	2.010	2.175	2.450	1.918
2060-2065	2.106	1.500	1.825	2.080	2.225	2.500	1.918
2065-2070	2.105	1.500	1.850	2.090	2.250	2.500	1.918
2070-2075	2.103	1.500	1.850	2.090	2.250	2.500	1.918
2145-2150	2.090	1.500	1.850	2.090	2.250	2.500	1.918
				India			
1995-2000	3.560	—	—	—	—	—	—
2000-2005	2.395	—	—	—	—	—	—
2005-2010	2.335	—	—	—	—	—	—
2010-2015	2.280	—	—	—	—	—	—
2015-2020	2.236	—	—	—	—	—	—
2020-2025	2.194	—	—	—	—	—	—
2025-2030	2.160	—	1.600	—	2.600	—	—
2030-2035	2.137	—	1.625	—	2.565	—	—
2035-2040	2.122	—	1.675	—	2.495	—	—
2040-2045	2.109	—	1.725	—	2.425	—	—
2045-2050	2.102	—	1.775	—	2.355	—	—
2050-2055	2.098	1.600	1.825	2.100	2.285	2.600	3.550
2055-2060	2.093	1.600	1.850	2.065	2.250	2.600	3.550
2060-2065	2.088	1.600	1.850	2.065	2.250	2.600	3.550
2065-2070	2.084	1.600	1.850	2.065	2.250	2.600	3.550
2070-2075	2.081	1.600	1.850	2.065	2.250	2.600	3.550
2145-2150	2.063	1.600	1.850	2.065	2.250	2.600	3.550

NOTE: The medium, high, low and constant scenarios begin in 2050. The high-medium and low-medium scenarios begin in 2025. The instant replacement scenario begins in 1995.

The constant-fertility scenario extends the constant-fertility variant of the *1998 Revision* from 2050 to 2150. Total fertility in all major areas remains constant at the level reached in 2045-2050 (table 9). Male and female life expectancies for each major area increase gradually over the projection period (tables 13 and 14).

The instant-replacement scenario begins in 1995. For each major area, the level of fertility falls or rises, as necessary, to replacement level in the period 1995-2000 and remains at replacement level through 2150 (table 9). Male and female life expectancy for each major area is taken from the *1998 Revision* medium variant for 1995-2050. Male and female life expectancies for each major area increase gradually (tables 10 and 14). The replacement level of fertility generally falls as life expectancy increases, causing total fertility to decline, albeit very slowly.

The instant-replacement scenario shows what would happen if the levels of fertility that are reached in the long run in the medium scenario

TABLE 10. EXPECTATION OF LIFE AT BIRTH BY SEX FOR SIX MAJOR AREAS, MEDIUM AND INSTANTANEOUS REPLACEMENT SCENARIOS, 1995-2150

Period	*Africa*		*Europe*		*Latin America and the Caribbean*		*Northern America*		*Oceania*		*Asia excluding China and India* [a]	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
1995-2000	49.99	52.76	69.16	77.41	66.05	72.56	73.61	80.23	71.39	76.34	64.40	68.47
2000-2005	50.24	52.64	70.10	78.05	67.20	73.61	74.39	80.73	72.27	77.16	66.14	70.31
2005-2010	51.99	54.37	71.27	78.79	68.32	74.63	75.16	81.24	73.18	77.99	67.63	71.92
2010-2015	54.78	57.34	72.36	79.51	69.40	75.66	75.94	81.73	74.07	78.88	69.05	73.44
2015-2020	57.66	60.40	73.27	80.16	70.38	76.60	76.43	82.22	74.95	79.70	70.28	74.75
2020-2025	60.25	63.13	74.11	80.78	71.27	77.46	76.92	82.72	75.68	80.51	71.38	75.90
2025-2030	62.54	65.66	74.86	81.36	71.98	78.11	77.41	83.12	76.30	81.23	72.33	76.89
2030-2035	64.39	67.79	75.50	81.92	72.65	78.74	77.90	83.52	76.79	81.77	73.24	77.79
2035-2040	66.02	69.57	76.10	82.47	73.31	79.36	78.30	83.92	77.29	82.32	74.03	78.64
2040-2045	67.33	71.02	76.68	82.99	73.93	79.98	78.70	84.32	77.75	82.81	74.74	79.37
2045-2050	68.47	72.31	77.21	83.43	74.60	80.64	79.10	84.72	78.22	83.30	75.39	80.04
2050-2055	69.67	73.81	77.71	83.83	75.40	81.14	79.50	85.12	78.62	83.70	75.89	80.54
2055-2060	70.87	75.01	78.11	84.23	75.90	81.64	79.90	85.52	79.02	84.10	76.39	81.04
2060-2065	71.87	76.01	78.51	84.63	76.40	82.14	80.30	85.92	79.42	84.50	76.89	81.54
2065-2070	72.87	77.01	78.91	85.03	76.90	82.64	80.70	86.32	79.82	84.90	77.39	82.04
2070-2075	73.67	78.01	79.31	85.43	77.40	83.04	81.10	86.72	80.22	85.30	77.89	82.54
2075-2080	74.47	78.81	79.71	85.83	77.90	83.44	81.50	87.12	80.62	85.70	78.29	82.94
2080-2085	75.27	79.61	80.11	86.23	78.30	83.84	81.90	87.52	81.02	86.10	78.69	83.34
2085-2090	75.77	80.41	80.51	86.63	78.70	84.24	82.30	87.92	81.42	86.50	79.09	83.74
2090-2095	76.27	80.91	80.91	87.03	79.10	84.64	82.70	88.32	81.82	86.90	79.49	84.14
2095-2100	76.77	81.41	81.31	87.43	79.50	85.04	83.10	88.72	82.22	87.30	79.89	84.54
2100-2105	77.27	81.91	81.71	87.83	79.90	85.44	83.50	89.12	82.62	87.70	80.29	84.94
2105-2110	77.77	82.41	82.11	88.23	80.30	85.84	83.90	89.52	83.02	88.10	80.69	85.34
2110-2115	78.17	82.91	82.51	88.63	80.70	86.24	84.30	89.92	83.42	88.50	81.09	85.74
2115-2120	78.57	83.31	82.91	89.03	81.10	86.64	84.70	90.32	83.82	88.90	81.49	86.14
2120-2125	78.97	83.71	83.31	89.43	81.50	87.04	85.10	90.72	84.22	89.30	81.89	86.54
2125-2130	79.37	84.11	83.71	89.83	81.90	87.44	85.50	91.12	84.62	89.70	82.29	86.94
2130-2135	79.77	84.51	84.11	90.23	82.30	87.84	85.90	91.52	85.02	90.10	82.69	87.34
2135-2140	80.17	84.91	84.51	90.63	82.70	88.24	86.30	91.92	85.42	90.50	83.09	87.74
2140-2145	80.57	85.31	84.91	91.03	83.10	88.64	86.70	92.32	85.82	90.90	83.49	88.14
2145-2150	80.97	85.71	85.31	91.43	83.50	89.04	87.10	92.50	86.22	91.30	83.89	88.54

[a] Values for China and India are shown in table 14.

were attainted "instantly", that is, in 1995-2000. The high-medium and low-medium scenarios are produced because of the very large difference in world population size implied by the high and low scenarios in the long run. The high and low scenarios result in a world population of 24.8 billion and 3.2 billion persons respectively in 2150. The high-medium and low-medium scenarios result in a world population of 16.2 billion and 5.3 billion persons respectively in 2150.

The medium, high, low and constant scenarios *with constant mortality after 2050* extend the corresponding *1998 Revision* projections from 2050 to 2150. Fertility levels are the same as in the corresponding scenarios with rising life expectancy, but male and female expectation of life at birth remains constant during 2050-2150 at the level of the *1998 Revision* for 2045-2050.

The high-medium and low-medium scenarios *with constant mortality after 2025* begin in 2025-2030 as extensions of the high and low variants of the *1998 Revision*. Fertility levels are the same as in the corresponding scenarios with rising life expectancy, but male and female expectation of life at birth remains constant during 2025-2150 at the level of the *1998 Revision* for 2020-2025.

Finally, the different scenarios of the long-range projections assume that net international migration between the eight major areas is zero over the periods covered (2050-2150 for the low, medium, high and constant scenarios; 2025-2150 for the low-medium and high-medium scenarios; and 1995-2150 for the instant-replacement scenario). Although such an assumption is not realistic, either on the basis of past experience or in consideration of the shifts in age distribution that are

expected in the different major areas, which may provide some impetus for continued migration of working-age persons, the volatility of migration increases the uncertainty surrounding any projection of its future magnitude. Furthermore, although at the level of major areas population change caused by international migration may be significant, it is unlikely to be large in relation to changes resulting from fertility and mortality.

TABLE 11. EXPECTATION OF LIFE AT BIRTH BY SEX FOR SIX MAJOR AREAS, HIGH AND HIGH-MEDIUM SCENARIOS, 1995-2150

	Africa		*Europe*		*Latin America and the Caribbean*		*Northern America*		*Oceania*		*Asia excluding China and India*[a]	
Period	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
1995-2000	49.99	52.76	69.14	77.39	66.05	72.56	73.61	80.23	71.41	76.35	64.42	68.49
2000-2005	50.26	52.67	70.08	78.04	67.20	73.61	74.39	80.73	72.32	77.22	66.17	70.34
2005-2010	52.04	54.42	71.25	78.78	68.32	74.64	75.16	81.24	73.25	78.08	67.67	71.98
2010-2015	54.85	57.41	72.34	79.50	69.40	75.67	75.94	81.73	74.13	78.96	69.09	73.49
2015-2020	57.74	60.47	73.24	80.15	70.38	76.61	76.43	82.22	75.00	79.78	70.32	74.80
2020-2025	60.32	63.20	74.09	80.76	71.28	77.47	76.92	82.72	75.73	80.57	71.41	75.94
2025-2030	62.61	65.73	74.83	81.34	71.98	78.12	77.41	83.12	76.34	81.27	72.36	76.93
2030-2035	64.46	67.85	75.48	81.90	72.66	78.75	77.90	83.52	76.81	81.80	73.27	77.82
2035-2040	66.08	69.62	76.08	82.45	73.31	79.37	78.30	83.92	77.30	82.33	74.05	78.66
2040-2045	67.38	71.05	76.66	82.97	73.94	79.99	78.70	84.32	77.75	82.81	74.76	79.39
2045-2050	68.51	72.33	77.18	83.40	74.60	80.65	79.10	84.71	78.21	83.28	75.40	80.05
2050-2055	69.71	73.83	77.68	83.80	75.40	81.15	79.50	85.11	78.61	83.68	75.90	80.55
2055-2060	70.91	75.03	78.08	84.20	75.90	81.65	79.90	85.51	79.01	84.08	76.40	81.05
2060-2065	71.91	76.03	78.48	84.60	76.40	82.15	80.30	85.91	79.41	84.48	76.90	81.55
2065-2070	72.91	77.03	78.88	85.00	76.90	82.65	80.70	86.31	79.81	84.88	77.40	82.05
2070-2075	73.71	78.03	79.28	85.40	77.40	83.05	81.10	86.71	80.21	85.28	77.90	82.55
2075-2080	74.51	78.83	79.68	85.80	77.90	83.45	81.50	87.11	80.61	85.68	78.30	82.95
2080-2085	75.31	79.63	80.08	86.20	78.30	83.85	81.90	87.51	81.01	86.08	78.70	83.35
2085-2090	75.81	80.43	80.48	86.60	78.70	84.25	82.30	87.91	81.41	86.48	79.10	83.75
2090-2095	76.31	80.93	80.88	87.00	79.10	84.65	82.70	88.31	81.81	86.88	79.50	84.15
2095-2100	76.81	81.43	81.28	87.40	79.50	85.05	83.10	88.71	82.21	87.28	79.90	84.55
2100-2105	77.31	81.93	81.68	87.80	79.90	85.45	83.50	89.11	82.61	87.68	80.30	84.95
2105-2110	77.81	82.43	82.08	88.20	80.30	85.85	83.90	89.51	83.01	88.08	80.70	85.35
2110-2115	78.21	82.93	82.48	88.60	80.70	86.25	84.30	89.91	83.41	88.48	81.10	85.75
2115-2120	78.61	83.33	82.88	89.00	81.10	86.65	84.70	90.31	83.81	88.88	81.50	86.15
2120-2125	79.01	83.73	83.28	89.40	81.50	87.05	85.10	90.71	84.21	89.28	81.90	86.55
2125-2130	79.41	84.13	83.68	89.80	81.90	87.45	85.50	91.11	84.61	89.68	82.30	86.95
2130-2135	79.81	84.53	84.08	90.20	82.30	87.85	85.90	91.51	85.01	90.08	82.70	87.35
2135-2140	80.21	84.93	84.48	90.60	82.70	88.25	86.30	91.91	85.41	90.48	83.10	87.75
2140-2145	80.61	85.33	84.88	91.00	83.10	88.65	86.70	92.31	85.81	90.88	83.50	88.15
2145-2150	81.01	85.73	85.28	91.40	83.50	89.05	87.10	92.71	86.21	91.28	83.90	88.55

[a]Values for China and India are shown in table 14.

TABLE 12. EXPECTATION OF LIFE AT BIRTH BY SEX FOR SIX MAJOR AREAS, LOW AND LOW-MEDIUM SCENARIOS, 1995-2150

Period	*Africa*		*Europe*		*Latin America and the Caribbean*		*Northern America*		*Oceania*		*Asia excluding China and India*[a]	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
1995-2000	49.97	52.75	69.16	77.41	66.05	72.56	73.61	80.23	71.40	76.34	64.40	68.48
2000-2005	50.21	52.61	70.10	78.05	67.20	73.60	74.39	80.73	72.27	77.16	66.11	70.27
2005-2010	51.93	54.31	71.27	78.80	68.32	74.63	75.16	81.24	73.16	77.97	67.58	71.85
2010-2015	54.69	57.25	72.36	79.51	69.39	75.65	75.94	81.73	74.04	78.84	68.98	73.35
2015-2020	57.55	60.29	73.27	80.17	70.37	76.59	76.43	82.22	74.92	79.67	70.22	74.67
2020-2025	60.13	63.02	74.12	80.78	71.27	77.45	76.92	82.71	75.66	80.48	71.33	75.83
2025-2030	62.43	65.56	74.87	81.37	71.97	78.09	77.41	83.12	76.28	81.20	72.28	76.83
2030-2035	64.29	67.71	75.51	81.93	72.64	78.72	77.90	83.51	76.75	81.72	73.20	77.73
2035-2040	65.94	69.52	76.11	82.48	73.30	79.34	78.30	83.91	77.23	82.25	74.00	78.60
2040-2045	67.27	70.98	76.70	83.00	73.92	79.96	78.70	84.31	77.69	82.72	74.71	79.34
2045-2050	68.41	72.29	77.22	83.44	74.59	80.62	79.10	84.71	78.15	83.20	75.36	80.01
2050-2055	69.61	73.79	77.72	83.84	75.39	81.12	79.50	85.11	78.55	83.60	75.86	80.51
2055-2060	70.81	74.99	78.12	84.24	75.89	81.62	79.90	85.51	78.95	84.00	76.36	81.01
2060-2065	71.81	76.19	78.52	84.64	76.39	82.12	80.30	85.91	79.35	84.40	76.86	81.51
2065-2070	72.81	77.19	78.92	85.04	76.89	82.62	80.70	86.31	79.75	84.80	77.36	82.01
2070-2075	73.61	78.19	79.32	85.44	77.39	83.02	81.10	86.71	80.15	85.20	77.86	82.51
2075-2080	74.41	78.99	79.72	85.84	77.89	83.42	81.50	87.11	80.55	85.60	78.26	82.91
2080-2085	75.21	79.79	80.12	86.24	78.29	83.82	81.90	87.51	80.95	86.00	78.66	83.31
2085-2090	75.71	80.59	80.52	86.64	78.69	84.22	82.30	87.91	81.35	86.40	79.06	83.71
2090-2095	76.21	81.09	80.92	87.04	79.09	84.62	82.70	88.31	81.75	86.80	79.46	84.11
2095-2100	76.71	81.59	81.32	87.44	79.49	85.02	83.10	88.71	82.15	87.20	79.86	84.51
2100-2105	77.21	82.09	81.72	87.84	79.89	85.42	83.50	89.11	82.55	87.60	80.26	84.91
2105-2110	77.71	82.59	82.12	88.24	80.29	85.82	83.90	89.51	82.95	88.00	80.66	85.31
2110-2115	78.11	82.99	82.52	88.64	80.69	86.22	84.30	89.91	83.35	88.40	81.06	85.71
2115-2120	78.51	83.39	82.92	89.04	81.09	86.62	84.70	90.31	83.75	88.80	81.46	86.11
2120-2125	78.91	83.79	83.32	89.44	81.49	87.02	85.10	90.71	84.15	89.20	81.86	86.51
2125-2130	79.31	84.19	83.72	89.84	81.89	87.42	85.50	91.11	84.55	89.60	82.26	86.91
2130-2135	79.71	84.59	84.12	90.24	82.29	87.82	85.90	91.51	84.95	90.00	82.66	87.31
2135-2140	80.11	84.99	84.52	90.64	82.69	88.22	86.30	91.91	85.35	90.40	83.06	87.71
2140-2145	80.51	85.39	84.92	91.04	83.09	88.62	86.70	92.31	85.75	90.80	83.46	88.11
2145-2150	80.91	85.79	85.32	91.44	83.49	89.02	87.10	92.71	86.15	91.20	83.86	88.51

[a]Values for China and India are shown in table 14.

TABLE 13. EXPECTATION OF LIFE AT BIRTH BY SEX FOR SIX MAJOR AREAS, CONSTANT FERTILITY SCENARIO, 1995-2150

Period	*Africa*		*Europe*		*Latin America and the Caribbean*		*Northern America*		*Oceania*		*Asia excluding China and India*[a]	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
1995-2000	50.03	52.79	69.13	77.38	66.04	72.55	73.62	80.23	71.37	76.31	64.46	68.53
2000-2005	50.33	52.72	70.07	78.03	67.19	73.59	74.39	80.73	72.20	77.08	66.20	70.38
2005-2010	52.13	54.50	71.24	78.78	68.30	74.61	75.16	81.24	73.05	77.82	67.66	71.97
2010-2015	54.95	57.50	72.33	79.49	69.36	75.62	75.94	81.73	73.87	78.60	69.04	73.43
2015-2020	57.82	60.55	73.24	80.14	70.33	76.55	76.43	82.22	74.69	79.33	70.23	74.70
2020-2025	60.36	63.23	74.09	80.75	71.22	77.39	76.92	82.72	75.37	80.06	71.27	75.79
2025-2030	62.59	65.71	74.84	81.34	71.91	78.03	77.41	83.12	75.98	80.75	72.18	76.75
2030-2035	64.40	67.79	75.48	81.90	72.57	78.64	77.90	83.52	76.47	81.29	73.06	77.61
2035-2040	65.98	69.52	76.09	82.45	73.22	79.24	78.30	83.91	76.97	81.83	73.80	78.42
2040-2045	67.26	70.94	76.67	82.96	73.84	79.84	78.70	84.31	77.44	82.30	74.51	79.15
2045-2050	68.37	72.23	77.19	83.40	74.50	80.48	79.10	84.71	77.92	82.77	75.16	79.83
2050-2055	69.57	73.73	77.69	83.80	75.30	80.98	79.50	85.11	78.32	83.17	75.66	80.63
2055-2060	70.77	74.93	78.09	84.20	75.80	81.48	79.90	85.51	78.72	83.57	76.16	81.13
2060-2065	71.77	76.13	78.49	84.60	76.30	81.98	80.30	85.91	79.12	83.97	76.66	81.63
2065-2070	72.77	77.13	78.89	85.00	76.80	82.48	80.70	86.31	79.52	84.37	77.16	82.13
2070-2075	73.57	78.13	79.29	85.40	77.30	82.98	81.10	86.71	79.92	84.77	77.66	82.63
2075-2080	74.37	78.93	79.69	85.80	77.80	83.38	81.50	87.11	80.32	85.17	78.06	83.03
2080-2085	75.17	79.73	80.09	86.20	78.20	83.78	81.90	87.51	80.72	85.57	78.46	83.43
2085-2090	75.67	80.53	80.49	86.60	78.60	84.18	82.30	87.91	81.12	85.97	78.86	83.83
2090-2095	76.17	80.93	80.89	87.00	79.00	84.58	82.70	88.31	81.52	86.37	79.26	84.23
2095-2100	76.67	81.33	81.29	87.40	79.40	84.98	83.10	88.71	81.92	86.77	79.66	84.63
2100-2105	77.17	81.73	81.69	87.80	79.80	85.38	83.50	89.11	82.32	87.17	80.06	85.03
2105-2110	77.67	82.13	82.09	88.20	80.20	85.78	83.90	89.51	82.72	87.57	80.46	85.43
2110-2115	78.07	82.53	82.49	88.60	80.60	86.18	84.30	89.91	83.12	87.97	80.86	85.83
2115-2120	78.47	82.93	82.89	89.00	81.00	86.58	84.70	90.31	83.52	88.37	81.26	86.23
2120-2125	78.87	83.33	83.29	89.40	81.40	86.98	85.10	90.71	83.92	88.77	81.66	86.63
2125-2130	79.27	83.73	83.69	89.80	81.80	87.38	85.50	91.11	84.32	89.17	82.06	87.03
2130-2135	79.67	84.13	84.09	90.20	82.20	87.78	85.90	91.51	84.72	89.57	82.46	87.43
2135-2140	80.07	84.53	84.49	90.60	82.60	88.18	86.30	91.91	85.12	89.97	82.86	87.83
2140-2145	80.47	84.93	84.89	91.00	83.00	88.58	86.70	92.31	85.52	90.37	83.26	88.23
2145-2150	80.87	85.33	85.29	91.40	83.40	88.98	87.10	92.50	85.92	90.77	83.66	88.63

[a]Values for China and India are shown in table 14.

TABLE 14. EXPECTATION OF LIFE AT BIRTH BY SEX FOR CHINA AND INDIA, ALL SCENARIOS, 1995-2150

Period	China		India	
	Male	*Female*	*Male*	*Female*
1995-2000	67.90	72.00	62.28	62.92
2000-2005	69.10	73.50	63.46	64.92
2005-2010	70.30	74.70	64.90	66.85
2010-2015	71.30	75.90	66.18	68.57
2015-2020	72.30	76.90	67.34	70.34
2020-2025	73.30	77.90	68.83	72.10
2025-2030	74.10	78.70	70.00	73.39
2030-2035	74.90	79.50	71.02	74.52
2035-2040	75.70	80.30	71.72	75.37
2040-2045	76.20	80.80	72.41	76.21
2045-2050	76.70	81.30	73.01	76.90
2050-2055	77.20	81.80	73.81	77.90
2055-2060	77.70	82.30	74.61	78.70
2060-2065	78.10	82.80	75.41	79.50
2065-2070	78.50	83.20	75.91	80.30
2070-2075	78.90	83.60	76.41	80.80
2075-2080	79.30	84.00	76.91	81.30
2080-2085	79.70	84.40	77.41	81.80
2085-2090	80.10	84.80	77.91	82.30
2090-2095	80.50	85.20	78.31	82.80
2095-2100	80.90	85.60	78.71	83.20
2100-2105	81.30	86.00	79.11	83.60
2105-2110	81.70	86.40	79.51	84.00
2110-2115	82.10	86.80	79.91	84.40
2115-2120	82.50	87.20	80.31	84.80
2120-2125	82.90	87.60	80.71	85.20
2125-2130	83.30	88.00	81.11	85.60
2130-2135	83.70	88.40	81.51	86.00
2135-2140	84.10	88.80	81.91	86.40
2140-2145	84.50	89.20	82.31	86.80
2145-2150	84.90	89.60	82.71	87.20

TABLE 15. MODEL FOR THE IMPROVEMENT OF LIFE EXPECTANCY OVER TIME: QUINQUENNIAL GAINS ACCORDING TO INITIAL LEVEL

Initial life expectancy	*Gain in male life expectancy*	*Gain in female life expectancy*
55.0-57.5	2.5	2.5
57.5-60.0	2.5	2.5
60.0-62.5	2.3	2.5
62.5-65.0	2.0	2.5
65.0-67.5	1.5	2.3
67.5-70.0	1.2	2.0
70.0-72.5	1.0	1.5
72.5-75.0	0.8	1.2
75.0-77.5	0.5	1.0
77.5-80.0	0.4	0.8
80.0-82.5	0.4	0.5
82.5-85.0	0.4	0.4
85.0-87.5	0.4	0.4
87.5-92.5	0.4	0.4
92.5-97.5	0.4	0.4

II. WORLD POPULATION CHANGE

World population growth rates peaked at 2.04 per cent per year during 1965-1970 following at least two centuries of continuous increase. The first decline occurred after 1970, but the growth rate remained virtually constant between 1975 and 1990, at about 1.7 per cent per year. In 1990-1995, the most recent period for which an estimate is available, the growth rate dropped to 1.46 per cent per year. It is expected that the decline in the world population growth rate will continue. In the long-range projections the growth rate of the world population decreases even if future fertility levels follow the high scenario.

Despite this decline in growth rates, population growth is projected to continue for at least another four decades and may continue for another century or more. Growth rates are declining, but the growth momentum resulting from high growth rates in the past means that the population will continue to increase even as fertility declines.

The decline in the rates of population growth was caused primarily by a decline in the level of fertility. Although rising life expectancy has tended to increase population growth rates, the effect of declining fertility has been greater than the effect of increasing life expectancy.

A. POPULATION CHANGE: 1900-2150

The world population in 1900 is estimated to have been approximately 1.6 billion (United Nations, 1973). By 1950, when the *1998 Revision* series of estimates begins, it had grown by nearly 1 billion persons, to 2.5 billion. By 1995 more than 3 billion persons had been added, for an estimated world population of 5.7 billion persons.

The long-range projections show a wide range of possibilities for future population growth. World population rises to 24.8 billion persons in 2150 in the high scenario, but declines to 3.2 billion persons in the low scenario (table 16). This is a range of 21.6 billion persons, nearly four times the size of the current world population.

The difference in future fertility that produces this very large difference is remarkably modest. In the high scenario, the level of fertility moves to approximately 0.5 children per woman above replacement level. In the low scenario, the level moves to approximately 0.5 children per woman below replacement level. This is a difference of just 1 child per woman. National fertility levels estimated for 1990-1995 range from a low of fewer than 1.2 children per woman to a high of 7.6 children per woman, a range of 6.4 children per woman. Hence, in relation to the variation of levels in fertility observed today, the range embodied in the long-range projections is small.

Owing to the very large difference in the population yielded by the high and low scenarios, the high-medium and low-medium scenarios were introduced. In the high-medium scenario, fertility moves to approximately 0.20 children per woman above replacement level. In the low-medium scenario it moves to approximately 0.20 children per woman below replacement level. The difference between the high-medium and low-medium scenarios in the long run is thus only 0.4 children per woman, less than half the difference between the total fertility in the high and low scenarios.

Despite this small difference in the future fertility underlying the high-medium and the low-medium scenarios, a very large difference emerges in the projected future population. In the high-medium scenario, the world population in 2150 is 16.2 billion, nearly three times the 1995 world population (table 16). In the low-medium scenario it is 5.3 billion, 0.4 billion less than the 1995 world population. The difference between the two produces a range of just under 11 billion in 2150, about half the difference between the population projected under the high and low scenarios.

TABLE 16. WORLD POPULATION ACCORDING TO SEVEN PROJECTION SCENARIOS FOR 1995-2150 AND AS ESTIMATED FOR 1995
(*Millions*)

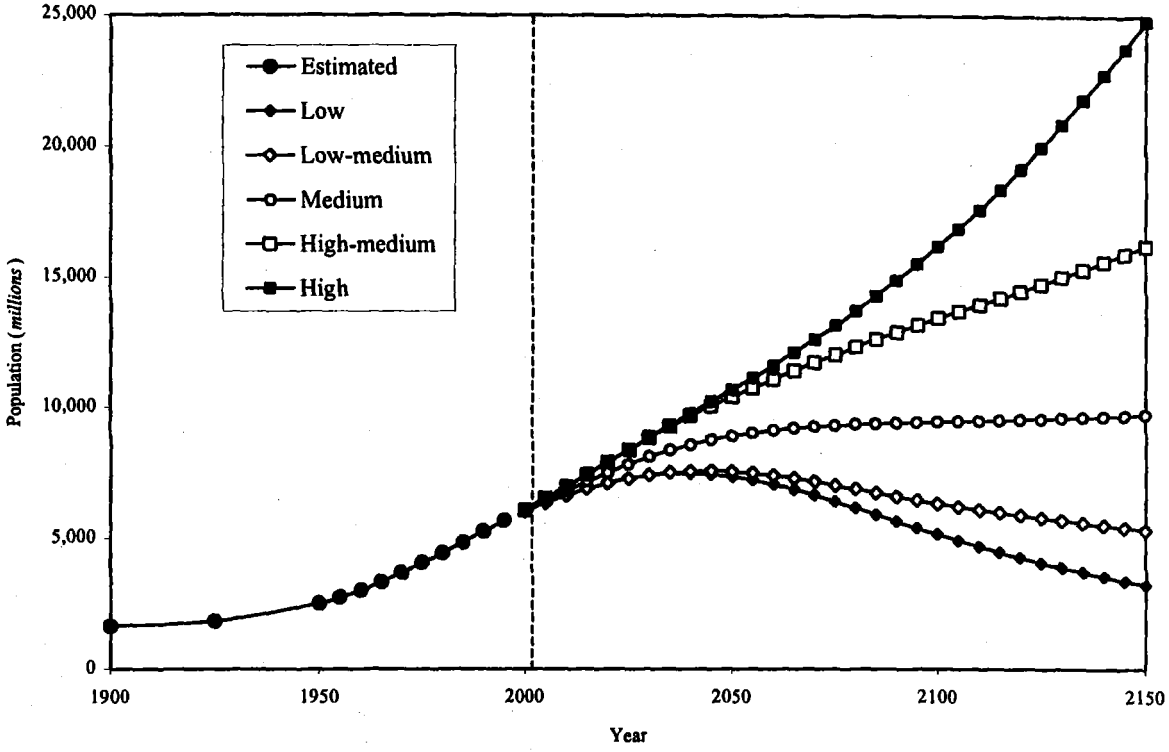
Years	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant-fertility*
1995	5 666	5 666	5 666	5 666	5 666	5 666	5 666
2000	5 962	6 028	6 028	6 055	6 082	6 082	6 113
2005	6 262	6 343	6 343	6 429	6 516	6 516	6 597
2010	6 571	6 621	6 621	6 795	6 966	6 966	7 128
2015	6 879	6 872	6 872	7 154	7 430	7 430	7 711
2020	7 166	7 095	7 095	7 502	7 904	7 904	8 352
2025	7 424	7 275	7 275	7 824	8 379	8 379	9 069
2030	7 654	7 397	7 413	8 112	8 843	8 850	9 877
2035	7 859	7 460	7 507	8 363	9 280	9 313	10 793
2040	8 038	7 468	7 558	8 577	9 683	9 769	11 837
2045	8 188	7 427	7 572	8 758	10 058	10 221	13 034
2050	8 310	7 343	7 547	8 909	10 409	10 674	14 421
2055	8 407	7 218	7 486	9 027	10 747	11 133	16 068
2060	8 485	7 054	7 397	9 124	11 080	11 609	17 991
2065	8 551	6 859	7 287	9 204	11 405	12 103	20 249
2070	8 609	6 639	7 162	9 269	11 721	12 616	22 908
2075	8 663	6 402	7 024	9 319	12 026	13 149	26 048
2080	8 716	6 152	6 876	9 357	12 321	13 702	29 755
2085	8 770	5 898	6 728	9 387	12 610	14 282	34 126
2090	8 825	5 644	6 585	9 415	12 893	14 888	39 277
2095	8 877	5 395	6 451	9 439	13 166	15 520	45 348
2100	8 924	5 153	6 324	9 459	13 430	16 178	52 508
2105	8 968	4 918	6 203	9 478	13 686	16 865	60 964
2110	9 011	4 691	6 089	9 497	13 942	17 587	70 956
2115	9 055	4 474	5 980	9 519	14 200	18 348	82 770
2120	9 098	4 268	5 877	9 545	14 464	19 147	96 748
2125	9 142	4 074	5 779	9 573	14 735	19 986	113 302
2130	9 184	3 890	5 685	9 604	15 015	20 866	132 927
2135	9 226	3 715	5 592	9 637	15 303	21 790	156 211
2140	9 267	3 548	5 502	9 671	15 601	22 758	183 865
2145	9 308	3 388	5 414	9 708	15 906	23 772	216 736
2150	9 349	3 236	5 329	9 746	16 218	24 834	255 846

Future world population for the five key scenarios is displayed graphically in figure 4, which includes population estimates starting from 1900 to provide historical perspective. The long-range projections demonstrate what demographers know from the mathematics of population growth, that even small differences in population growth rates, if sustained over a long period, lead to large differences in population size.

The constant-fertility scenario shows the absurdity of assuming that future fertility remains at 1990-1995 levels for more that 150 years while life expectancy continues to increase. Under this assumption, world population would rise to 256 billion persons by 2150 (table 16). The extreme improbability of actually reaching such a large population, even 150 years in the future, implies that either the level of fertility must continue to fall or the level of mortality will rise.

The instant-replacement scenario shows the population growth that would result if fertility in the eight major areas reached replacement level in

Figure 4. World population as estimated for 1900-1995 and as projected in five scenarios for 1995-2150



1995-2000 and remained at that level through 2150 (table 16). In the past, when most countries had fertility at or above replacement level, this scenario would represent very rapid fertility decline and might be expected to result in a lower projected population than the low-fertility scenario. In fact, the instant-replacement scenario shows a 2150 population only slightly lower than the medium scenario. This result can be explained by the fact that a large proportion of the world population already lives today in countries with below-replacement fertility. For these countries, the instant-replacement scenario represents a rapid rise in the level of fertility whereas the medium scenario maintains their fertility below replacement level until 2050.

B. POPULATION GROWTH RATES: 1900-2150

Population size tells only part of the story of world population growth. A more detailed picture is provided by examining population growth rates. The trend in past population numbers as displayed in figure 4, for example, might suggest that the high or high-medium scenario is a more likely path for future population size than the lower growth scenarios. However, consideration of population growth rates for the various scenarios suggests a different conclusion.

World population growth rates for the different projection scenarios vary widely, as might be expected from the large differences in projected populations (table 17). Even in the high scenario, however, growth rates decline steadily through 2060. In the high scenario, however, growth rates decline to a level only slightly below 1 per cent per year, whereas in the low scenario they fall below zero in 2040-2045.

Estimated growth rates decline irregularly between 1970 and 1995, with relatively rapid drops between 1970-1975 and 1975-1980 and between 1985-1990 and 1990-1995 and virtually no change between 1975 and 1990 (table 18, figure 5). Figure 5, like figure 4, includes estimated growth rates for 1900 to provide an historical perspective.

TABLE 17. WORLD POPULATION GROWTH RATES ACCORDING TO SEVEN PROJECTION SCENARIOS, 1995-2150
(*Percentage*)

Years	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant-fertility*
1995-2000.....	1.02	1.24	1.24	1.33	1.42	1.42	1.52
2000-2005.....	0.98	1.02	1.02	1.20	1.38	1.38	1.52
2005-2010.....	0.96	0.86	0.86	1.11	1.33	1.33	1.55
2010-2015.....	0.92	0.75	0.75	1.03	1.29	1.29	1.57
2015-2020.....	0.82	0.64	0.64	0.95	1.24	1.24	1.60
2020-2025.....	0.71	0.50	0.50	0.84	1.17	1.17	1.65
2025-2030.....	0.61	0.33	0.38	0.72	1.08	1.09	1.71
2030-2035.....	0.53	0.17	0.25	0.61	0.97	1.02	1.77
2035-2040.....	0.45	0.02	0.14	0.50	0.85	0.96	1.85
2040-2045.....	0.37	-0.11	0.04	0.42	0.76	0.90	1.93
2045-2050.....	0.29	-0.23	-0.07	0.34	0.69	0.87	2.02
2050-2055.....	0.23	-0.34	-0.16	0.26	0.64	0.84	2.16
2055-2060.....	0.19	-0.46	-0.24	0.21	0.61	0.84	2.26
2060-2065.....	0.15	-0.56	-0.30	0.17	0.58	0.83	2.36
2065-2070.....	0.14	-0.65	-0.35	0.14	0.55	0.83	2.47
2070-2075.....	0.13	-0.73	-0.39	0.11	0.51	0.83	2.57
2075-2080.....	0.12	-0.80	-0.42	0.08	0.48	0.83	2.66
2080-2085.....	0.12	-0.85	-0.44	0.07	0.46	0.83	2.74
2085-2090.....	0.12	-0.88	-0.43	0.06	0.44	0.83	2.81
2090-2095.....	0.12	-0.90	-0.41	0.05	0.42	0.83	2.87
2095-2100.....	0.11	-0.92	-0.40	0.04	0.40	0.83	2.93
2100-2105.....	0.10	-0.93	-0.39	0.04	0.38	0.83	2.99
2105-2110.....	0.10	-0.94	-0.37	0.04	0.37	0.84	3.04
2110-2115.....	0.10	-0.95	-0.36	0.05	0.37	0.85	3.08
2115-2120.....	0.10	-0.94	-0.35	0.05	0.37	0.85	3.12
2120-2125.....	0.09	-0.93	-0.34	0.06	0.37	0.86	3.16
2125-2130.....	0.09	-0.92	-0.33	0.06	0.38	0.86	3.19
2130-2135.....	0.09	-0.92	-0.33	0.07	0.38	0.87	3.23
2135-2140.....	0.09	-0.92	-0.33	0.07	0.39	0.87	3.26
2140-2145.....	0.09	-0.92	-0.32	0.08	0.39	0.87	3.29
2145-2150.....	0.09	-0.92	-0.32	0.08	0.39	0.87	3.32

As figure 5 shows, the overall decline in estimated growth rates from 1970 to 1995 is more consistent with the medium scenario than with the high-medium scenario. The decline of growth rates in the high-medium scenario, which occurs to a greater extent in the high scenario, is considerably slower than the observed decline in recent decades.

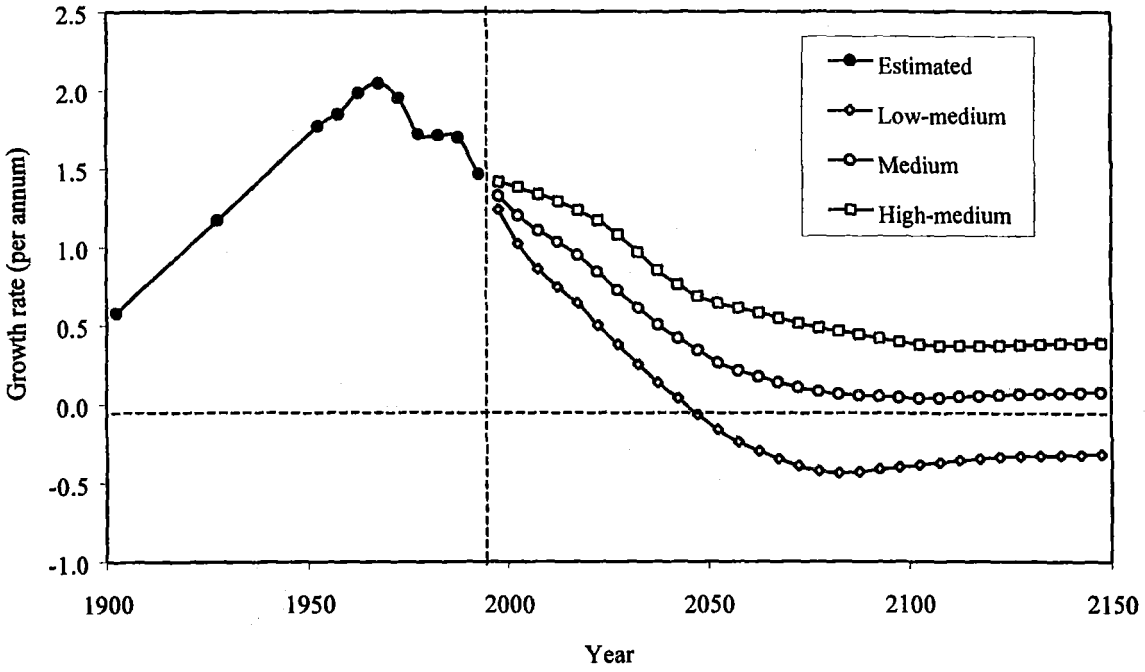
Growth rates in the constant-fertility scenario rise steadily over the entire projection period to over 3.3 per cent per year by 2145-2150 (table 17). These very high growth rates explain the extremely large projected population figures produced by this scenario. Despite the constancy of fertility at the level of major areas in the constant-fertility scenario, world population growth rates increase because the major areas with higher fertility grow more rapidly and therefore represent an increasing proportion of the world population. Hence, the world average, which is obtained by weighting the growth rates of major areas by the proportion of the population in those areas, is also increasingly dominated by the areas with the fastest growth. As a consequence, in the long run, the growth rate of the world population approaches that of the highest fertility areas.

TABLE 18. WORLD POPULATION CHANGE AS ESTIMATED FOR 1900-1995

Year	*Population (millions)*	*Period*	*Growth rate (percentage)*	*Total fertility*	*Expectation of life at birth (both sexes)*
1900	1 656	1900-1905	0.58	—	—
1925	1 850	1925-1930	1.17	—	—
1950	2 521	1950-1955	1.77	4.99	46.51
1955	2 755	1955-1960	1.85	4.92	49.59
1960	3 022	1960-1965	1.98	4.95	52.37
1965	3 337	1965-1970	2.04	4.90	56.01
1970	3 696	1970-1975	1.95	4.48	57.97
1975	4 075	1975-1980	1.72	3.92	59.75
1980	4 440	1980-1985	1.71	3.58	61.35
1985	4 837	1985-1990	1.70	3.34	63.09
1990	5 266	1990-1995	1.46	2.93	64.14
1995	5 666				

Source: 1900 population from *Determinants and Consequences of Population Trends, vol. I* (United Nations publication, Sales No. E.71.XIII.5), table II.1; 1925 value and growth rates graphically interpolated; values for 1950-2050 from *World Population Prospects: The 1998 Revision, vol. I, Comprehensive Tables* (United Nations publication, Sales No. E.99.XIII.9).

Figure 5. World population growth rates as estimated for 1900-1995 and according to three projection scenarios for 1995-2150



C. FERTILITY CHANGE: 1950-2100

The steady reduction in world population growth rates is caused by the decline of world fertility levels. Fertility in the world as a whole dropped from about 5 children per woman before 1970 to 2.9 children per woman in 1990-1995, the latest period for which an estimate is available (table 19, figure 6). This change implies a rate of decline of 0.84 children per woman per decade.

When estimated and assumed future fertility levels for each scenario are displayed graphically (figure 6 and table 19), the rate of fertility decline in the high-medium and medium scenarios is seen to be slower than the rate of fertility decline in recent decades. This observation suggests that the high-medium and even the medium scenarios are conservative in the assumed rate of fertility decline. For the next several decades, at least, the fertility levels of the low-medium scenario may be a more plausible extension of past fertility decline than those of the other scenarios.

D. INTERPRETATION OF THE SCENARIOS

The long-range projection scenarios are of two kinds. The low, low-medium, medium, high-medium and high scenarios represent possible future trajectories for world population change. The constant-fertility and instant-replacement scenarios are "analytical" scenarios, considered not because they are regarded as possible outcomes, but because it is useful to compare the population dynamics that result from them with those resulting from the other, more plausible scenarios.

None of the scenarios should be regarded as forecasts or predictions of future population. Accurate predictions of future population are not possible even over a time span of 50 years, much less over a period of 150 years. At the same time, the scenarios are not purely formal constructs devoid of predictive value. The levels of fertility in the high and low scenarios are judgementally chosen with the intention of providing a range within which future fertility levels are likely to fall. The constant-fertility scenario provides persuasive evidence that the level of world fertility will not remain constant for the next 150 years.

The medium scenario represents a conceptual dividing line between long-range future population increase and long-range population decline. Levels of fertility below those assumed in the medium scenario will, other things being equal,

Figure 6. World fertility level as estimated for 1950-1995 and according to three projection scenarios for 1995-2100

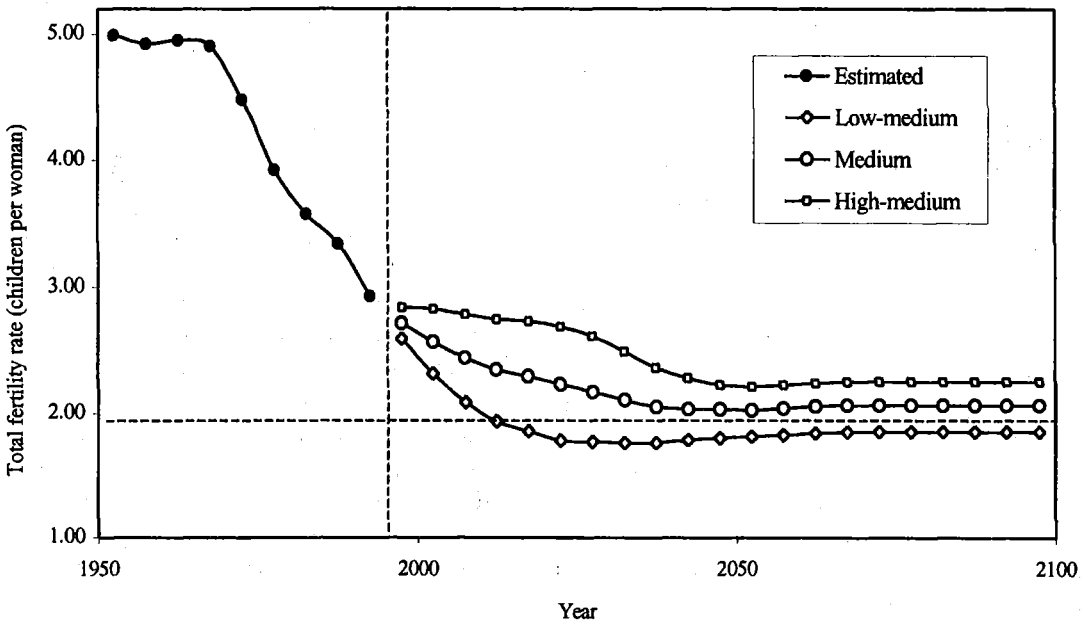


TABLE 19. TOTAL FERTILITY FOR THE WORLD ACCORDING TO SEVEN PROJECTION SCENARIOS, 1995-2150

Years	Scenario						
	Instant replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant-fertility*
1995-2000	2.29	2.59	2.59	2.71	2.84	2.84	3.07
2000-2005	2.27	2.31	2.31	2.57	2.83	2.83	3.14
2005-2010	2.24	2.09	2.09	2.44	2.78	2.78	3.22
2010-2015	2.20	1.94	1.94	2.35	2.75	2.75	3.30
2015-2020	2.18	1.86	1.86	2.29	2.73	2.73	3.41
2020-2025	2.15	1.78	1.78	2.23	2.69	2.69	3.52
2025-2030	2.14	1.71	1.77	2.17	2.61	2.63	3.63
2030-2035	2.12	1.64	1.76	2.10	2.49	2.57	3.74
2035-2040	2.11	1.58	1.76	2.05	2.36	2.52	3.86
2040-2045	2.11	1.56	1.78	2.03	2.28	2.50	3.98
2045-2050	2.10	1.56	1.80	2.03	2.23	2.51	4.10
2050-2055	2.09	1.56	1.81	2.02	2.21	2.52	4.18
2055-2060	2.09	1.56	1.83	2.04	2.23	2.54	4.26
2060-2065	2.09	1.56	1.84	2.06	2.24	2.56	4.34
2065-2070	2.08	1.56	1.85	2.06	2.25	2.56	4.42
2070-2075	2.08	1.56	1.85	2.06	2.25	2.57	4.49
2075-2080	2.08	1.56	1.85	2.06	2.25	2.57	4.55
2080-2085	2.08	1.56	1.85	2.06	2.25	2.57	4.61
2085-2090	2.08	1.56	1.85	2.06	2.25	2.57	4.67
2090-2095	2.08	1.57	1.85	2.06	2.25	2.57	4.73
2095-2100	2.07	1.57	1.85	2.06	2.25	2.57	4.78
2100-2105	2.07	1.57	1.85	2.06	2.25	2.57	4.83
2105-2110	2.07	1.57	1.85	2.06	2.25	2.57	4.88
2110-2115	2.07	1.57	1.85	2.06	2.25	2.57	4.93
2115-2120	2.07	1.57	1.85	2.06	2.25	2.57	4.97
2120-2125	2.07	1.57	1.85	2.06	2.25	2.57	5.01
2125-2130	2.07	1.57	1.85	2.06	2.25	2.57	5.05
2130-2135	2.07	1.57	1.85	2.06	2.25	2.57	5.09
2135-2140	2.07	1.57	1.85	2.06	2.25	2.57	5.13
2140-2145	2.07	1.57	1.85	2.06	2.25	2.57	5.16
2145-2150	2.07	1.57	1.85	2.06	2.25	2.57	5.19

eventually result in a declining world population. Levels of fertility above the medium scenario levels will result, other things being equal, in rising world population.

The scenarios are defined in purely demographic terms. They do not incorporate judgements about the impact on future population growth of such factors as the supply of fresh water, improvements in agricultural productivity in different parts of the world, or the extent and impact of environmental degradation. Taking account of such factors is likely to change judgements about the likelihood of different demographic outcomes.

E. ESTIMATED AND PROJECTED LIFE EXPECTANCY: 1950-2100

Future changes in the expectation of life at birth are likely to have relatively modest effects on population growth in comparison with future changes in fertility levels. This is not because mortality change is inherently less important than fertility change, but because past improvements in mortality have already raised the expectation of life far beyond the end of the reproductive age span. Future improvements in longevity can therefore affect population growth only by increasing the number of persons at older ages.

Estimated life expectancy at birth in 1950-1955 for the world as a whole was 46.5 years for both sexes combined (table 18). While world estimates are not available for earlier years, it is certain that this figure represents a very significant improvement over the preceding century.

The beginning of world mortality decline, unlike the beginning of world fertility decline, cannot be clearly documented by using official statistics. Even among countries with highly developed statistical systems, estimates of life expectancy as far back as 1900 are frequently unavailable. Keyfitz and Flieger (1968), attempting to gather official data for as many countries and periods as possible, were able to obtain life expectancy at birth circa 1900 for only five countries (Belgium, France, the Netherlands, Sweden, and the United Kingdom). Expectation of life at birth for both sexes in those countries around 1900 ranged from about 47 to 53 years.

Life expectancy in many other parts of the world would have been much lower, sometimes as low as 20 years and often no higher than 30 years. These levels, together with the rate of improvement in life expectancy after 1950 (slightly over 6 years per decade between 1950 and 1970), suggest that the world expectation of life at birth in 1900 might have been in the range of 20-35 years.

In any case, improvements in the chances of survival had by 1950 placed the expectation of life at birth close to the end of the reproductive ages (near 50 years), and by 1995 roughly 80 per cent of all persons born were expected to survive to age 50, the end of the reproductive age span.

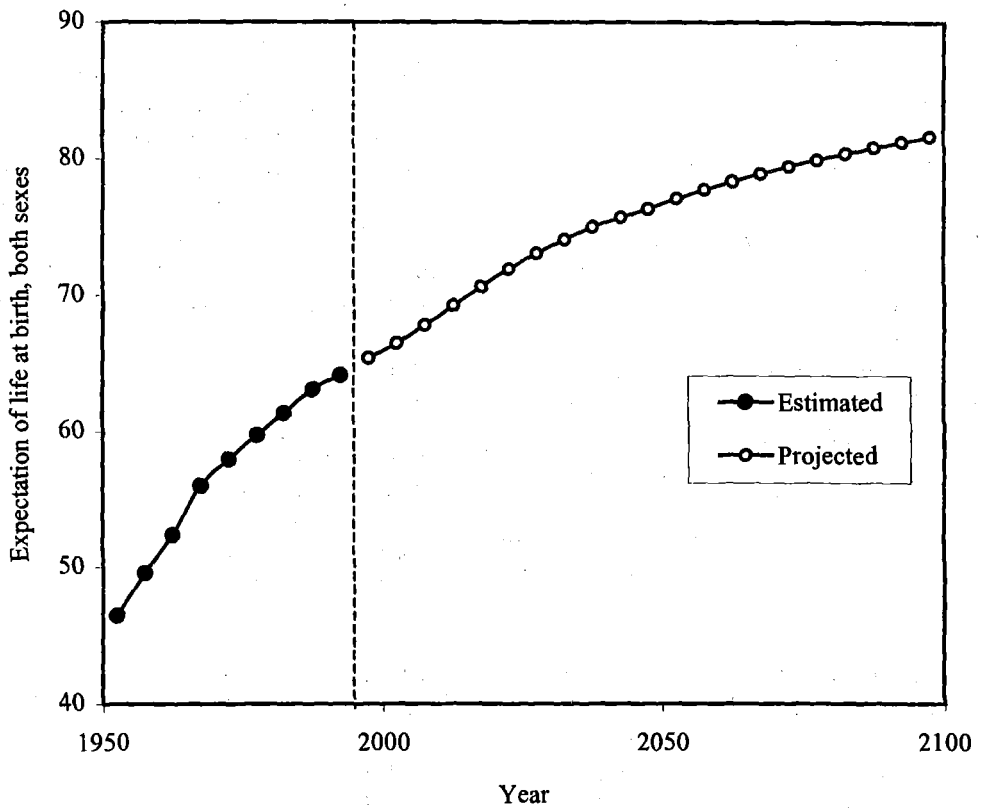
The future life expectancies by major area assumed in the seven main scenarios are nearly identical (tables 10-13), and they are identical for China and India (table 14). Differences of a few tenths of a year between the medium, high, low and constant-fertility scenarios for the major areas result from the different fertility levels at the country level for the corresponding variants in the *1998 Revision*, which change the relative population size of countries over time and therefore change the weight of each country in calculating life expectancy for each major area. In view of the very small differences between scenarios, only the life expectancies for the medium scenario will be discussed in this chapter.

Over the short-term future the medium scenario shows essentially the same rate of change in life expectancy as estimates for recent decades (table 20 and figure 7). As life expectancy reaches higher levels, the rate of increase slows. As the following section will show, projected future population is moderately sensitive to variation in life expectancy at the high levels it has already reached as well as those projected for the future.

TABLE 20. WORLD EXPECTATION OF LIFE AT BIRTH FOR MALES, FEMALES AND BOTH SEXES, MEDIUM SCENARIO, 1995-2150

Period	*Expectation of life at birth*		
	Male	*Female*	*Both*
1995-2000.....	63.3	67.6	65.4
2000-2005.....	64.3	68.7	66.5
2005-2010.....	65.6	70.1	67.8
2010-2015.....	67.0	71.6	69.3
2015-2020.....	68.3	73.0	70.6
2020-2025.....	69.6	74.3	71.9
2025-2030.....	70.7	75.5	73.1
2030-2035.....	71.7	76.5	74.1
2035-2040.....	72.6	77.4	75.0
2040-2045.....	73.3	78.2	75.7
2045-2050.....	73.9	78.8	76.3
2050-2055.....	74.6	79.6	77.1
2055-2060.....	75.3	80.2	77.7
2060-2065.....	76.0	80.8	78.3
2065-2070.....	76.5	81.4	78.9
2070-2075.....	77.1	81.9	79.4
2075-2080.....	77.6	82.4	79.9
2080-2085.....	78.1	82.8	80.4
2085-2090.....	78.5	83.3	80.9
2090-2095.....	78.9	83.7	81.3
2095-2100.....	79.3	84.1	81.7
2100-2105.....	79.7	84.5	82.1
2105-2110.....	80.1	84.9	82.5
2110-2115.....	80.5	85.4	82.9
2115-2120.....	80.9	85.7	83.3
2120-2125.....	81.3	86.1	83.7
2125-2130.....	81.7	86.5	84.1
2130-2135.....	82.1	86.9	84.5
2135-2140.....	82.5	87.3	84.9
2140-2145.....	82.9	87.7	85.3
2145-2150.....	83.3	88.1	85.7

Figure 7. World life expectancy, both sexes, as estimated for 1950-1995 and as projected for 1995-2100



F. EFFECT OF RISING LIFE EXPECTANCY ON POPULATION GROWTH

We turn now to the scenarios in which life expectancy is assumed to remain constant after 2025 or 2050. The purpose of these scenarios is to assess the impact of rising life expectancy on population growth by comparing the results of scenarios in which life expectancy remains constant to those of scenarios in which it increases.

The effects of improving life expectancy on population growth are substantial, though not as large as the effects of future fertility levels (table 21, figure 8). It suffices to compare population size and growth rates for the low-medium scenario, for which life expectancy rises, and the low-medium scenario with constant mortality after 2025; and similarly for the high-medium scenarios with rising and constant life expectancy.

In terms of population size no difference exists between the constant and declining mortality projections before 2025 and very little difference between them before 2050 (figure 8). Over the following 100 years, however, mortality decline adds about 1.3 billion persons to the world population in the low-medium scenario and about 3.4 billion in the high-medium scenario. The former represents a 31 per cent increase over the 4.1 billion persons projected for 2150 in the low-medium scenario with constant mortality after 2025. The latter represents a 27 per cent increase over the 12.8 billion persons projected for 2150 in the high-medium scenario with constant mortality after 2025.

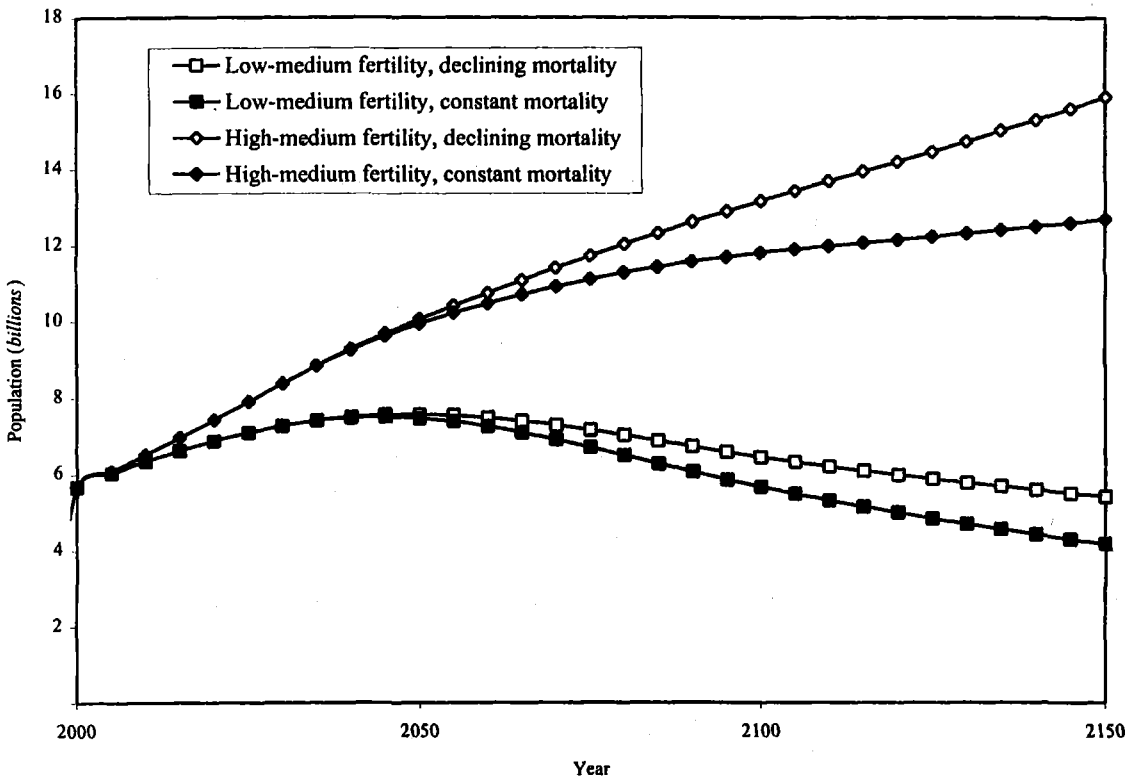
TABLE 21. WORLD POPULATION AND GROWTH RATES FOR FIVE FERTILITY SCENARIOS COMBINED WITH INCREASING AND CONSTANT LIFE EXPECTANCY, 1995-2150

	Low-fertility				*Low-medium fertility*				*Medium fertility*			
	Population (millions)		*Growth rate (percentage)*		*Population (millions)*		*Growth rate (percentage)*		*Population (millions)*		*Growth rate (percentage)*	
Year	*Life expectancy increasing*	*Life expectancy constant*	*Life expectancy increasing*	*Life expectancy constant*	*Life expectancy increasing*	*Life expectancy constant*	*Life expectancy increasing*	*Life expectancy constant*	*Life expectancy increasing*	*Life expectancy constant*	*Life expectancy increasing*	*Life expectancy constant*
1995.....	5 666	5 666	1.24	1.24	5 666	5 666	1.24	1.24	5 666	5 666	1.33	1.33
2000.....	6 028	6 028	1.02	1.02	6 028	6 028	1.02	1.02	6 055	6 055	1.20	1.20
2005.....	6 343	6 343	0.86	0.86	6 343	6 343	0.86	0.86	6 429	6 429	1.11	1.11
2010.....	6 621	6 621	0.75	0.75	6 621	6 621	0.75	0.75	6 795	6 795	1.03	1.03
2015.....	6 872	6 872	0.64	0.64	6 872	6 872	0.64	0.64	7 154	7 154	0.95	0.95
2020.....	7 095	7 095	0.50	0.50	7 095	7 095	0.50	0.50	7 502	7 502	0.84	0.84
2025.....	7 275	7 275	0.33	0.33	7 275	7 275	0.38	0.38	7 824	7 824	0.72	0.72
2030.....	7 397	7 397	0.17	0.17	7 413	7 413	0.25	0.20	8 112	8 112	0.61	0.61
2035.....	7 460	7 460	0.02	0.02	7 507	7 489	0.14	0.04	8 363	8 363	0.50	0.50
2040.....	7 468	7 468	-0.11	-0.11	7 558	7 506	0.04	-0.09	8 577	8 577	0.42	0.42
2045.....	7 427	7 427	-0.23	-0.23	7 572	7 472	-0.07	-0.22	8 758	8 758	0.34	0.34
2050.....	7 343	7 343	-0.34	-0.34	7 547	7 389	-0.16	-0.35	8 909	8 909	0.26	0.26
2055.....	7 218	7 218	-0.46	-0.51	7 486	7 261	-0.24	-0.45	9 027	9 027	0.21	0.17
2060.....	7 054	7 037	-0.56	-0.65	7 397	7 099	-0.30	-0.53	9 124	9 106	0.17	0.10
2065.....	6 859	6 813	-0.65	-0.77	7 287	6 912	-0.35	-0.60	9 204	9 154	0.14	0.05
2070.....	6 639	6 556	-0.73	-0.87	7 162	6 708	-0.39	-0.65	9 269	9 175	0.11	0.00
2075.....	6 402	6 276	-0.80	-0.96	7 024	6 492	-0.42	-0.69	9 319	9 174	0.08	-0.04
2080.....	6 152	5 982	-0.85	-1.02	6 876	6 273	-0.44	-0.69	9 357	9 155	0.07	-0.06
2085.....	5 898	5 685	-0.88	-1.06	6 728	6 059	-0.43	-0.68	9 387	9 126	0.06	-0.08
2090.....	5 644	5 393	-0.90	-1.08	6 585	5 856	-0.41	-0.67	9 415	9 091	0.05	-0.09
2095.....	5 395	5 109	-0.92	-1.11	6 451	5 664	-0.40	-0.65	9 439	9 051	0.04	-0.10
2100.....	5 153	4 834	-0.93	-1.12	6 324	5 482	-0.39	-0.64	9 459	9 007	0.04	-0.10
2105.....	4 918	4 570	-0.94	-1.13	6 203	5 310	-0.37	-0.63	9 478	8 961	0.04	-0.10
2110.....	4 691	4 318	-0.95	-1.13	6 089	5 146	-0.36	-0.61	9 497	8 916	0.05	-0.09
2115.....	4 474	4 081	-0.94	-1.12	5 980	4 991	-0.35	-0.60	9 519	8 874	0.05	-0.09
2120.....	4 268	3 859	-0.93	-1.11	5 877	4 843	-0.34	-0.60	9 545	8 835	0.06	-0.08
2125.....	4 074	3 650	-0.92	-1.11	5 779	4 701	-0.33	-0.59	9 573	8 798	0.06	-0.08
2130.....	3 890	3 452	-0.92	-1.12	5 685	4 564	-0.33	-0.59	9 604	8 762	0.07	-0.08
2135.....	3 715	3 264	-0.92	-1.12	5 592	4 431	-0.33	-0.59	9 637	8 727	0.07	-0.08
2140.....	3 548	3 087	-0.92	-1.12	5 502	4 302	-0.32	-0.59	9 671	8 693	0.08	-0.08
2145.....	3 388	2 919	-0.92	-1.11	5 414	4 178	-0.32	-0.59	9 708	8 660	0.08	-0.08
2150.....	3 236	2 761	—	—	5 329	4 057	—	—	9 746	8 626	—	—

Table 21 *(continued)*

Year	*High-medium fertility*				*High fertility*			
	Population (millions)		*Growth rate (percentage)*		*Population (millions)*		*Growth rate (percentage)*	
	Life expectancy increasing	*Life expectancy constant*	*Life expectancy increasing*	*Life expectancy constant*	*Life expectancy increasing*	*Life expectancy constant*	*Life expectancy increasing*	*Life expectancy constant*
1995	5 666	5 666	1.42	1.42	5 666	5 666	1.42	1.42
2000	6 082	6 082	1.38	1.38	6 082	6 082	1.38	1.38
2005	6 516	6 516	1.33	1.33	6 516	6 516	1.33	1.33
2010	6 966	6 966	1.29	1.29	6 966	6 966	1.29	1.29
2015	7 430	7 430	1.24	1.24	7 430	7 430	1.24	1.24
2020	7 904	7 904	1.17	1.17	7 904	7 904	1.17	1.17
2025	8 379	8 379	1.08	1.08	8 379	8 379	1.09	1.09
2030	8 843	8 843	0.97	0.92	8 850	8 850	1.02	1.02
2035	9 280	9 259	0.85	0.77	9 313	9 313	0.96	0.96
2040	9 683	9 621	0.76	0.65	9 769	9 769	0.90	0.90
2045	10 058	9 939	0.69	0.56	10 221	10 221	0.87	0.87
2050	10 409	10 219	0.64	0.49	10 674	10 674	0.84	0.84
2055	10 747	10 471	0.61	0.44	11 133	11 133	0.84	0.80
2060	11 080	10 704	0.58	0.39	11 609	11 589	0.83	0.77
2065	11 405	10 917	0.55	0.35	12 103	12 047	0.83	0.75
2070	11 721	11 108	0.51	0.30	12 616	12 508	0.83	0.74
2075	12 026	11 278	0.48	0.27	13 149	12 977	0.83	0.73
2080	12 321	11 430	0.46	0.24	13 702	13 457	0.83	0.72
2085	12 610	11 568	0.44	0.21	14 282	13 952	0.83	0.72
2090	12 893	11 692	0.42	0.18	14 888	14 464	0.83	0.72
2095	13 166	11 800	0.40	0.16	15 520	14 992	0.83	0.71
2100	13 430	11 894	0.38	0.14	16 178	15 536	0.83	0.72
2105	13 686	11 979	0.37	0.14	16 865	16 102	0.84	0.72
2110	13 942	12 061	0.37	0.14	17 587	16 693	0.85	0.73
2115	14 200	12 143	0.37	0.14	18 348	17 312	0.85	0.73
2120	14 464	12 229	0.37	0.15	19 147	17 958	0.86	0.74
2125	14 735	12 319	0.38	0.15	19 986	18 630	0.86	0.74
2130	15 015	12 411	0.38	0.15	20 866	19 330	0.87	0.74
2135	15 303	12 504	0.39	0.15	21 790	20 057	0.87	0.74
2140	15 601	12 600	0.39	0.15	22 758	20 812	0.87	0.74
2145	15 906	12 696	0.39	0.15	23 772	21 596	0.87	0.74
2150	16 218	12 793	—	—	24 834	22 410	—	—

Figure 8. Effect of rising life expectancy on population growth, 2025-2150



III. POPULATION CHANGE IN THE MAJOR WORLD AREAS AND THE CHANGING GEOGRAPHIC DISTRIBUTION OF POPULATION

The eight major areas on which the long-range projections are based have different demographic characteristics and face different demographic futures. Africa is likely to grow more rapidly than other areas and therefore to expand its share of world population. Europe and China are likely to grow more slowly than other areas and to reduce their share of world population.

If it were possible to assume that all major areas would follow the same scenario, such as the medium scenario, for example, relatively little uncertainty would exist about the future world population shares of each area. In fact, it is possible, if not likely, that different areas will tend to follow different scenarios. This possibility creates uncertainty over future world population shares, broadly comparable to the uncertainty over future population size.

Each of the five main scenarios—medium, low, low-medium, high-medium, and high—assumes that fertility in the eight major world areas converges towards a common level. In the medium scenario, for example, total fertility approaches replacement level in all areas. Despite this convergence, however, different areas grow at very different rates under the medium scenario. These differences reflect different levels of fertility in 1990-1995 and different age distributions in 1995. It is therefore appropriate to begin the discussion of future population change in the major world areas with a brief review of changes in these areas between 1950 and 1995.

A. POPULATION CHANGE IN THE EIGHT MAJOR WORLD AREAS, 1950-1995

Population has increased all over the world during the past half century, but some areas have experienced larger increases than others. The population of Africa more than tripled between 1950 and 1995, rising from 221 million to 697 million persons (table 22, top panel). At the other extreme, the population of Europe increased by only one third, rising from 547 million to 728 million persons.

In all the high-growth areas, growth rates peaked and began to decline sometime between 1960 and 1975, but the peak growth rate and the speed of decline varied greatly among major areas (table 22, second panel). The growth rate of Africa during 1990-1995 was 2.5 per cent per year, as compared with only 1.1 per cent per year for China.

Population growth rates dropped because fertility declined, and the pattern of reduction in growth rates reflects that of the fertility decline (table 22, third panel). During the 1950s, five of the eight major areas had high levels of fertility, ranging from 5.5 children per woman in Asia, excluding China and India, to 6.6 children per woman in Africa. By 1990-1995, fertility in Africa remained at 5.5 children per woman, while fertility in China had fallen to 1.9 children per woman.

With the striking exception of Europe between 1985-1990 and 1990-1995, all major areas experienced increasing life expectancy between 1950 and 1995 (table 22, bottom panel). Africa had the lowest expectations of life throughout the period, and life expectancy increased more slowly in Africa than in other areas. With the exception of Africa, life expectancy differences between major areas narrowed by almost one half between 1950 and 1995. China experienced exceptionally rapid increases in life expectancy between 1950 and 1965.

B. FUTURE POPULATION SIZE AND GROWTH RATES OF THE MAJOR AREAS

The broad patterns of future population change in the eight major areas are generally similar to the pattern for the world as a whole. The low and

TABLE 22. POPULATION, GROWTH RATES, TOTAL FERTILITY AND EXPECTATION OF LIFE AT BIRTH FOR BOTH SEXES, FOR THE EIGHT MAJOR WORLD AREAS, 1950-1995

Year	*Africa*	*Europe*	*Latin America and the Caribbean*	*Northern America*	*Oceania*	*Asia excluding China and India*	*China*	*India*
				Population (millions)				
1950	221	547	167	172	12.6	490	555	358
1955	246	575	191	187	14.1	538	609	395
1960	277	605	218	204	15.7	602	657	442
1965	314	635	250	220	17.5	676	729	495
1970	357	656	285	232	19.3	761	831	555
1975	406	676	322	243	21.4	857	928	621
1980	467	693	361	255	22.7	954	999	689
1985	536	707	401	268	24.5	1 063	1 070	768
1990	615	722	440	282	26.4	1 175	1 155	851
1995	697	728	480	297	28.5	1 282	1 221	934
				Growth rate (percentage)				
1950-1955	2.15	1.00	2.65	1.70	2.21	1.89	1.87	2.00
1955-1960	2.34	1.00	2.70	1.77	2.21	2.26	1.53	2.26
1960-1965	2.52	0.97	2.75	1.46	2.15	2.32	2.07	2.26
1965-1970	2.59	0.66	2.58	1.06	1.95	2.37	2.61	2.28
1970-1975	2.56	0.60	2.45	1.01	2.09	2.37	2.21	2.24
1975-1980	2.79	0.49	2.32	0.93	1.13	2.13	1.48	2.08
1980-1985	2.79	0.38	2.07	0.98	1.51	2.18	1.38	2.17
1985-1990	2.73	0.44	1.89	1.02	1.54	1.99	1.53	2.05
1990-1995	2.51	0.16	1.72	1.02	1.51	1.75	1.10	1.86
				Total fertility (children per woman)				
1950-1955	6.58	2.56	5.89	3.47	3.84	5.51	6.22	5.97
1955-1960	6.68	2.59	5.93	3.72	4.07	5.47	5.59	5.92
1960-1965	6.78	2.56	5.97	3.34	3.95	5.40	5.72	5.81
1965-1970	6.75	2.35	5.55	2.54	3.55	5.32	6.06	5.69
1970-1975	6.60	2.14	5.03	2.01	3.21	5.10	4.86	5.43
1975-1980	6.52	1.97	4.49	1.78	2.79	4.72	3.32	4.83
1980-1985	6.37	1.87	3.86	1.80	2.58	4.38	2.55	4.47
1985-1990	5.97	1.83	3.35	1.90	2.51	3.90	2.46	4.07
1990-1995	5.47	1.57	2.97	2.02	2.50	3.33	1.92	3.56
				Expectation of life at birth, both sexes				
1950-1955	37.8	66.2	51.4	69.0	60.9	44.2	40.8	38.7
1955-1960	40.0	68.3	54.3	69.8	63.0	47.0	44.6	42.6
1960-1965	42.1	69.8	56.8	70.1	64.6	49.6	49.5	45.5
1965-1970	44.1	70.4	58.8	70.5	65.3	52.2	59.6	48.0
1970-1975	46.1	70.8	60.9	71.5	66.6	54.7	63.2	50.3
1975-1980	48.0	71.2	63.1	73.3	68.2	57.1	65.3	52.9
1980-1985	49.5	71.9	64.9	74.7	70.1	59.8	66.6	54.9
1985-1990	51.3	73.0	66.7	75.2	71.3	62.7	67.1	57.6
1990-1995	51.1	72.6	68.1	75.9	72.9	64.6	68.4	60.3

Source: World Population Prospects: The 1998 Revision, vol. I, *Comprehensive Tables* (United Nations publication, Sales No. E.99.XIII.9). The population of Asia excluding China and India was calculated by subtracting the projected numbers for China and India from the projected numbers for Asia.

low-medium scenarios lead sooner or later to population decline (table 23). The medium scenario leads to positive but very low growth rates (table 24). The high-medium and high scenarios lead to very substantial increases in population size even though population growth rates decline steadily.

However, large differences exist between the major areas in the magnitude and timing of these changes. Under the low scenario, for example, the population of Europe declines continuously from 727 million in 2000 to 139 million in 2150 (table 23). In sharp contrast, the population of Africa rises from 779 million persons in 2000 to 1,488

TABLE 23. THE POPULATION OF THE EIGHT MAJOR WORLD AREAS ACCORDING TO SEVEN PROJECTION SCENARIOS, SELECTED YEARS, 2000-2150
(*Millions*)

	Scenario						
Years	*Instant-replacement*	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
				Africa			
2000	726	779	779	784	790	790	794
2025	956	1 209	1 209	1 298	1 390	1 390	1 656
2050	1 134	1 467	1 536	1 766	2 056	2 102	3 916
2075	1 220	1 488	1 673	2 077	2 633	2 876	9 823
2100	1 286	1 306	1 636	2 215	3 072	3 710	25 272
2125	1 328	1 068	1 530	2 264	3 421	4 691	65 271
2150	1 361	873	1 426	2 308	3 798	5 932	168 889
				Europe			
2000	741	727	727	729	732	732	733
2025	775	675	675	702	747	747	713
2050	791	550	552	628	721	746	631
2075	808	397	423	549	707	777	519
2100	828	280	345	515	736	882	425
2125	847	197	305	508	791	1 044	347
2150	866	139	281	517	869	1 263	285
				Latin America and the Caribbean			
2000	511	516	516	519	522	522	525
2025	672	641	641	697	756	756	801
2050	771	654	678	809	978	994	1 183
2075	806	574	635	857	1 154	1 253	1 994
2100	829	467	573	877	1 304	1 567	3 609
2125	848	379	527	894	1 439	1 961	6 757
2150	868	308	488	912	1 585	2 457	12 761
				Northern America			
2000	306	308	308	310	311	311	310
2025	341	340	340	364	391	391	372
2050	351	324	312	392	426	464	409
2075	358	271	270	390	461	536	419
2100	366	212	234	388	503	635	422
2125	375	163	212	390	551	765	424
2150	383	126	196	398	609	932	427

TABLE 23 (*continued*)

Years	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
				Oceania			
2000	29.7	30.2	30.2	30.4	30.6	30.6	30.5
2025	35.3	36.5	36.5	39.6	42.7	42.7	42.6
2050	38.2	36.1	36.7	46.2	50.7	52.0	57.0
2075	39.3	31.5	33.9	48.4	57.3	62.1	80.3
2100	40.2	25.6	30.4	49.1	63.2	74.4	118.8
2125	41.1	20.5	28.0	49.8	69.0	89.9	179.0
2150	42.0	16.4	25.9	50.8	75.7	109.4	270.7
				Asia excluding China and India			
2000	1 358	1 382	1 382	1 391	1 399	1 399	1 409
2025	1 773	1 763	1 763	1 912	2 060	2 060	2 315
2050	2 034	1 846	1 919	2 262	2 664	2 733	3 986
2075	2 123	1 654	1 840	2 423	3 136	3 432	7 269
2100	2 180	1 354	1 680	2 476	3 507	4 222	13 684
2125	2 230	1 090	1 547	2 512	3 844	5 186	26 036
2150	2 280	881	1 432	2 558	4 224	6 390	49 707
				China			
2000	1 302	1 276	1 276	1 278	1 279	1 279	1 284
2025	1 594	1 394	1 394	1 480	1 545	1 545	1 499
2050	1 733	1 250	1 275	1 478	1 667	1 686	1 509
2075	1 778	960	1 040	1 386	1 722	1 827	1 398
2100	1 816	710	864	1 340	1 823	2 091	1 293
2125	1 855	528	761	1 338	1 945	2 457	1 202
2150	1 896	395	686	1 361	2 098	2 926	1 121
				India			
2000	988	1 008	1 008	1 014	1 019	1 019	1 028
2025	1 278	1 216	1 216	1 330	1 447	1 447	1 671
2050	1 457	1 216	1 238	1 529	1 845	1 897	2 730
2075	1 531	1 027	1 109	1 589	2 156	2 386	4 545
2100	1 579	799	962	1 600	2 422	2 996	7 685
2125	1 617	628	869	1 617	2 676	3 792	13 085
2150	1 654	498	794	1 642	2 959	4 826	22 385

million persons in 2075 before declining to 873 million persons in 2150. Under the high scenario, the populations of all major areas increase, but the population of Africa increases nearly eightfold, whereas the population of Europe does not quite double.

In the major areas with higher fertility (Africa; Latin America and the Caribbean; Asia excluding China and India; and India), the instant-replacement scenario shows the powerful impact of the young age distributions that characterize them today and that are the result of high fertility in the past. Population increase in the instant-replacement scenario is lower than in the medium scenario, but population size nonetheless grows substantially. For Africa, for example, the instant-replacement scenario reduces fertility from 5.47 children per woman in 1990-1995 (table 22) to 2.6 children per woman in 1995-2000 (table 9, chap-

TABLE 24. POPULATION GROWTH RATES FOR THE EIGHT MAJOR WORLD AREAS, SEVEN SCENARIOS, SELECTED YEARS, 1995-2150
(Percentage)

Years	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
				Africa			
1995-2000	0.82	2.24	2.24	2.36	2.49	2.49	2.60
2020-2025	0.96	1.45	1.45	1.79	2.10	2.10	3.19
2045-2050	0.52	0.47	0.69	0.99	1.26	1.47	3.57
2070-2075	0.21	-0.21	0.14	0.47	0.81	1.13	3.74
2095-2100	0.16	-0.71	-0.21	0.14	0.50	0.96	3.79
2120-2125	0.11	-0.81	-0.28	0.08	0.41	0.94	3.80
2145-2150	0.10	-0.81	-0.28	0.08	0.42	0.94	3.81
				Europe			
1995-2000	0.35	-0.02	-0.02	0.03	0.10	0.10	0.13
2020-2025	0.13	-0.50	-0.50	-0.27	0.02	0.02	-0.27
2045-2050	0.03	-1.04	-0.99	-0.56	-0.22	-0.03	-0.64
2070-2075	0.10	-1.41	-1.03	-0.44	0.03	0.32	-0.81
2095-2100	0.08	-1.39	-0.65	-0.14	0.23	0.60	-0.81
2120-2125	0.09	-1.39	-0.39	0.01	0.33	0.72	-0.80
2145-2150	0.09	-1.39	-0.30	0.09	0.40	0.77	-0.79
				Latin America and the Caribbean			
1995-2000	1.25	1.46	1.46	1.57	1.68	1.68	1.79
2020-2025	0.86	0.54	0.54	0.93	1.29	1.29	1.61
2045-2050	0.36	-0.21	-0.01	0.41	0.81	0.98	1.55
2070-2075	0.11	-0.71	-0.39	0.14	0.58	0.91	2.18
2095-2100	0.10	-0.85	-0.38	0.08	0.43	0.89	2.43
2120-2125	0.09	-0.84	-0.32	0.08	0.38	0.90	2.53
2145-2150	0.09	-0.83	-0.31	0.08	0.39	0.91	2.54
				Northern America			
1995-2000	0.62	0.74	0.74	0.85	0.95	0.95	0.89
2020-2025	0.34	0.21	0.21	0.54	0.86	0.86	0.63
2045-2050	0.03	-0.38	-0.53	0.20	0.24	0.64	0.29
2070-2075	0.11	-0.83	-0.60	-0.03	0.33	0.62	0.08
2095-2100	0.09	-1.02	-0.49	-0.01	0.36	0.71	0.03
2120-2125	0.09	-1.05	-0.34	0.05	0.38	0.77	0.02
2145-2150	0.08	-1.06	-0.31	0.08	0.40	0.79	0.01
				Oceania			
1995-2000	0.86	1.17	1.17	1.29	1.44	1.44	1.39
2020-2025	0.56	0.53	0.53	0.88	1.20	1.20	1.31
2045-2050	0.20	-0.28	-0.16	0.47	0.54	0.70	1.25
2070-2075	0.09	-0.70	-0.41	0.12	0.44	0.71	1.47
2095-2100	0.09	-0.87	-0.40	0.04	0.36	0.74	1.61
2120-2125	0.09	-0.89	-0.31	0.07	0.36	0.77	1.65
2145-2150	0.09	-0.88	-0.29	0.08	0.37	0.79	1.66

TABLE 24 (*continued*)

Years	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
				Asia excluding China and India			
1995-2000	1.15	1.50	1.50	1.64	1.75	1.75	1.89
2020-2025	0.84	0.64	0.64	1.00	1.34	1.34	2.01
2045-2050	0.37	-0.09	0.11	0.48	0.83	1.00	2.28
2070-2075	0.11	-0.64	-0.31	0.17	0.55	0.87	2.48
2095-2100	0.10	-0.86	-0.36	0.06	0.39	0.81	2.55
2120-2125	0.09	-0.86	-0.32	0.07	0.37	0.83	2.58
2145-2150	0.09	-0.84	-0.30	0.08	0.38	0.84	2.59
				China			
1995-2000	1.30	0.89	0.89	0.91	0.93	0.93	1.01
2020-2025	0.65	0.09	0.09	0.35	0.60	0.60	0.40
2045-2050	0.17	-0.77	-0.63	-0.24	0.11	0.21	-0.20
2070-2075	0.10	-1.17	-0.84	-0.23	0.17	0.41	-0.32
2095-2100	0.09	-1.18	-0.62	-0.07	0.25	0.59	-0.30
2120-2125	0.09	-1.17	-0.45	0.04	0.28	0.68	-0.28
2145-2150	0.09	-1.16	-0.40	0.08	0.32	0.70	-0.27
				India			
1995-2000	1.12	1.54	1.54	1.64	1.75	1.75	1.93
2020-2025	0.78	0.48	0.48	0.90	1.29	1.29	1.95
2045-2050	0.34	-0.29	-0.16	0.37	0.77	0.98	1.97
2070-2075	0.13	-0.91	-0.59	0.05	0.53	0.89	2.07
2095-2100	0.11	-0.97	-0.48	0.04	0.43	0.93	2.11
2120-2125	0.10	-0.95	-0.37	0.05	0.39	0.95	2.14
2145-2150	0.09	-0.93	-0.36	0.07	0.41	0.97	2.15

ter I), with further reductions as life expectancy rises. Yet the population of Africa under this scenario nearly doubles between 2000 and 2150, from 726 million to 1,361 million persons. Population increases for the other high-fertility major areas are smaller but still substantial.

For the major areas with low fertility (Europe, Northern America, Oceania and China), the instant-replacement scenario implies a sudden rise in fertility. Consequently, the population of those major areas increases more under the instant-replacement scenario than under the medium scenario. Thus the population of Europe increases to 866 million in 2150 in the instant-replacement scenario, as compared with the 517 million it reaches in the medium scenario.

The constant-fertility scenario also shows very different results for the high-fertility and low-fertility major areas. The constant-fertility scenario for Africa results in a population of 169 billion persons in 2150, providing an extreme example of the way in which analytical projections can point to the invalidity of the assumptions they represent. For Northern America, in contrast, the constant-fertility scenario results in a 2150 population only slightly larger than that produced by the medium scenario.

C. CHANGING GEOGRAPHIC DISTRIBUTION OF WORLD POPULATION

The distribution of world population by major area has shifted substantially over the past half

century. The long-range projections suggest that these shifts will continue in the future. Were all areas to follow the medium scenario, a substantial redistribution of world population would occur between 1995 and 2150. Africa's share of the world population would double from 12 per cent in 1995 to 24 per cent in 2150 (table 25). China's share would fall from 22 to 14 per cent over the same period, while India's share would rise from 14 to 17 per cent.

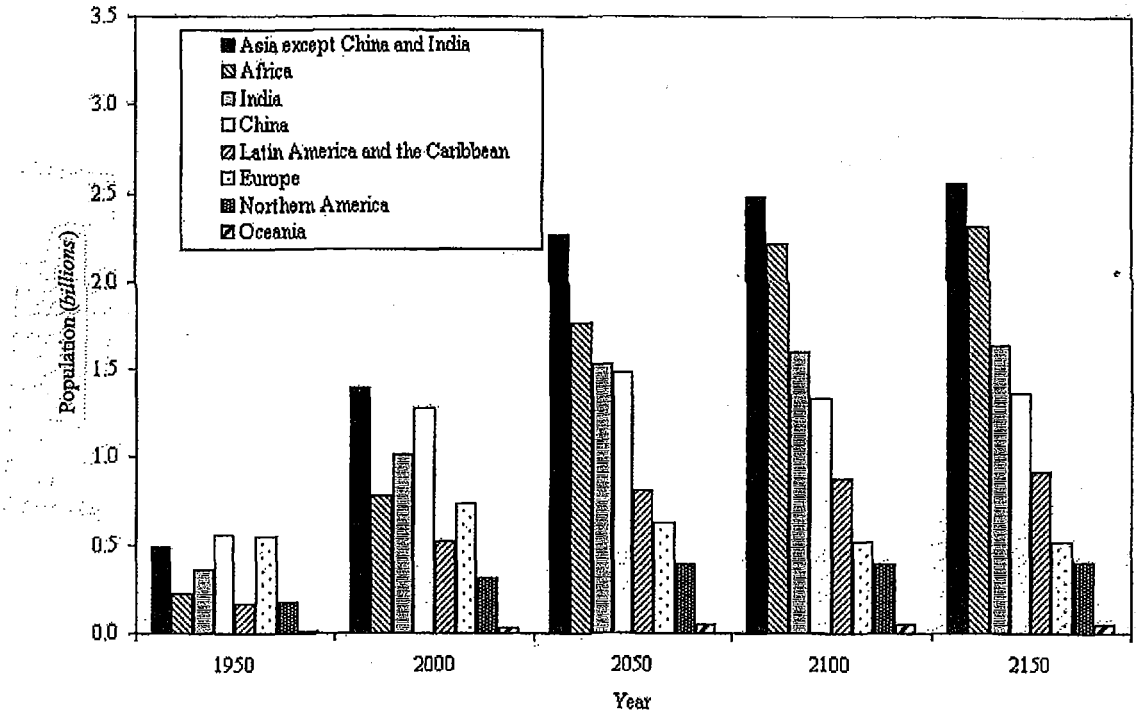
The changes in population distribution over the long-term future are best displayed graphically (figure 9). Figure 9 shows the distribution of population among the eight major areas at 50-year intervals from 1950 to 2150. Major areas are ordered by their population size in 2150. Although Africa gains the most in population share, the largest population in 2150 is still in Asia excluding China and India. At that time Africa becomes the second largest area, India is the third largest and China, the fourth.

A similar redistribution of the population would occur if all areas were to follow one of the other scenarios. There is no guarantee, however, that future population growth in all eight major areas will conform to a single scenario. Low-fertility

TABLE 25. POPULATION, POPULATION GROWTH RATES AND PERCENTAGE SHARE OF THE WORLD POPULATION FOR THE EIGHT MAJOR WORLD AREAS, MEDIUM SCENARIO, SELECTED YEARS, 1950-2150

Year(s)	*Total*	*Africa*	*Europe*	*Latin America and the Caribbean*	*Northern America*	*Oceania*	*Asia excluding China and India*	*China*	*India*
				Population (millions)					
2000	6 055	784	729	519	310	30.4	1 391	1 278	1 014
2025	7 824	1 298	702	697	364	39.6	1 912	1 480	1 330
2050	8 909	1 766	628	809	392	46.2	2 262	1 478	1 529
2075	9 319	2 077	549	857	390	48.4	2 423	1 386	1 589
2100	9 459	2 215	515	877	388	49.1	2 476	1 340	1 600
2125	9 573	2 264	508	894	390	49.8	2 512	1 338	1 617
2150	9 746	2 308	517	912	398	50.8	2 558	1 361	1 642
				Population growth rates (percentage)					
1995-2000	1.33	2.36	0.03	1.57	0.85	1.29	1.64	0.91	1.64
2020-2025	0.84	1.79	-0.27	0.93	0.54	0.88	1.00	0.35	0.90
2045-2050	0.34	0.99	-0.56	0.41	0.20	0.47	0.48	-0.24	0.37
2070-2075	0.11	0.47	-0.44	0.14	-0.03	0.12	0.17	-0.23	0.05
2095-2100	0.04	0.14	-0.14	0.08	-0.01	0.04	0.06	-0.07	0.04
2120-2125	0.06	0.08	0.01	0.08	0.05	0.07	0.07	0.04	0.05
2145-2150	0.08	0.08	0.09	0.08	0.08	0.08	0.08	0.08	0.07
				Percentage share of world population					
1950	100	9	22	7	7	1	19	22	14
1975	100	10	17	8	6	1	21	23	15
1995	100	12	13	8	5	1	23	22	16
2000	100	13	12	9	5	1	23	21	17
2025	100	17	9	9	5	1	24	19	17
2050	100	20	7	9	4	1	25	17	17
2075	100	22	6	9	4	1	26	15	17
2100	100	23	5	9	4	1	26	14	17
2125	100	24	5	9	4	1	26	14	17
2150	100	24	5	9	4	1	26	14	17

Figure 9. Population size of major areas, medium scenario, 1950-2150



major areas might tend to follow the low-medium scenario, for example, while high-fertility major areas might tend to follow the high-medium scenario. Because of this possibility, uncertainty concerning the future distribution of population among the eight major areas is as great as the uncertainty about future population growth within each major area. In the future, if low-fertility major areas realized higher fertility, and the higher-fertility major areas attained lower fertility, the changes in world population shares would be reduced.

The variability of the world population shares corresponding to the different major areas when each one follows a different scenario may be indicated by calculating the share of each major area in 2150 when it follows the medium, low-medium or high-medium scenario while all other areas follow the medium scenario (table 26). The variability in the share for each major area is broadly comparable to the variability in population size in 2150.

When the possibility that different areas may follow different scenarios is taken into account, it is seen that most areas may either gain or lose world population share (table 26). Africa is the only area with an increase in its share of world population under all three combinations of scenarios. Its share rises from 12 per cent of the world population in 1995 to 16 per cent, 24 per cent, and 34 per cent respectively under the low-medium, medium and high-medium scenarios combined with the medium scenario for all other major areas. Europe and China are the only major areas whose shares of the world population decline under the three combinations of scenarios.

TABLE 26. PERCENTAGE SHARE OF THE WORLD POPULATION IN THE EIGHT MAJOR WORLD AREAS, 1995 ESTIMATE AND THREE COMBINATIONS OF SCENARIOS FOR 2150

		Scenario combination[a]		
	1995	*Low-medium*	*Medium*	*High-medium*
Africa	12	16	24	34
Europe	13	3	5	9
Latin America and the Caribbean	8	5	9	15
Northern America	5	2	4	6
Oceania	0.5	0.3	0.5	0.8
Asia excluding China and India	23	17	26	37
China	22	8	14	20
India	16	9	17	27

[a] The columns labeleled low-medium and high-medium show the world population share of a major area when it follows the low-medium and high-medium scenario with the other major areas following the medium scenario.

IV. CHANGING POPULATION AGE DISTRIBUTION

Continuous ageing of the world population over the next 150 years is the most consistent feature of the results produced by the long-range projections in this study. In the medium scenario, the percentage of older persons (aged 60 years or over) in the world as a whole triples, increasing from 10 to 30 per cent between 2000 and 2150. For the high-medium scenario, the increase is only 3 percentage points less. For the low-medium scenario it is only 4 percentage points more.

Older persons constitute 10 per cent of the world population in 2000 under the medium scenario. If "older persons" were defined as the oldest tenth of the population, rather than as a fixed age group, the age at which persons move into the "older persons" group would rise from 60 years in 2000 to 80 years in 2150.

Population ageing is the result of declining fertility in combination with high and increasing life expectancy. Large percentages of older persons are inevitable in any population that experiences low or negative growth rates with a high life expectancy. Population ageing occurs more rapidly for lower-fertility scenarios and more slowly for higher-fertility scenarios. Only a return to higher fertility or lower life expectancy could avoid or reduce future population ageing.

The age distribution of the population is most often presented in terms of percentages of persons in each age group. Trends in the number of persons in different age groups are equally important, however, and no simple correspondence exists between changing percentages and changing numbers. Over the past 40 years, for example, because of the decline in fertility combined with ongoing rapid population growth, the percentage of younger persons (those aged 0-14) has declined, whereas their numbers have been increasing steadily. In the future, as population growth slows further and fertility keeps on declining, declines in percentages of younger persons may be accompanied by corresponding reductions of their numbers.

Because the future number of children depends not only on future fertility levels but also on the number of parents in the population, the current population age distribution, which determines the number of parents today and in the next 15 years, exerts a strong influence on population growth over the medium-term future and therefore influences the results of all projection scenarios. The discussion of changing age distribution therefore begins with a brief review of changes in the age distribution since 1950.

A. PAST CHANGES IN THE AGE DISTRIBUTION OF THE POPULATION

For the world as a whole, changes in the age distribution have been modest over the past 30 years, but with a clear trend towards an older population. The percentage of older persons (those aged 60 years or over) rose from 8 per cent in 1950 to 10 per cent in 1995 (table 27). The percentage of younger persons (0-14 years old) rose while population growth rates were increasing, from 34 per cent in 1950 to 38 per cent in 1965, and then declined to 31 per cent in 1995 as growth rates declined. The percentages of persons of working age (15-59 years old) declined slightly and then increased, with little overall change over the 1950-1995 period.

Africa had the youngest population throughout the period, with young persons comprising 43 to 45 per cent of the total population and the percentage of older persons remaining steady at 5 per cent (table 27). Europe had the oldest population throughout the period, with 19 per cent of its inhabitants being aged 0-14 years and 19 per cent aged 60 years or over in 1995.

In the major areas that began the period with high fertility, populations became younger until fertility began to decline, resulting in the ageing of the population. In China, where fertility declined most rapidly, the proportion of young persons fell from 40 per cent of the total population

TABLE 27. PERCENTAGE OF POPULATION IN BROAD AGE GROUPS, WORLD AND EIGHT MAJOR WORLD AREAS, 1950-1995

Year	Age group				Age group				Age group			
	0-14	15-59	60+	80+	0-14	15-59	60+	80+	0-14	15-59	60+	80+
	World				*Africa*				*Europe*			
1950	34	57	8	1	43	52	5	0	26	62	12	1
1955	36	56	8	1	43	52	5	0	26	62	12	1
1960	37	55	8	1	43	52	5	0	27	60	13	1
1965	38	54	8	1	44	51	5	0	27	59	14	1
1970	37	54	8	1	45	50	5	0	25	59	15	2
1975	37	55	9	1	45	50	5	0	24	60	16	2
1980	35	56	9	1	45	50	5	0	22	62	16	2
1985	33	58	9	1	45	51	5	0	21	62	17	2
1990	32	58	9	1	44	51	5	0	20	61	18	3
1995	31	59	10	1	44	51	5	0	19	62	19	3
	Latin America and the Caribbean				*Northern America*				*Oceania*			
1950	40	54	6	0	27	60	12	1	30	59	11	1
1955	41	53	6	0	30	57	13	1	32	57	11	1
1960	42	52	6	0	31	56	13	1	33	56	11	1
1965	43	51	6	0	31	56	13	2	33	57	11	1
1970	42	51	6	1	29	58	14	2	32	57	11	1
1975	41	52	7	1	25	60	15	2	31	58	11	1
1980	40	54	7	1	23	62	15	2	29	59	12	1
1985	38	55	7	1	22	62	16	3	28	60	12	1
1990	36	57	7	1	22	62	17	3	26	61	13	2
1995	34	59	7	1	22	62	16	3	26	61	13	2
	Asia excluding China and India				*China*				*India*			
1950	38	55	7	0	34	59	7	0	39	55	6	0
1955	39	55	6	0	37	55	8	0	39	55	6	0
1960	40	54	6	0	39	54	7	0	40	55	6	0
1965	41	53	6	0	40	53	7	0	40	54	6	0
1970	41	53	6	0	40	53	7	0	40	54	6	0
1975	40	53	6	0	39	54	7	1	40	54	6	0
1980	39	54	7	1	36	57	7	0	39	55	6	0
1985	38	55	7	1	30	62	8	1	38	56	7	0
1990	36	56	7	1	28	64	9	1	36	57	7	0
1995	34	58	8	1	26	64	9	1	35	57	7	1

Source: Calculations based on table 28.

NOTE: Base of per cent is total population for given major world area and year. Percentages in the 0-14, 15-59 and 60+ columns add up to 100 except for rounding errors.

in 1970 to 26 per cent in 1995 (table 27). In Africa, where fertility declined the latest and most slowly, the proportion of young persons reached 45 per cent of the total population in 1970 and had fallen to 44 per cent by 1995. In contrast, Europe had continually declining percentages of young persons since 1965.

For the world as a whole, the number of persons in all age groups increased dramatically. Despite the overall ageing of the world population, the number of young persons more than doubled, rising from 867 million in 1950 to 1,770 million in 1995 (table 28). Large differences emerged between the eight major areas. In Africa, for in-

TABLE 28. POPULATION IN BROAD AGE GROUPS, WORLD AND EIGHT MAJOR WORLD AREAS, 1950-1995
(Millions of persons)

Year	Age group 0-14	15-59	60+	80+	Age group 0-14	15-59	60+	80+	Age group 0-14	15-59	60+	80+
	World				*Africa*				*Europe*			
1950	867	1 449	205	14	94	116	11	1	143	338	66	6
1955	979	1 552	224	16	105	128	12	1	147	357	72	7
1960	1 114	1 662	245	19	120	143	13	1	162	364	79	8
1965	1 256	1 807	274	22	139	159	16	1	168	377	90	9
1970	1 385	2 000	310	27	160	179	18	1	166	389	101	11
1975	1 504	2 223	348	31	183	203	20	1	161	405	111	12
1980	1 564	2 496	381	36	209	235	23	1	154	428	111	14
1985	1 620	2 790	428	44	239	271	26	2	150	437	119	17
1990	1 703	3 078	486	54	273	312	30	2	148	443	132	20
1995	1 770	3 355	542	62	304	359	34	2	139	450	138	22
	Latin America and the Caribbean				*Northern America*				*Oceania*			
1950	67	90	10	1	47	104	21	2	3.8	7.4	1.4	0.1
1955	78	101	12	1	56	107	24	2	4.5	8.1	1.5	0.1
1960	92	112	14	1	63	114	27	3	5.2	8.8	1.7	0.2
1965	107	127	16	1	67	123	29	3	5.8	9.9	1.9	0.2
1970	121	146	18	2	66	133	32	4	6.2	11.0	2.1	0.2
1975	133	168	21	2	62	146	35	5	6.7	12.4	2.4	0.3
1980	143	194	24	2	58	158	39	6	6.6	13.4	2.6	0.3
1985	152	222	27	3	58	166	43	7	6.8	14.7	3.0	0.3
1990	159	251	31	3	61	174	47	8	7.0	16.0	3.4	0.5
1995	162	282	36	4	65	183	48	9	7.4	17.3	3.8	0.6
	Asia excluding China and India				*China*				*India*			
1950	188	269	33	2	186	327	42	2	139	198	20	1
1955	208	296	35	2	226	337	46	2	154	219	22	1
1960	240	325	38	3	256	354	48	2	176	241	25	1
1965	275	359	42	3	293	385	51	3	200	266	29	1
1970	312	401	49	4	330	444	57	4	224	297	33	2
1975	346	456	55	4	366	497	64	5	247	335	38	2
1980	374	518	62	5	355	570	74	4	266	379	45	2
1985	401	590	72	7	324	660	86	6	288	429	51	3
1990	426	663	86	9	320	736	99	8	310	483	58	4
1995	439	743	100	10	323	784	114	9	330	536	67	5

Source: Calculations based on age data in *World Population Prospects: The 1998 Revision*, vol. II, *Sex and Age (United Nations publication Sales No. E.99.XIII.8).*

stance, the number of young persons more than tripled between 1950 and 1995, whereas in Europe this age group experienced a net decline.

B. FUTURE CHANGES IN THE AGE DISTRIBUTION OF THE POPULATION

For the world as a whole, population ageing accelerates rapidly whether one considers the low-medium, medium or high-medium scenario. Indeed, there is relatively little difference between the scenarios in this respect, despite the very large differences in future population numbers. For the medium scenario the percentage of older persons triples between 2000 and 2150, rising from 10 to 30 per cent (table 29). For the high-medium scenario it rises to 27 per cent, as compared with 34 per cent for the low-medium scenario. Even

TABLE 29. PERCENTAGE OF POPULATION IN BROAD AGE GROUPS, WORLD AND EIGHT MAJOR AREAS: LOW, LOW-MEDIUM, MEDIUM, HIGH-MEDIUM AND HIGH SCENARIOS FOR SELECTED YEARS, 2000-2150

(*Millions of persons*)

World

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	29	61	10	1	29	61	10	1	30	60	10	1	30	60	10	1	30	60	10	1
2025.....	20	64	16	2	20	64	16	2	23	61	15	2	27	59	14	2	27	59	14	2
2050.....	15	59	27	5	16	58	26	5	20	58	22	4	23	59	19	3	24	58	19	3
2075.....	13	53	34	9	16	53	31	8	19	55	26	6	21	57	22	5	23	56	21	4
2100.....	12	50	38	11	16	53	32	9	18	54	28	8	20	55	25	6	23	55	22	5
2125.....	12	49	39	13	15	52	33	10	18	53	29	9	20	54	26	7	23	54	23	6
2150.....	12	48	41	15	15	51	34	12	18	52	30	10	20	53	27	8	23	54	24	7

Africa

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	42	53	5	0	42	53	5	0	42	53	5	0	43	52	5	0	43	52	5	0
2025.....	32	62	7	1	32	62	7	1	35	59	6	1	37	57	6	0	37	57	6	0
2050.....	19	66	14	1	22	65	13	1	24	64	12	1	27	63	10	1	28	62	10	1
2075.....	15	59	26	4	18	59	23	3	20	60	20	3	23	60	17	2	26	59	16	2
2100.....	13	53	34	8	17	55	29	6	19	56	26	6	21	56	23	4	25	56	19	4
2125.....	13	51	36	10	16	53	30	8	18	54	27	7	21	55	24	6	24	56	20	5
2150.....	13	50	38	12	16	52	32	9	18	53	29	8	20	54	26	7	24	55	21	5

Europe

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	17	62	20	3	17	62	20	3	17	62	20	3	18	62	20	3	18	62	20	3
2025.....	13	58	29	5	13	58	29	5	15	57	28	5	17	56	26	5	17	56	26	5
2050.....	11	50	40	10	12	49	39	10	14	51	35	9	17	53	30	8	19	52	29	8
2075.....	10	47	43	15	13	47	40	14	16	51	33	11	19	53	28	8	21	53	26	8
2100.....	9	46	45	17	15	49	36	13	17	51	32	10	19	52	29	9	22	53	25	7
2125.....	9	44	47	19	15	50	35	13	17	52	31	11	19	53	28	9	22	54	24	8
2150.....	9	42	49	21	15	49	36	14	17	51	32	12	19	52	29	10	22	53	25	8

TABLE 29 (*continued*)

Latin America and the Caribbean

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	31	61	8	1	31	61	8	1	32	61	8	1	32	60	8	1	32	60	8	1
2025.....	20	65	15	2	20	65	15	2	24	62	14	2	27	60	13	2	27	60	13	2
2050.....	15	58	28	5	16	57	26	5	20	58	22	4	23	58	18	3	25	57	18	3
2075.....	13	52	35	10	16	52	32	8	19	55	26	6	21	57	22	5	24	56	20	4
2100.....	13	50	37	12	16	52	32	10	18	54	28	8	20	55	25	6	24	55	21	5
2125.....	12	49	39	13	15	51	33	11	18	53	29	9	20	54	27	8	24	54	22	6
2150.....	12	48	40	15	15	50	35	12	17	52	31	10	20	53	28	9	23	54	23	7

Northern America

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	21	62	17	3	21	62	17	3	21	62	16	3	21	62	16	3	21	62	16	3
2025.....	15	58	27	5	15	58	27	5	18	56	26	4	21	55	24	4	21	55	24	4
2050.....	13	54	33	9	14	53	34	10	17	55	28	8	20	55	26	7	21	55	24	7
2075.....	11	49	40	13	14	48	37	13	17	52	31	9	20	54	27	8	22	53	25	7
2100.....	11	47	42	16	15	49	36	13	17	51	32	11	19	52	28	9	22	53	25	8
2125.....	11	45	44	18	15	49	36	14	17	51	32	11	19	52	29	10	22	53	25	8
2150.....	10	44	46	20	14	48	37	15	17	50	33	13	19	51	30	11	22	52	26	9

Oceania

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	25	62	14	2	25	62	14	2	25	61	13	2	25	61	13	2	25	61	13	2
2025.....	18	61	21	3	18	61	21	3	21	59	20	3	24	58	18	3	24	58	18	3
2050.....	14	56	30	7	15	55	29	7	19	57	24	6	21	57	22	5	23	56	22	5
2075.....	13	51	37	11	15	51	34	10	18	54	28	8	20	55	25	6	23	55	23	6
2100.....	12	48	40	14	15	51	34	12	18	52	30	10	20	53	27	8	22	54	24	7
2125.....	12	47	41	16	15	50	35	12	17	52	31	11	19	52	28	9	22	53	24	8
2150.....	11	46	43	18	15	49	36	14	17	51	32	12	19	52	29	10	22	53	25	8

TABLE 29 (*continued*)

Asia excluding China and India

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	32	60	8	1	32	60	8	1	32	60	8	1	33	59	8	1	33	59	8	1
2025.....	21	65	14	2	21	65	14	2	24	63	13	2	28	60	12	1	28	60	12	1
2050.....	15	59	26	4	17	58	25	4	20	59	21	3	23	60	18	3	23	60	18	3
2075.....	13	53	34	9	16	53	31	8	19	55	26	6	21	57	22	5	21	57	22	5
2100.....	13	50	37	12	16	53	32	9	18	54	28	8	20	55	25	6	20	55	25	6
2125.....	12	49	39	13	15	51	33	10	18	53	29	9	20	54	27	8	20	54	27	8
2150.....	12	48	41	15	15	50	35	12	17	52	31	10	19	53	28	9	19	53	28	9

China

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	25	65	10	1	25	65	10	1	25	65	10	1	25	65	10	1	25	65	10	1
2025.....	15	64	21	2	15	64	21	2	18	62	19	2	21	61	19	2	21	61	19	2
2050.....	12	53	35	8	13	53	34	8	16	54	30	7	19	55	26	6	20	54	26	6
2075.....	11	49	40	12	14	49	37	11	17	52	30	8	19	55	26	7	22	54	24	6
2100.....	11	48	41	14	15	50	35	11	18	52	30	9	19	53	27	8	22	54	24	7
2125.....	10	46	43	16	15	50	35	12	18	52	30	10	19	53	28	9	22	54	24	7
2150.....	10	45	45	18	14	49	36	13	17	51	31	11	19	52	29	10	22	53	25	8

India

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	33	59	8	1	33	59	8	1	33	59	8	1	34	59	8	1	34	59	8	1
2025.....	19	68	14	1	19	68	14	1	23	64	13	1	27	61	12	1	27	61	12	1
2050.....	14	60	27	4	15	59	26	4	20	59	21	3	23	60	17	2	25	58	17	2
2075.....	12	52	36	9	15	52	33	8	18	55	26	6	21	58	21	4	24	56	19	4
2100.....	12	51	37	11	15	53	32	9	18	54	27	7	21	55	24	6	24	56	20	5
2125.....	12	49	39	12	15	52	33	10	18	53	29	8	20	54	26	7	24	55	21	5
2150.....	12	48	40	14	15	51	34	11	18	52	30	9	20	53	27	8	24	54	22	6

more dramatically than the percentage of older persons, the percentage of the very old (80 years old and over) increases by ten times in the medium scenario (table 29). The rising percentage of older persons is counterbalanced by a decline of about one third in the percentage of young persons, from 30 per cent in 2000 to 18 per cent in 2150 in the medium scenario, and a smaller decline in the percentage of persons of working age (table 29).

The relatively large initial differences between the proportions of persons in different age groups in the eight major areas decline steadily, with very small inter-area differences left by 2150 (table 29). This outcome reflects the convergence of fertility levels projected by all scenarios for all major areas. The changing age distribution of the world population is depicted in figure 10, which shows estimates for the 1950-1995 period and projected values under the medium scenario for 2000-2150.

Changes in the number of persons in different age groups are quite different from changes in their percentages. For the world as a whole, the number of persons aged 0-14 remains nearly constant in the medium scenario, declining from 1,800 million persons in 2000 to 1,706 million persons in 2150 (table 30). The number of persons of working age rises by nearly 40 per cent, from

Figure 10. Percentage of world population by age group, medium scenario, 1950-2150

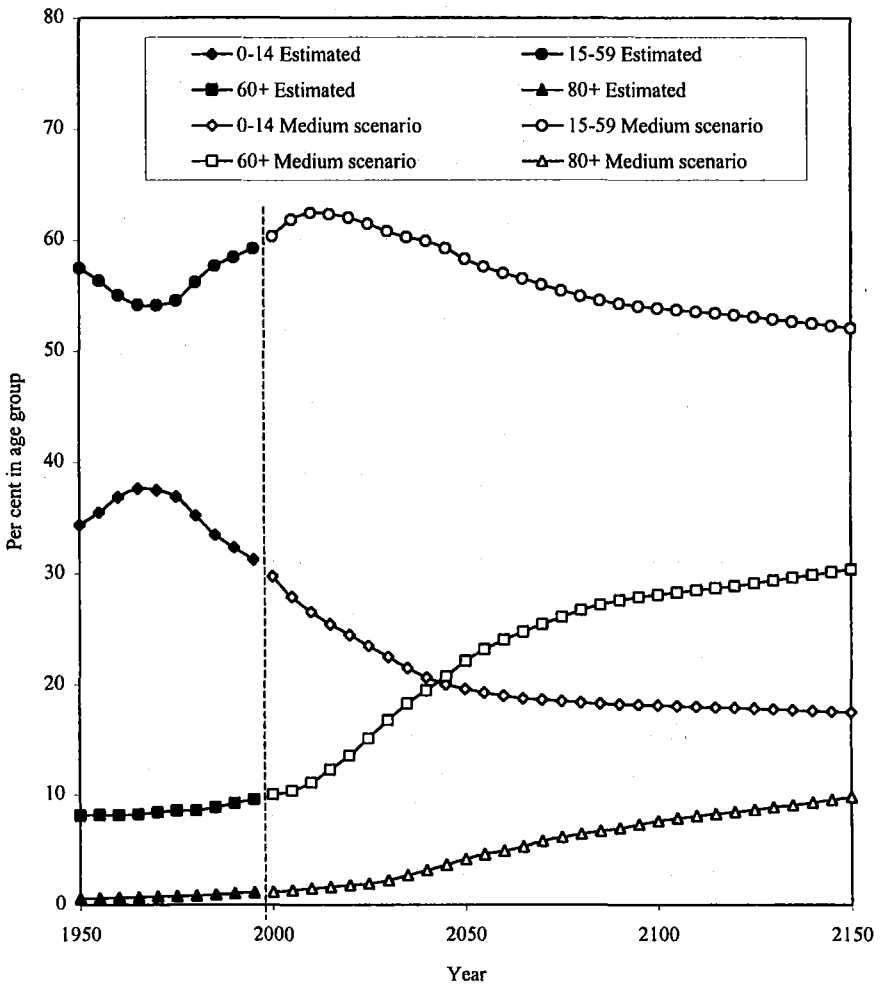


TABLE 30. POPULATION IN BROAD AGE GROUPS, WORLD AND EIGHT MAJOR WORLD AREAS: LOW, LOW-MEDIUM, MEDIUM, HIGH-MEDIUM, AND HIGH SCENARIOS FOR SELECTED YEARS, 2000-2150

(Millions of persons)

World

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	1 773	3 649	605	70	1 773	3 649	605	70	1 800	3 650	605	70	1 826	3 651	605	70	1 826	3 651	605	70
2025.....	1 461	4 634	1 179	148	1 461	4 634	1 179	148	1 836	4 807	1 180	149	2 220	4 978	1 181	149	2 220	4 978	1 181	149
2050.....	1 076	4 301	1 966	370	1 235	4 362	1 949	360	1 747	5 193	1 970	370	2 346	6 108	1 954	361	2 505	6 129	1 970	367
2075.....	822	3 388	2 193	568	1 101	3 745	2 178	554	1 724	5 166	2 428	572	2 524	6 868	2 633	555	2 966	7 234	2 652	568
2100.....	632	2 584	1 936	586	987	3 325	2 012	578	1 713	5 092	2 654	717	2 719	7 345	3 365	830	3 534	8 503	3 425	841
2125.....	488	1 989	1 597	530	888	2 992	1 900	585	1 707	5 078	2 788	824	2 937	7 943	3 856	1 087	4 235	10 153	4 255	1 145
2150.....	378	1 538	1 321	479	800	2 698	1 831	615	1 706	5 075	2 964	956	3 179	8 602	4 437	1 370	5 102	12 190	5 377	1 581

Africa

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	328	412	39	3	328	412	39	3	333	412	39	3	338	412	39	3	338	412	39	3
2025.....	385	744	80	7	385	744	80	7	449	769	80	7	515	795	80	7	515	795	80	7
2050.....	280	976	212	22	331	1 000	205	19	424	1 130	212	22	550	1 301	205	19	597	1 293	212	22
2075.....	221	878	389	61	298	991	384	55	418	1 240	419	61	597	1 592	444	55	736	1 690	450	61
2100.....	176	688	442	108	271	898	467	105	417	1 233	566	122	649	1 728	695	133	916	2 091	704	137
2125.....	139	546	382	108	246	817	466	123	415	1 231	617	156	705	1 887	829	199	1 140	2 607	944	213
2150.....	111	435	328	104	224	745	458	135	415	1 231	662	188	769	2 059	970	263	1 422	3 254	1 256	319

Europe

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	126	454	148	21	126	454	148	21	127	454	148	21	130	454	148	21	130	454	148	21
2025.....	85	393	197	35	85	393	197	35	103	402	197	35	130	419	197	35	130	419	197	35
2050.....	58	274	218	57	64	270	218	57	90	319	218	57	124	379	218	57	139	390	218	57
2075.....	39	188	170	59	56	199	168	59	89	278	182	59	132	373	201	59	164	410	203	59
2100.....	27	127	126	46	50	169	126	45	88	262	164	54	142	384	210	65	194	467	221	65
2125.....	18	87	92	37	45	153	107	39	88	263	157	54	154	417	221	73	231	559	254	80
2150.....	12	59	68	29	41	138	102	39	88	263	166	60	166	451	252	87	276	668	319	105

TABLE 30 (*continued*)

Latin America and the Caribbean

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	161	314	41	5	161	314	41	5	164	314	41	5	167	314	41	5	167	314	41	5
2025.....	127	417	97	12	127	417	97	12	165	435	97	12	205	454	97	12	205	454	97	12
2050.....	96	377	181	32	111	388	180	32	162	466	181	32	228	570	180	32	248	565	181	32
2075.....	75	297	202	55	99	333	202	54	160	471	225	55	245	657	251	54	304	699	250	55
2100.....	59	234	174	55	89	300	183	55	159	472	246	68	264	712	327	83	374	864	330	83
2125.....	47	185	147	50	81	271	176	56	159	472	263	80	286	772	381	111	461	1 067	432	118
2150.....	37	146	124	46	73	245	170	59	159	472	281	93	310	837	439	139	570	1 321	566	169

Northern America

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	65	192	51	10	65	192	51	10	66	193	51	10	67	194	51	10	67	194	51	10
2025.....	52	196	92	15	52	196	92	15	66	205	93	15	82	216	94	15	82	216	94	15
2050.....	42	176	106	30	42	164	105	30	67	215	110	31	83	234	109	31	98	255	111	31
2075.....	31	133	107	35	38	131	101	34	67	204	120	37	90	248	123	36	118	287	132	38
2100.....	23	99	90	34	34	115	84	31	67	199	122	41	98	263	142	45	141	337	157	49
2125.....	17	74	72	29	31	104	76	29	67	199	125	44	106	287	158	54	169	405	191	62
2150.....	13	55	58	25	28	95	73	29	67	199	132	50	115	312	181	66	203	487	242	84

Oceania

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	7.5	18.6	4.1	0.7	7.5	18.6	4.1	0.7	7.7	18.7	4.1	0.7	7.8	18.7	4.1	0.7	7.8	18.7	4.1	0.7
2025.....	6.6	22.2	7.8	1.3	6.6	22.2	7.8	1.3	8.4	23.4	7.8	1.3	10.2	24.6	7.9	1.3	10.2	24.6	7.9	1.3
2050.....	5.1	20.2	10.8	2.6	5.7	20.2	10.8	2.6	8.7	26.3	11.2	2.7	10.7	28.8	11.3	2.7	11.7	29.1	11.3	2.7
2075.....	3.9	16.0	11.6	3.5	5.1	17.2	11.5	3.5	8.7	25.9	13.8	3.7	11.5	31.6	14.2	3.7	14.0	33.9	14.2	3.7
2100.....	3.1	12.4	10.1	3.5	4.6	15.4	10.4	3.5	8.6	25.7	14.8	4.7	12.4	33.6	17.3	5.1	16.7	40.1	17.6	5.1
2125.....	2.4	9.6	8.5	3.2	4.2	14.0	9.8	3.5	8.6	25.7	15.5	5.2	13.3	36.2	19.6	6.4	20.0	48.1	21.9	6.8
2150.....	1.9	7.5	7.1	2.9	3.8	12.7	9.5	3.6	8.6	25.7	16.5	6.0	14.3	39.0	22.3	7.9	23.9	57.6	27.8	9.3

TABLE 30 (*continued*)

Asia excluding China and India

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	438	828	116	12	438	828	116	12	447	828	116	12	455	828	116	12	455	828	116	12
2025.....	369	1 147	248	30	369	1 147	248	30	468	1 197	248	30	568	1 244	248	30	568	1 244	248	30
2050.....	278	1 092	475	79	326	1 119	474	75	454	1 333	475	79	604	1 587	474	75	604	1 587	474	75
2075.....	217	870	567	143	292	980	569	141	449	1 340	634	146	653	1 786	697	142	653	1 786	697	142
2100.....	170	679	504	157	262	883	534	156	446	1 331	698	194	704	1 913	890	225	704	1 913	890	225
2125.....	133	533	424	143	237	797	514	161	445	1 327	740	224	760	2 062	1 022	291	760	2 062	1 022	291
2150.....	105	419	357	131	215	721	496	170	445	1 325	787	259	822	2 229	1 173	369	822	2 229	1 173	369

China

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	316	831	129	12	316	831	129	12	317	831	129	12	319	831	129	12	319	831	129	12
2025.....	212	894	288	31	212	894	288	31	271	921	288	31	321	936	288	31	321	936	288	31
2050.....	149	662	440	100	166	670	439	99	241	797	440	100	319	909	439	99	338	908	440	100
2075.....	106	474	380	118	144	513	382	117	239	726	421	118	335	940	447	117	394	988	445	118
2100.....	76	340	293	98	126	436	302	99	236	700	404	122	352	972	499	140	459	1 128	504	140
2125.....	55	245	228	83	111	384	267	90	235	699	404	129	372	1 030	542	169	538	1 322	597	175
2150.....	40	177	177	70	97	338	250	91	235	698	428	147	395	1 094	609	203	631	1 553	741	235

India

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	332	599	77	6	332	599	77	6	338	599	77	6	343	599	77	6	343	599	77	6
2025.....	226	821	168	17	226	821	168	17	306	856	168	17	389	890	168	17	389	890	168	17
2050.....	168	723	324	47	189	731	318	45	299	906	324	47	428	1 099	318	45	471	1 102	324	47
2075.....	128	533	366	93	167	580	361	89	294	882	414	93	460	1 240	456	89	584	1 341	461	93
2100.....	98	404	297	85	149	509	304	84	291	870	439	111	497	1 340	585	134	729	1 664	602	137
2125.....	76	310	243	78	133	452	284	84	290	863	464	131	540	1 453	683	184	916	2 083	793	199
2150.....	58	239	201	70	119	404	272	88	289	861	492	153	588	1 581	790	234	1 154	2 620	1 052	290

3,650 million persons in 2000 to 5,075 million persons in 2150, and the number of older persons is multiplied by nearly 5, rising from 605 million in 2000 to 2,964 million in 2150. The high-medium scenario produces rising numbers of persons in all age groups (table 30). The low-medium scenario shows a net fall in the numbers of persons in all age groups, following an initial rise that lasts longer for older age groups.

Changes in the number of persons in different age groups vary substantially between the eight major world areas. In Africa, for example, the number of working-age persons nearly triples, rising from 412 million persons in 2000 to 1,231 million persons in 2150 in the medium scenario (table 30), whereas in Europe the number of working-age persons falls by nearly 50 per cent, from 454 million in 2000 to 263 million in 2150. The changes in other major areas tend to fall between these two extremes.

C. AGE DISTRIBUTION AND POPULATION STABILIZATION

Age distributions expressed in terms of the three broad age groups, 0-14, 15-59 and 60+, are useful because these groups correspond, if only roughly, to established pre-working ages, working ages, and post-working ages. However, some changes in the age distribution are obscured by this grouping because of the different widths of the age groups and their variable relation to the time intervals considered. Age groups of uniform width, equal to that of the time intervals used, make it possible to follow birth cohorts and reveal patterns that are impossible to see when other age groupings are used.

The use of age groups and time intervals of 25 years resulted in an adequate balance between the need to summarize and provide some detail. The changes in the age distribution of the world population under the low-medium, medium and high-medium scenarios are presented in table 31 and displayed in figures 11 to 13.

For the medium scenario, figure 11 shows that:

(1) The number of persons aged 0-24 years remains virtually unchanged at about 3 billion;

(2) The number of persons aged 25-49 years rises from just over 2 billion to nearly 3 billion between 2000 and 2050 but remains approximately constant thereafter;

(3) The number of persons aged 50-74 years rises from just under 1 billion to about 2.6 billion between 2000 and 2075 and remains nearly constant thereafter;

(4) The number of persons aged 75 and over rises relatively slowly but steadily throughout the 150-year period, from 148 million in 2000 to 1.4 billion in 2050.

From the above it can be seen that the total population increase in the medium scenario, amounting to 4 billion persons, results entirely from increases in the number of persons over age 25, a conclusion not apparent when age distributions are presented for the 0-14, 15-59 and 60+ age groups.

This growth in the number of persons over age 25 is primarily due to the "momentum" of the initial age distribution. The number of persons aged 25-49 years in 2000 is "too small" relative to the number of persons 0-24 years old in the sense that zero population growth and high levels of survivorship imply that the number of persons in these two age groups should be approximately equal (table 31). The relatively low number of persons aged 25-49 in 2000 reflects the past history of rapid population growth and relatively low mortality. To attain zero population growth, given constant numbers of persons 0-24 years old, it is first necessary for the older age group to "catch up" to the younger group. The time required for this is the time it takes persons aged 0-24 years in 2000 to move into the 25-49 year age group, or 25 years.

The same is true of the catching-up of the initial numbers of persons in the 50-74 age group and in the group of those aged 75 years or over. The initial numbers are too small in relation to the prevailing level of mortality, and their number therefore rises (table 31). For the 50-74 year old age group the catching up process takes 50 years rather than 25 years. The situation for the oldest age group is more complicated because of the as-

TABLE 31. WORLD AGE DISTRIBUTION UNDER THE LOW, LOW-MEDIUM, MEDIUM, HIGH-MEDIUM AND HIGH SCENARIOS, BOTH SEXES, UNIFORM 25-YEAR AGE GROUPS, AT 25-YEAR INTERVALS, 2000-2150

Age group	*Year*							*Year*						
	2000	*2025*	*2050*	*2075*	*2100*	*2125*	*2150*	*2000*	*2025*	*2050*	*2075*	*2100*	*2125*	*2150*
	Low scenario													
	Number of persons (millions)							*Per cent distribution*						
0-24	2 837	2 504	1 902	1 450	1 113	858	664	47	34	25	21	18	15	12
25-49	2 111	2 702	2 425	1 869	1 433	1 103	852	35	37	32	27	23	19	16
50-74	932	1 771	2 355	2 162	1 704	1 330	1 038	15	24	31	31	27	23	19
75+	148	298	662	922	903	783	682	2	4	9	13	14	14	13
	Low-medium scenario													
	Number of persons (millions)							*Per cent distribution*						
0-24	2 837	2 504	2 109	1 870	1 678	1 510	1 362	47	34	28	27	27	26	26
25-49	2 111	2 702	2 436	2 078	1 852	1 666	1 501	35	37	32	30	29	29	28
50-74	932	1 771	2 353	2 171	1 899	1 723	1 571	15	24	31	31	30	30	29
75+	148	298	648	904	894	881	895	2	4	9	13	14	15	17
	Medium scenario													
	Number of persons (millions)							*Per cent distribution*						
0-24	2 863	3 023	2 926	2 870	2 853	2 844	2 842	47	39	33	31	30	30	29
25-49	2 111	2 731	2 936	2 877	2 839	2 830	2 827	35	35	33	31	30	30	29
50-74	932	1 773	2 384	2 629	2 634	2 645	2 673	15	23	27	28	28	28	27
75+	148	298	663	943	1 133	1 254	1 403	2	4	7	10	12	13	14
	High-medium scenario													
	Number of persons (millions)							*Per cent distribution*						
0-24	2 890	3 548	3 894	4 140	4 457	4 814	5 212	48	42	37	34	33	33	32
25-49	2 112	2 759	3 458	3 839	4 102	4 425	4 787	35	33	33	32	31	30	30
50-74	932	1 774	2 407	3 108	3 520	3 827	4 184	15	21	23	26	26	26	26
75+	148	298	650	939	1 351	1 669	2 034	2	4	6	8	10	11	13
	High scenario													
	Number of persons (millions)							*Per cent distribution*						
0-24	2 890	3 548	4 152	5 006	6 104	7 471	9 171	48	42	40	42	45	51	57
25-49	2 112	2 759	3 449	4 086	4 955	6 057	7 427	35	33	33	34	37	41	46
50-74	932	1 774	2 409	3 099	3 754	4 629	5 732	15	21	23	26	28	31	35
75+	148	298	663	957	1 365	1 829	2 504	2	4	6	8	10	12	15

NOTE: Per cent age distributions show per cent of persons in each broad age group at each point in time. Values in columns sum to 100 but for rounding error.

sumption of continuously increasing life expectancy. As long as life expectancy is increasing, the number of persons in this age group never quite catches up.

The distinctive, lagged pattern of population growth in different age groups in the medium scenario is an intrinsic feature of population dynamics. The time required for the initial, "young" population age distribution to move to a shape consistent with zero population growth and high life expectancy reflects the length of the human life span. This is the main reason that increases in the size of the population continue for such a long time and that the number of people grows so substantially.

Figure 11. Changing world age distribution, both sexes, medium scenario, 2000-2150

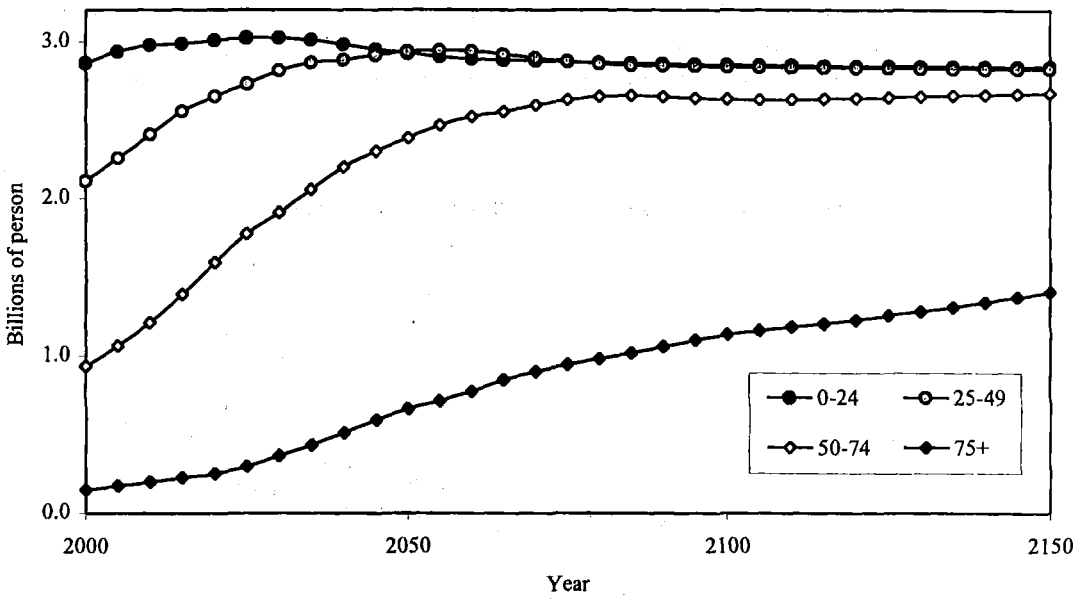
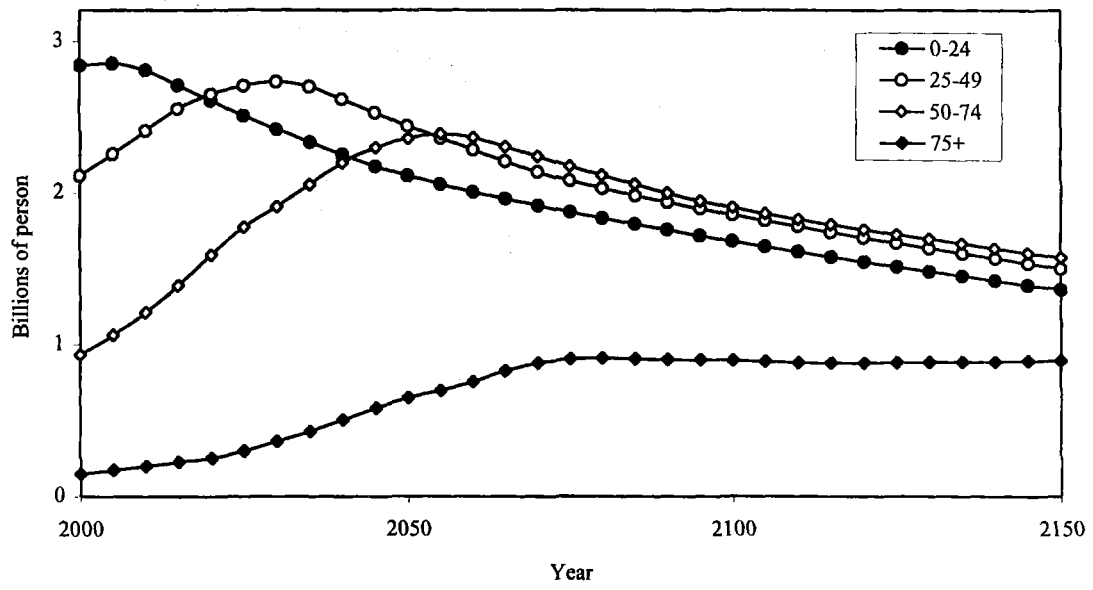


Figure 12. Changing world age distribution, both sexes, low-medium scenario, 2000-2150

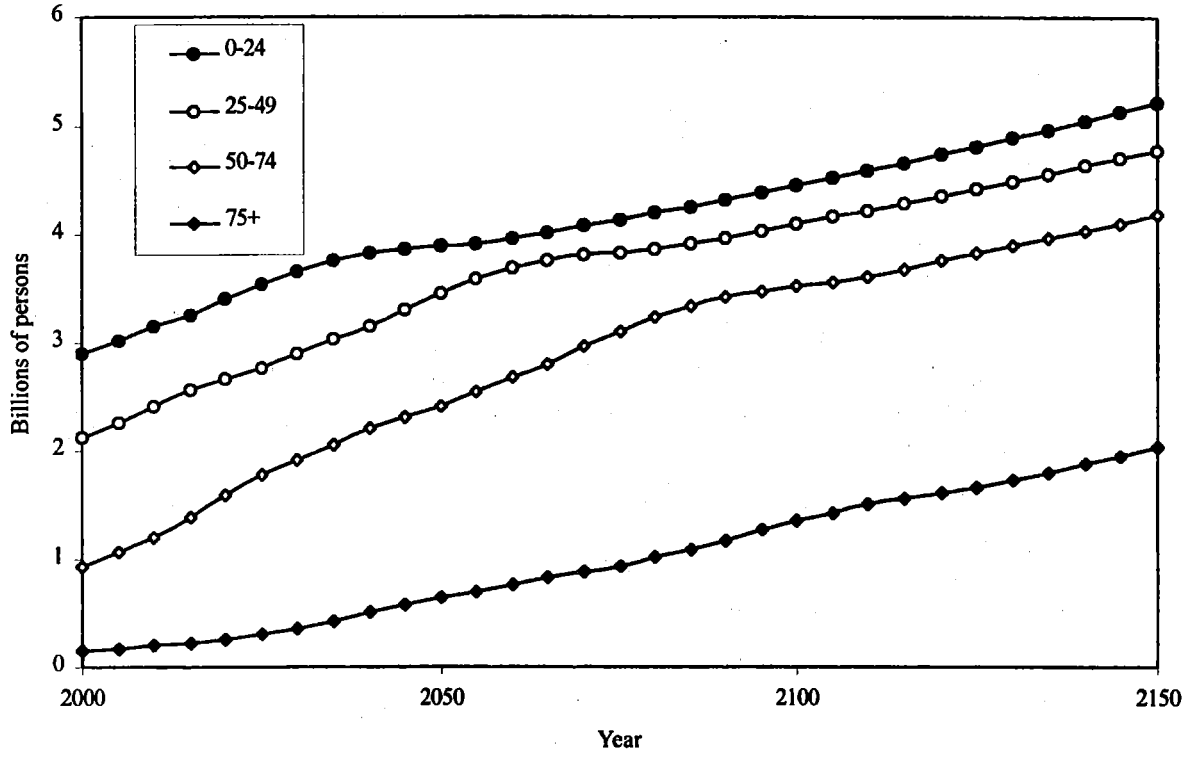


The low-medium scenario presents a very different picture. Here the number of persons aged 0-24 years declines by nearly half over the 150-year period (table 31, figure 12). The number of persons in the 25-49 age group rises initially, for the same reason that it rises in the medium scenario. After several decades, however, the decline in the number of persons aged 0-24 necessarily translates into a corresponding but lagged decline of the number in the 25-49 age group. The same is

true for the 50-74 age group, but the number of persons in this group rises more and over a longer period before beginning to decline. For the 75+ age group, the long-term decline implied by the declining number of young persons is largely offset by rising life expectancy.

The high-medium scenario also presents a very different picture, but in this case the number of persons in all age groups rises, though the numbers in older age groups increase more than the numbers in younger age groups (table 31, figure 13).

Figure 13. Changing world age distribution, both sexes, high-medium scenario, 2000-2150



V. CONCLUSION

The long-range population projections presented in this report address two of the most urgent questions about world population growth: how long will world population continue to increase? And how large will the population be when it stops increasing? The medium scenario produces a world population that rises to 9.7 billion in 2150, by which time growth is very low but will not have ceased. In fact, if fertility is maintained at replacement level after 2150 and mortality continues to decrease until it reaches the lowest levels now considered possible, it will take at least another 150 years for the population size to become stable at about 10.3 billion inhabitants.

The uncertainty surrounding the future path of population growth is evident from a comparison of the results produced by the medium scenario and those yielded by the low and high scenarios. In the low scenario, the world population peaks at 7.5 billion persons in 2040 and declines steadily for the next 110 years, falling to 3.2 billion persons in 2150 (table 16). In the high scenario, the world population increases steadily to reach 24.8 billion in 2150.

Just as the twentieth century has been the century of population expansion, so the twenty-first century will be the century of population ageing. Because of the decline of fertility that has already occurred and that which is expected in the future, population ageing is unavoidable. Thus, the five main scenarios of the long-range projections all produce a very marked ageing of the population over the next century. Even the high scenario, with its steadily increasing population, slows but does not prevent population ageing: the percentage of persons aged 60 years or over more than doubles between 2000 and 2150 in that scenario, rising from 10 to 24 per cent. In the medium scenario the percentage of persons aged 60 years or more triples over the same period, and in the low scenario it quadruples, from 10 to 41 per cent. The percentage of the oldest old (persons aged 80 years or over) increases even more, often by a factor of 10.

Population ageing is an inevitable concomitant of the long-term decline of fertility and mortality, and of the resulting levels of low population growth. In the distant past, human populations had relatively few older persons because most people died before getting old. In the more recent past, increasing life expectancy resulted in higher numbers of persons surviving to older ages. Because the level of fertility remained relatively high, however, many children were born and population growth rates increased rapidly. Consequently, the age distribution of the population became "younger" than in the past, despite increases in life expectancy, because more young persons survived among the increasing numbers being born. Only when levels of fertility began a steady decline did the growth of the younger age groups began to decrease so that, eventually, if low and constant levels of fertility prevail, the increasing levels of life expectancy will be translated directly into more older persons and therefore yield "older" age distributions.

The anticipated increases in both the number and percentage of older persons in the coming century are as historically unprecedented as the rapid population growth experienced during the twentieth century. Never before has humankind as a whole experienced the low levels of fertility, mortality and population growth that make this ageing possible. The age distribution of the population exerts an important influence on nearly every aspect of human life and society. The challenges posed by the need to ensure a decent standard of living for the increasing numbers of older persons is only the most visible issue. The implications of an ageing population for the length of working life, the availability of continuing education, the structure of households, the level of political participation and the health system need to be confronted before the momentum of the ageing process accelerates further.

Although none of the long-term projections presented in this report can be regarded as a forecast of future population dynamics, they collectively

provide valuable insights into future population trends. The near certainty of an acceleration of population ageing is one of them. The high likelihood that fertility levels will continue to decline is another since, as the constant-fertility scenario indicates, constant fertility at current levels would result in an impossibly large population. The projections also show that, if sustained fertility decline is achieved so that most countries reach and maintain fertility levels below replacement, the human population can stop growing within the next 50 years at a level well below 8 billion persons. If fertility reductions are not as marked, the population may instead continue to grow steadily as in the high scenario, experiencing sizeable increases over the next 150 years. Because of the nature of exponential growth (or decline) and the long period over which projections are calculated, small differences in the prevailing level of fertility over that period result in very large differences in population size, thus increasing the level of uncertainty regarding the future number of persons on earth. This very uncertainty, however, underscores the importance of future action: policies or programmes that influence the course of population dynamics have the potential to make a considerable impact on the long-term future of humankind. For, as the scenarios presented in this report show, the achievement of a stable population size requires very careful fine-tuning of fertility and mortality trends, so that one is adjusted to the level of the other, a feat that is unlikely to occur in reality. However, an approximation to that ideal situation is more likely to be achieved by concerted action aimed at achieving and maintaining low fertility and at continuing to improve the chances of survival of people in all countries of the world.

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ANNEX TABLES

TABLE A.1. PERCENTAGE OF POPULATION IN BROAD AGE GROUPS, WORLD AND EIGHT MAJOR AREAS: LOW, LOW-MEDIUM, MEDIUM, HIGH-MEDIUM AND HIGH FERTILITY SCENARIOS WITH CONSTANT MORTALITY, SELECTED YEARS, 2000-2150
(*Millions of persons*)

World

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	29	61	10	1	29	61	10	1	30	60	10	1	30	60	10	1	30	60	10	1
2025.....	20	64	16	2	20	64	16	2	23	61	15	2	27	59	14	2	27	59	14	2
2050.....	15	59	27	5	16	58	25	4	20	58	22	4	23	59	18	3	24	57	18	3
2075.....	13	54	33	8	16	55	29	6	19	56	25	6	21	58	20	4	24	56	20	4
2100.....	13	52	35	9	16	56	28	6	19	55	26	6	21	57	22	4	24	56	20	4
2125.....	13	52	35	9	16	56	28	6	19	56	26	6	21	57	22	4	24	57	19	4
2150.....	13	52	35	9	16	56	28	6	19	56	26	6	21	57	22	4	24	57	19	4

Africa

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	42	53	5	0	42	53	5	0	42	53	5	0	43	52	5	0	43	52	5	0
2025.....	32	62	7	1	32	62	7	1	35	59	6	1	37	57	6	0	37	57	6	0
2050.....	19	66	14	1	21	65	13	1	24	64	12	1	27	64	10	1	28	62	10	1
2075.....	15	59	26	4	18	60	22	3	20	60	20	3	23	61	16	2	26	59	15	2
2100.....	14	55	31	6	17	58	25	4	19	57	24	4	22	59	20	3	25	57	17	3
2125.....	14	55	31	7	17	58	25	4	19	57	24	4	22	59	20	3	25	57	17	3
2150.....	14	55	31	7	17	58	25	4	19	57	24	4	22	59	20	3	25	57	17	3

Europe

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	17	62	20	3	17	62	20	3	17	62	20	3	18	62	20	3	18	62	20	3
2025.....	13	58	29	5	13	58	29	5	15	57	28	5	17	56	26	5	17	56	26	5
2050.....	11	50	40	10	12	50	38	9	14	51	35	9	17	53	29	7	19	52	29	8
2075.....	10	48	42	14	14	50	36	11	16	51	32	10	19	55	26	6	21	53	25	7
2100.....	10	48	42	14	16	53	31	9	18	53	29	8	20	55	25	6	23	54	23	6
2125.....	10	48	42	13	16	55	29	7	18	54	27	7	21	56	23	5	23	56	21	5
2150.....	10	48	42	13	16	55	29	7	18	54	27	7	21	56	23	5	23	56	21	5

TABLE A.1 (*continued*)

Latin America and the Caribbean

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	31	61	8	1	31	61	8	1	32	61	8	1	32	60	8	1	32	60	8	1
2025.....	20	65	15	2	20	65	15	2	24	62	14	2	27	60	13	2	27	60	13	2
2050.....	15	58	28	5	16	57	26	4	20	58	22	4	23	59	18	3	25	57	18	3
2075.....	13	52	34	9	16	54	30	7	19	56	26	6	22	58	20	4	24	56	19	4
2100.....	13	52	35	9	17	55	28	7	19	55	26	6	21	57	22	4	24	56	20	4
2125.....	13	52	35	9	17	55	28	6	19	55	26	6	21	57	22	5	24	56	20	4
2150.....	13	52	35	9	17	55	28	6	19	55	26	6	21	57	22	5	24	56	20	4

Northern America

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	21	62	17	3	21	62	17	3	21	62	16	3	21	62	16	3	21	62	16	3
2025.....	15	58	27	5	15	58	27	5	18	56	26	4	21	55	24	4	21	55	24	4
2050.....	13	54	33	9	14	53	33	9	17	55	28	8	20	55	25	7	21	55	24	7
2075.....	12	50	39	12	15	50	35	11	17	53	30	9	20	55	25	6	22	54	24	7
2100.....	11	49	40	13	16	52	32	9	18	53	29	9	20	55	25	6	23	54	23	6
2125.....	11	49	40	13	16	53	31	9	18	54	28	8	21	55	24	6	23	55	22	6
2150.....	11	49	40	13	16	53	31	8	18	54	28	8	21	55	24	6	23	55	22	6

Oceania

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	25	62	14	2	25	62	14	2	25	61	13	2	25	61	13	2	25	61	13	2
2025.....	18	61	21	3	18	61	21	3	21	59	20	3	24	58	18	3	24	58	18	3
2050.....	14	56	30	7	16	56	29	7	19	57	24	6	21	57	22	5	23	56	22	5
2075.....	13	51	36	10	16	52	32	9	18	54	28	7	21	56	23	5	23	55	22	6
2100.....	12	50	37	12	16	53	31	8	18	54	28	8	20	55	24	6	23	55	22	6
2125.....	12	50	37	12	16	54	30	8	18	54	28	8	20	55	24	6	23	55	22	5
2150.....	12	50	37	12	16	54	30	8	18	54	28	8	20	55	24	6	23	55	22	5

TABLE A.1 (*continued*)

Asia excluding China and India

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	32	60	8	1	32	60	8	1	32	60	8	1	33	59	8	1	33	59	8	1
2025.....	21	65	14	2	21	65	14	2	24	63	13	2	28	60	12	1	28	60	12	1
2050.....	15	59	26	4	17	59	24	4	20	59	21	3	23	60	17	3	25	58	17	3
2075.....	13	53	33	8	16	55	28	6	19	56	25	6	21	58	20	3	24	57	20	4
2100.....	13	52	35	9	16	56	28	6	19	55	26	6	21	57	22	4	24	56	20	4
2125.....	13	52	35	9	16	56	28	6	19	55	26	6	21	57	22	4	24	56	20	4
2150.....	13	52	35	9	16	56	28	6	19	55	26	6	21	57	22	4	24	56	20	4

China

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	25	65	10	1	25	65	10	1	25	65	10	1	25	65	10	1	25	65	10	1
2025.....	15	64	21	2	15	64	21	2	18	62	19	2	21	61	19	2	21	61	19	2
2050.....	12	53	35	8	13	54	33	7	16	54	30	7	19	55	25	5	20	54	26	6
2075.....	11	50	38	11	15	52	33	8	17	53	29	8	20	57	23	5	22	55	24	6
2100.....	11	50	38	11	16	54	30	7	18	54	28	7	20	56	24	5	22	55	22	5
2125.....	11	50	38	11	16	55	29	6	18	55	27	7	20	57	23	5	23	56	21	5
2150.....	11	50	38	11	16	55	29	6	18	55	27	6	20	57	23	5	23	56	21	5

India

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	33	59	8	1	33	59	8	1	33	59	8	1	34	59	8	1	34	59	8	1
2025.....	19	68	14	1	19	68	14	1	23	64	13	1	27	61	12	1	27	61	12	1
2050.....	14	60	27	4	15	59	25	3	20	59	21	3	23	60	17	2	25	58	17	2
2075.....	13	53	35	8	15	55	30	6	19	56	25	5	21	59	20	3	25	57	19	4
2100.....	13	53	34	8	16	56	28	6	19	56	25	5	21	58	21	4	25	57	18	3
2125.....	13	53	34	8	16	56	28	5	19	56	25	5	21	58	21	4	25	57	18	3
2150.....	13	53	34	8	16	56	28	5	19	56	25	5	21	58	21	4	25	57	18	3

TABLE A.2. POPULATION IN BROAD AGE GROUPS, WORLD AND EIGHT MAJOR WORLD AREAS: LOW, LOW-MEDIUM, MEDIUM, HIGH-MEDIUM AND HIGH FERTILITY SCENARIOS WITH CONSTANT MORTALITY, SELECTED YEARS, 2000-2150

(*Millions of persons*)

World

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	1 773	3 649	605	70	1 773	3 649	605	70	1 800	3 650	605	70	1 826	3 651	605	70	1 826	3 651	605	70
2025.....	1 461	4 634	1 179	148	1 461	4 634	1 179	148	1 836	4 807	1 180	149	2 220	4 978	1 181	149	2 220	4 978	1 181	149
2050.....	1 076	4 301	1 966	370	1 212	4 313	1 863	324	1 747	5 193	1 970	370	2 306	6 045	1 868	325	2 575	6 127	1 972	371
2075.....	815	3 366	2 095	513	1 043	3 586	1 864	402	1 712	5 135	2 327	517	2 399	6 598	2 282	404	3 102	7 332	2 543	515
2100.....	618	2 531	1 685	436	897	3 057	1 528	331	1 677	4 994	2 337	539	2 487	6 793	2 615	483	3 731	8 751	3 054	633
2125.....	468	1 912	1 269	325	773	2 635	1 293	271	1 643	4 895	2 260	515	2 579	7 053	2 687	511	4 489	10 528	3 614	735
2150.....	355	1 448	958	246	667	2 273	1 117	234	1 611	4 800	2 216	504	2 676	7 325	2 792	531	5 401	12 667	4 342	881

Africa

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	328	412	39	3	328	412	39	3	333	412	39	3	338	412	39	3	338	412	39	3
2025.....	385	744	80	7	385	744	80	7	449	769	80	7	515	795	80	7	515	795	80	7
2050.....	280	976	212	22	318	972	198	18	424	1 130	212	22	529	1 267	198	18	597	1 293	212	22
2075.....	217	863	374	57	264	893	319	42	411	1 221	403	57	529	1 438	372	42	724	1 665	433	57
2100.....	168	654	374	78	218	735	318	54	398	1 175	484	89	525	1 422	481	69	874	1 995	605	100
2125.....	129	501	286	60	180	607	264	45	384	1 132	470	88	521	1 411	477	74	1 053	2 401	727	120
2150.....	99	384	219	47	149	501	218	37	370	1 091	453	86	516	1 399	473	74	1 269	2 891	875	147

Europe

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	126	454	148	21	126	454	148	21	127	454	148	21	130	454	148	21	130	454	148	21
2025.....	85	393	197	35	85	393	197	35	103	402	197	35	130	419	197	35	130	419	197	35
2050.....	58	274	218	57	64	269	206	51	90	319	218	57	123	378	206	51	139	390	218	57
2075.....	39	187	163	54	56	197	144	43	89	277	174	54	132	369	175	43	164	409	195	54
2100.....	26	127	110	36	50	166	99	28	88	261	146	42	141	377	169	40	193	465	198	51
2125.....	18	86	75	24	45	149	78	20	87	260	130	36	151	406	165	38	229	553	213	53
2150.....	12	58	51	16	40	133	70	17	87	259	129	34	162	436	177	40	272	657	252	61

TABLE A.2 (*continued*)

Latin America and the Caribbean

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	161	314	41	5	161	314	41	5	164	314	41	5	167	314	41	5	167	314	41	5
2025.....	127	417	97	12	127	417	97	12	165	435	97	12	205	454	97	12	205	454	97	12
2050.....	96	377	181	32	110	385	174	30	162	466	181	32	227	566	174	30	248	565	181	32
2075.....	75	296	194	50	97	324	179	42	160	469	217	50	240	641	225	42	303	697	241	50
2100.....	59	231	154	42	86	286	148	35	158	466	220	53	254	681	269	53	370	853	298	64
2125.....	46	180	121	33	76	253	130	30	156	461	220	53	269	722	287	60	452	1 043	365	78
2150.....	36	141	94	25	67	224	115	26	154	455	217	52	285	765	304	63	553	1 275	446	96

Northern America

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	65	192	51	10	65	192	51	10	66	193	51	10	67	194	51	10	67	194	51	10
2025.....	52	196	92	15	52	196	92	15	66	205	93	15	82	216	94	15	82	216	94	15
2050.....	42	176	106	30	42	164	101	28	67	215	110	31	83	233	105	28	98	255	111	31
2075.....	31	133	103	33	38	130	90	27	67	203	115	34	90	246	110	28	118	286	127	35
2100.....	23	98	80	26	34	114	69	20	67	197	110	33	97	260	119	30	140	335	142	39
2125.....	17	73	60	20	31	102	59	16	66	197	105	30	105	281	123	31	168	401	162	42
2150.....	13	54	44	15	28	92	53	14	66	196	104	30	113	304	133	33	200	480	194	51

Oceania

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	7.5	18.6	4.1	0.7	7.5	18.6	4.1	0.7	7.7	18.7	4.1	0.7	7.8	18.7	4.1	0.7	7.8	18.7	4.1	0.7
2025.....	6.6	22.2	7.8	1.3	6.6	22.2	7.8	1.3	8.4	23.4	7.8	1.3	10.2	24.6	7.9	1.3	10.2	24.6	7.9	1.3
2050.....	5.1	20.2	10.8	2.6	5.6	20.2	10.4	2.4	8.7	26.3	11.2	2.7	10.6	28.7	10.9	2.5	11.7	29.1	11.3	2.7
2075.....	3.9	15.9	11.2	3.2	5.0	17.0	10.3	2.8	8.7	25.9	13.3	3.4	11.4	31.2	12.8	2.9	14.0	33.8	13.8	3.4
2100.....	3.0	12.3	9.1	2.8	4.5	15.1	8.6	2.3	8.6	25.6	13.3	3.8	12.1	32.8	14.6	3.5	16.6	39.9	16.0	4.1
2125.....	2.3	9.5	7.0	2.2	4.0	13.5	7.5	2.0	8.5	25.4	13.1	3.6	12.8	34.9	15.3	3.7	19.7	47.4	18.7	4.7
2150.....	1.8	7.3	5.4	1.7	3.6	12.0	6.7	1.8	8.5	25.2	13.0	3.6	13.6	37.1	16.2	3.9	23.4	56.4	22.2	5.6

TABLE A.2 (*continued*)

Asia excluding China and India

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	438	828	116	12	438	828	116	12	447	828	116	12	455	828	116	12	455	828	116	12
2025.....	369	1 147	248	30	369	1 147	248	30	468	1 197	248	30	568	1 244	248	30	568	1 244	248	30
2050.....	278	1 092	475	79	323	1 112	452	67	454	1 333	475	79	597	1 577	452	67	674	1 584	475	79
2075.....	216	868	542	129	283	958	489	100	447	1 337	608	132	635	1 748	607	100	809	1 921	667	129
2100.....	168	673	443	117	249	845	418	89	441	1 319	622	148	671	1 834	708	130	972	2 307	816	171
2125.....	130	523	344	90	220	745	367	77	435	1 301	613	145	706	1 933	744	139	1 167	2 771	979	204
2150.....	101	406	267	70	194	656	324	68	429	1 282	605	143	744	2 036	783	148	1 401	3 328	1 175	245

China

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	316	831	129	12	316	831	129	12	317	831	129	12	319	831	129	12	319	831	129	12
2025.....	212	894	288	31	212	894	288	31	271	921	288	31	321	936	288	31	321	936	288	31
2050.....	149	662	440	100	165	667	414	86	241	797	440	100	317	906	414	86	338	908	440	100
2075.....	106	473	362	106	141	507	323	81	238	724	403	106	328	928	385	81	393	986	426	106
2100.....	76	338	258	74	121	424	236	56	234	696	359	92	340	946	399	81	455	1 121	451	106
2125.....	54	242	185	52	105	367	193	43	231	689	335	82	352	985	400	81	528	1 304	501	112
2150.....	39	173	132	37	90	317	166	37	228	681	331	80	366	1 025	416	83	613	1 516	581	129

India

	Low scenario				*Low-medium scenario*				*Medium scenario*				*High-medium scenario*				*High scenario*			
	Age group				*Age group*				*Age group*				*Age group*				*Age group*			
Year	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*	*0-14*	*15-59*	*60+*	*80+*
2000.....	332	599	77	6	332	599	77	6	338	599	77	6	343	599	77	6	343	599	77	6
2025.....	226	821	168	17	226	821	168	17	306	856	168	17	389	890	168	17	389	890	168	17
2050.....	168	723	324	47	186	725	308	42	299	906	324	47	420	1 090	308	42	471	1 102	324	47
2075.....	127	530	347	83	158	560	309	65	291	877	394	83	433	1 196	396	65	578	1 334	440	83
2100.....	96	397	256	60	134	471	232	47	283	855	383	79	447	1 240	456	76	710	1 635	530	98
2125.....	72	298	192	46	113	399	195	38	276	832	374	78	462	1 281	476	84	872	2 007	649	120
2150.....	54	224	145	35	96	338	165	32	268	810	365	76	477	1 323	491	86	1 070	2 463	797	147

TABLE A.3. CRUDE BIRTH RATES FOR THE WORLD, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	18.7	—	—	—	—	—	—
2000-2005	18.3	—	—	—	—	—	—
2005-2010	18.1	—	—	—	—	—	—
2010-2015	17.6	—	—	—	—	—	—
2015-2020	16.5	—	—	—	—	—	—
2020-2025	15.4	—	—	—	—	—	—
2025-2030	14.7	—	12.7	—	18.7	—	—
2030-2035	14.3	—	12.0	—	17.8	—	—
2035-2040	14.0	—	11.5	—	16.8	—	—
2040-2045	13.7	—	11.2	—	16.2	—	—
2045-2050	13.5	—	10.9	—	15.7	—	—
2050-2055	13.2	9.1	10.6	13.1	15.4	17.3	28.6
2055-2060	13.0	8.7	10.4	12.9	15.3	17.3	29.2
2060-2065	12.9	8.4	10.3	12.8	15.0	17.2	29.8
2065-2070	12.8	8.2	10.3	12.6	14.8	17.1	30.4
2070-2075	12.8	8.1	10.3	12.5	14.5	17.0	31.0
2075-2080	12.7	8.0	10.2	12.4	14.3	17.0	31.6
2080-2085	12.6	7.9	10.2	12.3	14.2	16.9	32.1
2085-2090	12.5	7.8	10.2	12.3	14.2	16.9	32.5
2090-2095	12.4	7.7	10.2	12.2	14.1	16.9	32.9
2095-2100	12.3	7.7	10.2	12.2	13.9	16.8	33.2
2100-2105	12.3	7.6	10.1	12.1	13.9	16.8	33.6
2105-2110	12.2	7.6	10.1	12.1	13.8	16.8	33.9
2110-2115	12.1	7.5	10.1	12.1	13.8	16.8	34.2
2115-2120	12.1	7.5	10.1	12.0	13.8	16.7	34.5
2120-2125	12.0	7.5	10.0	12.0	13.7	16.7	34.7
2125-2130	12.0	7.4	10.0	11.9	13.7	16.6	35.0
2130-2135	11.9	7.4	9.9	11.9	13.6	16.6	35.2
2135-2140	11.8	7.3	9.9	11.9	13.6	16.6	35.4
2140-2145	11.8	7.3	9.8	11.8	13.5	16.5	35.6
2145-2150	11.7	7.3	9.8	11.8	13.5	16.5	35.8

TABLE A.4. CRUDE BIRTH RATES FOR AFRICA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	20.7	—	—	—	—	—	—
2000-2005	22.8	—	—	—	—	—	—
2005-2010	24.1	—	—	—	—	—	—
2010-2015	23.8	—	—	—	—	—	—
2015-2020	21.7	—	—	—	—	—	—
2020-2025	19.2	—	—	—	—	—	—
2025-2030	17.6	—	21.1	—	27.2	—	—
2030-2035	16.7	—	18.6	—	24.5	—	—
2035-2040	16.1	—	16.7	—	21.9	—	—
2040-2045	15.7	—	15.8	—	20.3	—	—
2045-2050	15.2	—	15.0	—	19.3	—	—
2050-2055	14.7	12.2	14.1	16.2	18.5	20.8	40.8
2055-2060	14.2	11.3	13.3	15.4	17.8	20.0	40.8
2060-2065	14.0	10.5	12.7	14.7	17.0	19.3	40.8
2065-2070	13.8	9.9	12.3	14.2	16.4	18.9	40.8
2070-2075	13.7	9.6	11.9	13.9	15.9	18.7	40.8
2075-2080	13.5	9.3	11.6	13.6	15.5	18.5	40.7
2080-2085	13.4	9.1	11.4	13.3	15.3	18.2	40.6
2085-2090	13.2	8.8	11.2	13.0	15.0	18.0	40.6
2090-2095	13.0	8.6	11.0	12.8	14.8	17.9	40.5
2095-2100	12.9	8.5	10.9	12.7	14.6	17.8	40.5
2100-2105	12.8	8.4	10.8	12.6	14.5	17.7	40.4
2105-2110	12.7	8.4	10.7	12.6	14.4	17.6	40.4
2110-2115	12.6	8.3	10.7	12.5	14.4	17.6	40.3
2115-2120	12.5	8.3	10.6	12.4	14.3	17.5	40.3
2120-2125	12.5	8.2	10.5	12.4	14.2	17.5	40.2
2125-2130	12.4	8.2	10.5	12.3	14.2	17.4	40.2
2130-2135	12.3	8.1	10.4	12.3	14.1	17.4	40.2
2135-2140	12.3	8.1	10.4	12.2	14.1	17.3	40.1
2140-2145	12.2	8.0	10.3	12.1	14.0	17.3	40.1
2145-2150	12.1	8.0	10.3	12.1	14.0	17.2	40.1

TABLE A.5. CRUDE BIRTH RATES FOR EUROPE, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000.....	14.8	—	—	—	—	—	—
2000-2005.....	14.1	—	—	—	—	—	—
2005-2010.....	13.4	—	—	—	—	—	—
2010-2015.....	12.8	—	—	—	—	—	—
2015-2020.....	12.6	—	—	—	—	—	—
2020-2025.....	12.8	—	—	—	—	—	—
2025-2030.....	13.0	—	7.2	—	11.6	—	—
2030-2035.....	12.9	—	7.2	—	11.5	—	—
2035-2040.....	12.7	—	7.2	—	11.5	—	—
2040-2045.....	12.5	—	7.3	—	11.3	—	—
2045-2050.....	12.5	—	7.2	—	11.3	—	—
2050-2055.....	12.5	6.2	7.2	9.5	11.5	12.9	8.3
2055-2060.....	12.6	6.1	7.5	9.8	12.0	13.6	8.2
2060-2065.....	12.5	6.0	7.9	10.2	12.3	14.1	8.2
2065-2070.....	12.3	5.9	8.3	10.5	12.6	14.6	8.1
2070-2075.....	12.3	5.9	8.5	10.8	12.8	14.7	8.1
2075-2080.....	12.2	5.9	8.6	10.9	12.8	14.8	8.0
2080-2085.....	12.2	5.8	8.8	11.0	12.9	15.0	8.0
2085-2090.....	12.1	5.8	9.1	11.2	13.1	15.3	7.9
2090-2095.....	12.1	5.7	9.3	11.4	13.2	15.4	7.9
2095-2100.....	12.0	5.7	9.5	11.5	13.3	15.5	7.8
2100-2105.....	11.9	5.6	9.5	11.5	13.3	15.5	7.8
2105-2110.....	11.9	5.6	9.6	11.5	13.3	15.5	7.7
2110-2115.....	11.8	5.6	9.6	11.6	13.3	15.6	7.7
2115-2120.....	11.8	5.5	9.7	11.6	13.3	15.6	7.6
2120-2125.....	11.7	5.5	9.7	11.6	13.3	15.6	7.6
2125-2130.....	11.6	5.4	9.7	11.6	13.3	15.6	7.5
2130-2135.....	11.6	5.4	9.6	11.6	13.3	15.5	7.5
2135-2140.....	11.5	5.4	9.6	11.5	13.2	15.5	7.5
2140-2145.....	11.5	5.3	9.5	11.5	13.2	15.5	7.4
2145-2150.....	11.4	5.3	9.5	11.4	13.1	15.4	7.4

TABLE A.6. CRUDE BIRTH RATES FOR LATIN AMERICA AND THE CARIBBEAN, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	18.9	—	—	—	—	—	—
2000-2005	19.0	—	—	—	—	—	—
2005-2010	18.7	—	—	—	—	—	—
2010-2015	18.0	—	—	—	—	—	—
2015-2020	16.7	—	—	—	—	—	—
2020-2025	15.6	—	—	—	—	—	—
2025-2030	14.8	—	12.4	—	19.2	—	—
2030-2035	14.4	—	11.9	—	18.5	—	—
2035-2040	14.1	—	11.5	—	17.6	—	—
2040-2045	13.8	—	11.1	—	16.9	—	—
2045-2050	13.4	—	10.8	—	16.2	—	—
2050-2055	13.2	9.1	10.6	13.2	15.8	17.8	28.0
2055-2060	13.0	8.8	10.4	13.0	15.6	17.7	27.3
2060-2065	12.9	8.6	10.3	12.9	15.3	17.6	26.8
2065-2070	12.8	8.4	10.3	12.8	15.0	17.5	26.8
2070-2075	12.7	8.3	10.2	12.6	14.7	17.4	27.6
2075-2080	12.6	8.2	10.2	12.5	14.5	17.3	28.5
2080-2085	12.5	8.1	10.2	12.4	14.3	17.2	28.8
2085-2090	12.5	8.0	10.2	12.3	14.2	17.2	28.8
2090-2095	12.4	8.0	10.2	12.3	14.1	17.1	28.8
2095-2100	12.3	8.0	10.2	12.2	14.0	17.1	28.9
2100-2105	12.2	7.9	10.2	12.2	13.9	17.0	29.0
2105-2110	12.2	7.9	10.1	12.1	13.8	17.0	29.1
2110-2115	12.1	7.8	10.1	12.0	13.8	16.9	29.1
2115-2120	12.1	7.8	10.0	12.0	13.7	16.9	29.0
2120-2125	12.0	7.7	10.0	11.9	13.7	16.8	29.0
2125-2130	11.9	7.7	9.9	11.9	13.6	16.8	29.0
2130-2135	11.9	7.6	9.9	11.9	13.6	16.7	28.9
2135-2140	11.8	7.6	9.8	11.8	13.5	16.7	28.9
2140-2145	11.8	7.5	9.8	11.8	13.5	16.6	28.9
2145-2150	11.7	7.5	9.8	11.7	13.4	16.6	28.8

TABLE A.7. CRUDE BIRTH RATES FOR NORTHERN AMERICA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	14.6	—	—	—	—	—	—
2000-2005	13.7	—	—	—	—	—	—
2005-2010	13.3	—	—	—	—	—	—
2010-2015	13.3	—	—	—	—	—	—
2015-2020	13.2	—	—	—	—	—	—
2020-2025	12.9	—	—	—	—	—	—
2025-2030	12.6	—	9.2	—	14.1	—	—
2030-2035	12.4	—	9.0	—	13.7	—	—
2035-2040	12.3	—	8.9	—	13.5	—	—
2040-2045	12.3	—	8.8	—	13.3	—	—
2045-2050	12.4	—	8.7	—	13.2	—	—
2050-2055	12.3	7.8	8.7	11.4	13.3	14.8	12.2
2055-2060	12.2	7.6	8.8	11.5	13.4	15.3	12.0
2060-2065	12.2	7.4	9.0	11.6	13.6	15.5	11.9
2065-2070	12.1	7.2	9.1	11.5	13.5	15.4	11.8
2070-2075	12.1	7.1	9.1	11.4	13.4	15.4	11.7
2075-2080	12.0	7.0	9.2	11.4	13.4	15.4	11.7
2080-2085	11.9	6.9	9.3	11.5	13.4	15.6	11.6
2085-2090	11.9	6.8	9.4	11.5	13.4	15.6	11.5
2090-2095	11.8	6.8	9.5	11.5	13.4	15.7	11.5
2095-2100	11.8	6.7	9.5	11.5	13.4	15.6	11.4
2100-2105	11.7	6.6	9.5	11.5	13.3	15.6	11.4
2105-2110	11.7	6.6	9.5	11.5	13.3	15.6	11.3
2110-2115	11.6	6.6	9.6	11.5	13.3	15.7	11.3
2115-2120	11.6	6.5	9.5	11.5	13.3	15.6	11.2
2120-2125	11.5	6.5	9.5	11.5	13.2	15.6	11.2
2125-2130	11.5	6.4	9.5	11.4	13.2	15.6	11.1
2130-2135	11.4	6.4	9.4	11.4	13.2	15.5	11.1
2135-2140	11.3	6.3	9.4	11.3	13.1	15.5	11.0
2140-2145	11.3	6.3	9.4	11.3	13.1	15.4	11.0
2145-2150	11.2	6.3	9.3	11.2	13.0	15.4	10.9

TABLE A.8. CRUDE BIRTH RATES FOR OCEANIA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	16.3	—	—	—	—	—	—
2000-2005	15.8	—	—	—	—	—	—
2005-2010	15.3	—	—	—	—	—	—
2010-2015	15.0	—	—	—	—	—	—
2015-2020	14.6	—	—	—	—	—	—
2020-2025	14.0	—	—	—	—	—	—
2025-2030	13.5	—	11.2	—	16.4	—	—
2030-2035	13.1	—	10.8	—	15.8	—	—
2035-2040	12.9	—	10.5	—	15.3	—	—
2040-2045	12.8	—	10.3	—	14.7	—	—
2045-2050	12.7	—	10.1	—	14.4	—	—
2050-2055	12.6	8.6	9.9	12.5	14.4	15.8	21.0
2055-2060	12.4	8.4	9.9	12.4	14.4	16.0	21.1
2060-2065	12.3	8.1	9.9	12.3	14.2	16.1	21.2
2065-2070	12.3	8.0	9.9	12.2	14.0	16.0	21.5
2070-2075	12.2	7.9	9.8	12.1	13.7	15.9	21.7
2075-2080	12.2	7.7	9.8	12.0	13.6	15.9	21.8
2080-2085	12.1	7.6	9.8	11.9	13.6	15.9	21.9
2085-2090	12.0	7.6	9.8	11.9	13.6	15.9	21.9
2090-2095	12.0	7.5	9.9	11.8	13.5	15.9	21.9
2095-2100	11.9	7.5	9.9	11.8	13.4	15.9	21.9
2100-2105	11.9	7.4	9.9	11.8	13.3	15.8	21.9
2105-2110	11.8	7.4	9.8	11.7	13.3	15.8	21.9
2110-2115	11.8	7.3	9.8	11.7	13.3	15.8	21.9
2115-2120	11.7	7.3	9.8	11.7	13.3	15.7	21.8
2120-2125	11.6	7.2	9.7	11.6	13.2	15.7	21.8
2125-2130	11.6	7.2	9.7	11.6	13.2	15.7	21.7
2130-2135	11.5	7.1	9.6	11.5	13.1	15.6	21.7
2135-2140	11.5	7.1	9.6	11.5	13.1	15.6	21.7
2140-2145	11.4	7.1	9.6	11.4	13.0	15.5	21.6
2145-2150	11.4	7.0	9.5	11.4	13.0	15.5	21.6

TABLE A.9. CRUDE BIRTH RATES FOR ASIA EXCLUDING CHINA AND INDIA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	18.9	—	—	—	—	—	—
2000-2005	19.0	—	—	—	—	—	—
2005-2010	18.9	—	—	—	—	—	—
2010-2015	18.3	—	—	—	—	—	—
2015-2020	17.1	—	—	—	—	—	—
2020-2025	15.6	—	—	—	—	—	—
2025-2030	14.7	—	13.2	—	19.5	—	—
2030-2035	14.3	—	12.7	—	18.3	—	—
2035-2040	14.1	—	12.2	—	17.0	—	—
2040-2045	13.8	—	11.7	—	16.2	—	—
2045-2050	13.5	—	11.3	—	16.0	—	—
2050-2055	13.1	9.3	10.9	13.4	15.8	17.5	28.9
2055-2060	12.9	8.9	10.7	13.1	15.4	17.3	29.0
2060-2065	12.8	8.7	10.6	12.9	15.0	17.2	29.2
2065-2070	12.8	8.5	10.5	12.7	14.6	17.1	29.4
2070-2075	12.7	8.3	10.4	12.6	14.4	16.9	29.5
2075-2080	12.6	8.2	10.3	12.4	14.3	16.8	29.5
2080-2085	12.5	8.1	10.3	12.3	14.2	16.8	29.5
2085-2090	12.4	8.0	10.3	12.3	14.0	16.7	29.5
2090-2095	12.4	7.9	10.2	12.2	13.9	16.7	29.5
2095-2100	12.3	7.9	10.2	12.2	13.8	16.6	29.5
2100-2105	12.2	7.8	10.2	12.1	13.8	16.6	29.5
2105-2110	12.2	7.8	10.1	12.1	13.7	16.5	29.5
2110-2115	12.1	7.8	10.1	12.0	13.7	16.5	29.4
2115-2120	12.1	7.7	10.0	12.0	13.6	16.4	29.4
2120-2125	12.0	7.7	10.0	11.9	13.6	16.4	29.4
2125-2130	11.9	7.6	10.0	11.9	13.5	16.3	29.3
2130-2135	11.9	7.6	9.9	11.8	13.5	16.3	29.3
2135-2140	11.8	7.5	9.9	11.8	13.5	16.2	29.3
2140-2145	11.8	7.5	9.8	11.7	13.4	16.2	29.2
2145-2150	11.7	7.5	9.8	11.7	13.4	16.2	29.2

TABLE A.10. CRUDE BIRTH RATES FOR CHINA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	20.0	—	—	—	—	—	—
2000-2005	17.1	—	—	—	—	—	—
2005-2010	15.8	—	—	—	—	—	—
2010-2015	15.2	—	—	—	—	—	—
2015-2020	14.7	—	—	—	—	—	—
2020-2025	14.5	—	—	—	—	—	—
2025-2030	13.9	—	8.9	—	13.5	—	—
2030-2035	13.3	—	8.5	—	13.4	—	—
2035-2040	13.0	—	8.5	—	13.4	—	—
2040-2045	12.9	—	8.5	—	13.3	—	—
2045-2050	12.9	—	8.3	—	12.7	—	—
2050-2055	12.8	7.1	8.2	10.6	12.6	13.9	10.6
2055-2060	12.6	6.9	8.3	11.0	12.9	14.5	10.5
2060-2065	12.5	6.8	8.6	11.4	13.3	15.0	10.5
2065-2070	12.5	6.8	8.9	11.5	13.4	15.0	10.5
2070-2075	12.5	6.8	8.9	11.3	13.1	14.9	10.5
2075-2080	12.4	6.7	8.9	11.3	13.0	15.0	10.4
2080-2085	12.3	6.6	9.0	11.5	13.1	15.2	10.3
2085-2090	12.2	6.6	9.2	11.8	13.3	15.5	10.3
2090-2095	12.2	6.6	9.4	11.8	13.3	15.5	10.3
2095-2100	12.1	6.6	9.4	11.7	13.1	15.4	10.3
2100-2105	12.1	6.5	9.4	11.7	13.0	15.3	10.2
2105-2110	12.0	6.5	9.4	11.7	13.1	15.4	10.1
2110-2115	11.9	6.4	9.4	11.8	13.1	15.5	10.1
2115-2120	11.9	6.4	9.4	11.8	13.1	15.5	10.1
2120-2125	11.8	6.4	9.4	11.8	13.1	15.4	10.0
2125-2130	11.8	6.3	9.3	11.7	13.0	15.3	10.0
2130-2135	11.7	6.3	9.3	11.7	12.9	15.3	9.9
2135-2140	11.7	6.2	9.3	11.7	12.9	15.3	9.9
2140-2145	11.6	6.2	9.2	11.6	12.9	15.2	9.8
2145-2150	11.6	6.2	9.2	11.6	12.9	15.2	9.8

TABLE A.11. CRUDE BIRTH RATES FOR INDIA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	19.8	—	—	—	—	—	—
2000-2005	19.9	—	—	—	—	—	—
2005-2010	19.9	—	—	—	—	—	—
2010-2015	19.2	—	—	—	—	—	—
2015-2020	17.4	—	—	—	—	—	—
2020-2025	15.9	—	—	—	—	—	—
2025-2030	15.2	—	11.9	—	19.4	—	—
2030-2035	14.9	—	11.0	—	18.3	—	—
2035-2040	14.6	—	10.5	—	17.5	—	—
2040-2045	14.1	—	10.4	—	16.9	—	—
2045-2050	13.7	—	10.3	—	16.3	—	—
2050-2055	13.5	8.6	10.1	13.1	15.9	18.1	26.3
2055-2060	13.3	8.3	9.8	12.8	15.6	17.9	26.3
2060-2065	13.2	8.1	9.8	12.7	15.3	17.8	26.3
2065-2070	13.1	7.9	9.8	12.6	15.1	17.8	26.2
2070-2075	12.9	7.9	9.9	12.5	14.8	17.7	26.2
2075-2080	12.8	7.8	9.9	12.4	14.6	17.7	26.2
2080-2085	12.8	7.7	9.9	12.4	14.5	17.7	26.2
2085-2090	12.7	7.7	10.0	12.3	14.4	17.6	26.2
2090-2095	12.6	7.7	10.0	12.3	14.3	17.6	26.1
2095-2100	12.5	7.7	10.1	12.3	14.2	17.6	26.1
2100-2105	12.4	7.6	10.1	12.2	14.1	17.5	26.1
2105-2110	12.4	7.6	10.0	12.2	14.1	17.5	26.1
2110-2115	12.3	7.6	10.0	12.1	14.0	17.5	26.0
2115-2120	12.2	7.5	10.0	12.1	14.0	17.4	26.0
2120-2125	12.2	7.5	9.9	12.1	13.9	17.4	26.0
2125-2130	12.1	7.5	9.9	12.0	13.9	17.4	25.9
2130-2135	12.1	7.4	9.8	12.0	13.8	17.3	25.9
2135-2140	12.0	7.4	9.8	11.9	13.8	17.3	25.9
2140-2145	11.9	7.3	9.8	11.9	13.8	17.3	25.8
2145-2150	11.9	7.3	9.7	11.8	13.7	17.2	25.8

TABLE A.12. CRUDE DEATH RATES FOR THE WORLD, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	8.6	—	—	—	—	—	—
2000-2005	8.5	—	—	—	—	—	—
2005-2010	8.5	—	—	—	—	—	—
2010-2015	8.4	—	—	—	—	—	—
2015-2020	8.3	—	—	—	—	—	—
2020-2025	8.4	—	—	—	—	—	—
2025-2030	8.6	—	8.9	—	8.0	—	—
2030-2035	9.0	—	9.5	—	8.1	—	—
2035-2040	9.5	—	10.1	—	8.3	—	—
2040-2045	10.0	—	10.8	—	8.6	—	—
2045-2050	10.5	—	11.6	—	8.9	—	—
2050-2055	10.9	12.6	12.2	10.4	9.0	8.9	7.0
2055-2060	11.2	13.3	12.8	10.8	9.2	8.9	6.6
2060-2065	11.4	14.0	13.3	11.0	9.2	8.9	6.2
2065-2070	11.5	14.7	13.8	11.2	9.3	8.8	5.7
2070-2075	11.5	15.4	14.2	11.4	9.4	8.7	5.4
2075-2080	11.5	15.9	14.4	11.6	9.5	8.7	5.0
2080-2085	11.3	16.3	14.5	11.7	9.6	8.7	4.7
2085-2090	11.2	16.6	14.5	11.7	9.7	8.6	4.4
2090-2095	11.2	16.7	14.3	11.7	9.9	8.6	4.2
2095-2100	11.3	16.8	14.2	11.7	10.0	8.5	4.0
2100-2105	11.3	17.0	14.0	11.7	10.1	8.5	3.8
2105-2110	11.2	17.0	13.8	11.7	10.1	8.4	3.6
2110-2115	11.2	17.0	13.7	11.6	10.1	8.3	3.5
2115-2120	11.1	16.9	13.5	11.5	10.1	8.2	3.3
2120-2125	11.1	16.8	13.4	11.4	10.0	8.1	3.2
2125-2130	11.0	16.7	13.3	11.3	9.9	8.0	3.1
2130-2135	11.0	16.6	13.2	11.2	9.8	7.9	3.0
2135-2140	11.0	16.6	13.1	11.1	9.7	7.9	2.9
2140-2145	10.9	16.5	13.0	11.1	9.7	7.8	2.8
2145-2150	10.8	16.4	13.0	11.0	9.6	7.7	2.7

TABLE A.13. CRUDE DEATH RATES FOR AFRICA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	12.5	—	—	—	—	—	—
2000-2005	12.7	—	—	—	—	—	—
2005-2010	12.4	—	—	—	—	—	—
2010-2015	11.5	—	—	—	—	—	—
2015-2020	10.4	—	—	—	—	—	—
2020-2025	9.6	—	—	—	—	—	—
2025-2030	9.2	—	8.1	—	7.7	—	—
2030-2035	9.1	—	7.7	—	7.1	—	—
2035-2040	9.2	—	7.7	—	6.8	—	—
2040-2045	9.6	—	7.8	—	6.7	—	—
2045-2050	10.0	—	8.1	—	6.7	—	—
2050-2055	10.5	8.8	8.4	7.6	6.8	6.8	4.8
2055-2060	11.0	9.4	8.9	8.0	6.9	6.9	4.4
2060-2065	11.4	10.1	9.4	8.4	7.2	7.0	4.0
2065-2070	11.6	10.9	10.0	8.8	7.4	7.2	3.7
2070-2075	11.5	11.7	10.5	9.2	7.7	7.3	3.4
2075-2080	11.3	12.5	11.1	9.6	8.1	7.5	3.2
2080-2085	11.0	13.3	11.6	10.1	8.5	7.7	3.0
2085-2090	10.8	14.1	12.1	10.5	8.9	7.9	2.8
2090-2095	11.0	14.9	12.6	10.9	9.3	8.1	2.7
2095-2100	11.3	15.6	13.0	11.3	9.6	8.2	2.7
2100-2105	11.4	16.1	13.2	11.5	9.9	8.3	2.6
2105-2110	11.4	16.4	13.3	11.6	10.0	8.3	2.5
2110-2115	11.3	16.5	13.4	11.7	10.1	8.2	2.5
2115-2120	11.3	16.5	13.4	11.7	10.1	8.2	2.4
2120-2125	11.3	16.3	13.3	11.6	10.1	8.1	2.4
2125-2130	11.3	16.2	13.3	11.5	10.0	8.0	2.3
2130-2135	11.3	16.1	13.2	11.5	9.9	8.0	2.3
2135-2140	11.3	16.1	13.2	11.4	9.9	7.9	2.2
2140-2145	11.2	16.1	13.1	11.4	9.8	7.9	2.2
2145-2150	11.2	16.0	13.1	11.3	9.8	7.8	2.1

TABLE A.14. CRUDE DEATH RATES FOR EUROPE, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	11.3	—	—	—	—	—	—
2000-2005	11.3	—	—	—	—	—	—
2005-2010	11.3	—	—	—	—	—	—
2010-2015	11.3	—	—	—	—	—	—
2015-2020	11.4	—	—	—	—	—	—
2020-2025	11.5	—	—	—	—	—	—
2025-2030	11.6	—	13.6	—	12.2	—	—
2030-2035	11.7	—	14.4	—	12.5	—	—
2035-2040	11.9	—	15.3	—	12.9	—	—
2040-2045	12.0	—	16.2	—	13.2	—	—
2045-2050	12.1	—	17.0	—	13.5	—	—
2050-2055	12.0	17.9	17.7	15.6	13.5	13.1	15.6
2055-2060	11.8	18.6	18.3	15.7	13.4	12.8	15.9
2060-2065	11.6	19.2	18.7	15.7	13.1	12.4	16.0
2065-2070	11.4	19.6	18.9	15.5	12.8	12.0	16.1
2070-2075	11.2	19.9	18.8	15.2	12.4	11.5	16.2
2075-2080	11.1	20.1	18.5	14.8	12.0	10.9	16.1
2080-2085	11.1	20.0	18.0	14.2	11.6	10.5	16.0
2085-2090	11.1	19.7	17.3	13.7	11.3	10.0	15.9
2090-2095	11.2	19.6	16.6	13.2	11.1	9.7	15.9
2095-2100	11.1	19.5	16.0	12.9	11.0	9.5	15.9
2100-2105	11.0	19.6	15.5	12.6	10.9	9.3	15.8
2105-2110	10.9	19.7	15.0	12.4	10.7	9.0	15.8
2110-2115	10.9	19.6	14.5	12.1	10.5	8.8	15.7
2115-2120	10.8	19.5	14.0	11.8	10.2	8.6	15.6
2120-2125	10.8	19.4	13.5	11.5	10.0	8.4	15.6
2125-2130	10.8	19.3	13.2	11.2	9.8	8.2	15.5
2130-2135	10.7	19.3	13.0	11.0	9.6	8.0	15.5
2135-2140	10.6	19.2	12.8	10.8	9.4	7.9	15.4
2140-2145	10.6	19.2	12.6	10.6	9.3	7.8	15.4
2145-2150	10.5	19.1	12.5	10.6	9.2	7.7	15.3

TABLE A.15. CRUDE DEATH RATES FOR LATIN AMERICA AND THE CARIBBEAN, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	6.4	—	—	—	—	—	—
2000-2005	6.4	—	—	—	—	—	—
2005-2010	6.5	—	—	—	—	—	—
2010-2015	6.6	—	—	—	—	—	—
2015-2020	6.7	—	—	—	—	—	—
2020-2025	7.0	—	—	—	—	—	—
2025-2030	7.4	—	7.7	—	6.7	—	—
2030-2035	8.0	—	8.5	—	7.0	—	—
2035-2040	8.6	—	9.3	—	7.4	—	—
2040-2045	9.3	—	10.1	—	7.8	—	—
2045-2050	9.9	—	10.9	—	8.1	—	—
2050-2055	10.4	12.1	11.7	9.9	8.3	8.1	7.0
2055-2060	10.9	13.0	12.5	10.3	8.5	8.3	6.7
2060-2065	11.2	13.9	13.1	10.7	8.7	8.4	6.4
2065-2070	11.5	14.7	13.7	11.0	8.8	8.4	6.1
2070-2075	11.6	15.4	14.1	11.2	8.9	8.3	5.8
2075-2080	11.5	15.9	14.4	11.3	9.0	8.3	5.5
2080-2085	11.4	16.3	14.5	11.4	9.2	8.2	5.3
2085-2090	11.3	16.4	14.4	11.4	9.3	8.2	5.0
2090-2095	11.3	16.5	14.2	11.4	9.5	8.2	4.8
2095-2100	11.3	16.4	14.0	11.4	9.7	8.2	4.6
2100-2105	11.3	16.4	13.8	11.4	9.8	8.1	4.3
2105-2110	11.3	16.3	13.5	11.3	9.8	8.0	4.1
2110-2115	11.2	16.2	13.4	11.3	9.9	8.0	4.0
2115-2120	11.1	16.1	13.2	11.2	9.9	7.9	3.8
2120-2125	11.1	16.1	13.1	11.2	9.8	7.8	3.7
2125-2130	11.0	16.0	13.1	11.2	9.8	7.8	3.6
2130-2135	11.0	16.0	13.0	11.1	9.7	7.7	3.5
2135-2140	10.9	15.9	13.0	11.0	9.6	7.6	3.5
2140-2145	10.9	15.8	12.9	11.0	9.6	7.6	3.4
2145-2150	10.8	15.8	12.8	10.9	9.5	7.5	3.4

TABLE A.16. CRUDE DEATH RATES FOR NORTHERN AMERICA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	8.4	—	—	—	—	—	—
2000-2005	8.6	—	—	—	—	—	—
2005-2010	8.8	—	—	—	—	—	—
2010-2015	8.9	—	—	—	—	—	—
2015-2020	9.2	—	—	—	—	—	—
2020-2025	9.5	—	—	—	—	—	—
2025-2030	10.1	—	10.5	—	9.2	—	—
2030-2035	10.8	—	11.5	—	9.7	—	—
2035-2040	11.5	—	12.5	—	10.3	—	—
2040-2045	11.9	—	13.4	—	10.7	—	—
2045-2050	12.1	—	14.0	—	10.8	—	—
2050-2055	11.9	14.0	14.4	11.7	10.7	10.0	11.2
2055-2060	11.6	14.2	14.5	11.6	10.5	9.7	11.0
2060-2065	11.2	14.4	14.6	11.5	10.3	9.4	10.9
2065-2070	11.0	14.8	14.8	11.6	10.1	9.2	10.9
2070-2075	11.0	15.4	15.1	11.7	10.1	9.1	11.0
2075-2080	11.0	16.1	15.4	11.8	10.0	9.0	11.1
2080-2085	11.1	16.5	15.5	11.9	10.0	9.0	11.2
2085-2090	11.0	16.8	15.3	11.8	9.9	8.8	11.2
2090-2095	10.9	16.9	15.0	11.7	9.8	8.7	11.2
2095-2100	10.8	16.9	14.5	11.6	9.8	8.6	11.2
2100-2105	10.8	16.9	14.1	11.5	9.8	8.5	11.1
2105-2110	10.7	17.0	13.8	11.4	9.8	8.4	11.1
2110-2115	10.7	17.1	13.5	11.3	9.7	8.2	11.1
2115-2120	10.7	17.0	13.2	11.1	9.6	8.0	11.0
2120-2125	10.6	16.9	12.9	10.9	9.5	7.9	10.9
2125-2130	10.5	16.8	12.7	10.7	9.3	7.7	10.9
2130-2135	10.5	16.8	12.6	10.6	9.2	7.6	10.8
2135-2140	10.5	16.8	12.5	10.5	9.1	7.5	10.8
2140-2145	10.4	16.7	12.4	10.4	9.0	7.5	10.7
2145-2150	10.5	16.8	12.4	10.5	9.0	7.5	10.8

TABLE A.17. CRUDE DEATH RATES FOR OCEANIA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	7.7	—	—	—	—	—	—
2000-2005	7.8	—	—	—	—	—	—
2005-2010	7.9	—	—	—	—	—	—
2010-2015	8.0	—	—	—	—	—	—
2015-2020	8.2	—	—	—	—	—	—
2020-2025	8.5	—	—	—	—	—	—
2025-2030	8.9	—	9.0	—	7.7	—	—
2030-2035	9.5	—	9.7	—	8.2	—	—
2035-2040	10.0	—	10.5	—	8.5	—	—
2040-2045	10.4	—	11.1	—	8.8	—	—
2045-2050	10.7	—	11.7	—	9.0	—	—
2050-2055	10.9	12.6	12.2	10.1	9.2	9.0	8.1
2055-2060	11.1	13.1	12.7	10.3	9.3	9.0	7.9
2060-2065	11.2	13.7	13.1	10.5	9.3	8.9	7.6
2065-2070	11.3	14.2	13.5	10.6	9.3	8.8	7.3
2070-2075	11.3	14.8	13.9	10.8	9.4	8.8	7.0
2075-2080	11.3	15.3	14.1	11.0	9.4	8.7	6.7
2080-2085	11.3	15.7	14.3	11.2	9.5	8.6	6.5
2085-2090	11.2	16.0	14.2	11.3	9.6	8.6	6.2
2090-2095	11.1	16.1	14.1	11.4	9.7	8.5	6.0
2095-2100	11.0	16.2	13.8	11.4	9.8	8.5	5.8
2100-2105	11.0	16.2	13.6	11.4	9.8	8.4	5.7
2105-2110	11.0	16.2	13.4	11.3	9.8	8.3	5.5
2110-2115	10.9	16.2	13.2	11.1	9.8	8.2	5.4
2115-2120	10.8	16.2	13.0	11.0	9.7	8.1	5.3
2120-2125	10.8	16.1	12.8	10.9	9.7	8.0	5.3
2125-2130	10.7	16.0	12.7	10.8	9.6	7.9	5.2
2130-2135	10.7	16.0	12.7	10.7	9.5	7.8	5.2
2135-2140	10.6	15.9	12.6	10.7	9.4	7.7	5.1
2140-2145	10.6	15.8	12.5	10.6	9.3	7.7	5.1
2145-2150	10.5	15.8	12.4	10.5	9.3	7.6	5.0

TABLE A.18. CRUDE DEATH RATES FOR ASIA EXCLUDING CHINA AND INDIA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	7.3	—	—	—	—	—	—
2000-2005	7.2	—	—	—	—	—	—
2005-2010	7.1	—	—	—	—	—	—
2010-2015	7.1	—	—	—	—	—	—
2015-2020	7.1	—	—	—	—	—	—
2020-2025	7.3	—	—	—	—	—	—
2025-2030	7.5	—	7.7	—	6.8	—	—
2030-2035	8.0	—	8.1	—	6.8	—	—
2035-2040	8.5	—	8.7	—	7.0	—	—
2040-2045	9.1	—	9.4	—	7.4	—	—
2045-2050	9.7	—	10.2	—	7.7	—	—
2050-2055	10.4	11.5	11.0	9.3	8.0	7.9	5.6
2055-2060	10.9	12.3	11.7	9.8	8.3	8.0	5.4
2060-2065	11.3	13.2	12.4	10.2	8.6	8.1	5.2
2065-2070	11.5	14.0	13.0	10.6	8.8	8.2	5.0
2070-2075	11.6	14.7	13.4	10.9	8.9	8.3	4.7
2075-2080	11.6	15.3	13.8	11.1	9.2	8.3	4.5
2080-2085	11.5	15.8	14.0	11.3	9.4	8.4	4.4
2085-2090	11.3	16.1	14.0	11.5	9.6	8.4	4.3
2090-2095	11.3	16.4	13.9	11.6	9.8	8.5	4.1
2095-2100	11.3	16.5	13.8	11.6	10.0	8.5	4.0
2100-2105	11.4	16.6	13.7	11.6	10.0	8.4	3.9
2105-2110	11.3	16.5	13.5	11.5	10.1	8.3	3.8
2110-2115	11.2	16.4	13.3	11.4	10.0	8.2	3.7
2115-2120	11.1	16.3	13.2	11.3	10.0	8.2	3.7
2120-2125	11.1	16.2	13.2	11.3	9.9	8.1	3.6
2125-2130	11.0	16.1	13.1	11.2	9.8	8.0	3.6
2130-2135	11.0	16.1	13.1	11.1	9.7	8.0	3.5
2135-2140	11.0	16.0	13.0	11.1	9.7	7.9	3.4
2140-2145	10.9	16.0	12.9	11.0	9.6	7.8	3.4
2145-2150	10.8	15.9	12.8	10.9	9.6	7.8	3.3

TABLE A.19. CRUDE DEATH RATES FOR CHINA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	7.1	—	—	—	—	—	—
2000-2005	7.0	—	—	—	—	—	—
2005-2010	7.1	—	—	—	—	—	—
2010-2015	7.3	—	—	—	—	—	—
2015-2020	7.6	—	—	—	—	—	—
2020-2025	7.9	—	—	—	—	—	—
2025-2030	8.5	—	9.7	—	8.8	—	—
2030-2035	9.2	—	10.9	—	9.5	—	—
2035-2040	9.8	—	12.0	—	10.2	—	—
2040-2045	10.6	—	13.4	—	11.0	—	—
2045-2050	11.2	—	14.7	—	11.6	—	—
2050-2055	11.6	16.1	15.7	13.5	12.0	11.8	13.3
2055-2060	11.6	17.0	16.5	13.9	12.0	11.8	13.6
2060-2065	11.6	17.6	16.9	13.9	11.9	11.5	13.7
2065-2070	11.5	18.1	17.2	13.8	11.6	11.2	13.7
2070-2075	11.4	18.5	17.3	13.6	11.4	10.8	13.7
2075-2080	11.5	18.8	17.3	13.5	11.2	10.5	13.6
2080-2085	11.5	19.0	17.1	13.3	11.0	10.2	13.6
2085-2090	11.4	18.8	16.7	13.0	10.8	9.9	13.5
2090-2095	11.3	18.5	16.1	12.7	10.7	9.6	13.3
2095-2100	11.3	18.4	15.6	12.5	10.7	9.4	13.2
2100-2105	11.2	18.3	15.2	12.3	10.7	9.3	13.2
2105-2110	11.1	18.3	14.8	12.1	10.6	9.1	13.1
2110-2115	11.1	18.3	14.5	11.9	10.5	9.0	13.0
2115-2120	11.1	18.2	14.2	11.6	10.4	8.8	12.9
2120-2125	11.0	18.1	13.9	11.4	10.2	8.6	12.8
2125-2130	10.9	18.0	13.7	11.2	10.1	8.5	12.8
2130-2135	10.9	17.9	13.5	11.1	10.0	8.4	12.7
2135-2140	10.8	17.9	13.4	10.9	9.9	8.3	12.7
2140-2145	10.8	17.9	13.3	10.8	9.8	8.2	12.6
2145-2150	10.7	17.8	13.2	10.8	9.7	8.1	12.5

TABLE A.20. CRUDE DEATH RATES FOR INDIA, SEVEN PROJECTION SCENARIOS, 1995-2150

Period	Scenario						
	Instant-replacement	*Low*	*Low-medium*	*Medium*	*High-medium*	*High*	*Constant*
1995-2000	8.5	—	—	—	—	—	—
2000-2005	8.4	—	—	—	—	—	—
2005-2010	8.2	—	—	—	—	—	—
2010-2015	8.1	—	—	—	—	—	—
2015-2020	8.1	—	—	—	—	—	—
2020-2025	8.0	—	—	—	—	—	—
2025-2030	8.3	—	8.4	—	7.5	—	—
2030-2035	8.7	—	9.1	—	7.7	—	—
2035-2040	9.3	—	10.0	—	8.0	—	—
2040-2045	9.8	—	10.9	—	8.3	—	—
2045-2050	10.3	—	11.9	—	8.6	—	—
2050-2055	10.7	12.8	12.7	10.3	8.7	8.5	6.3
2055-2060	11.0	13.9	13.5	10.8	8.9	8.6	6.1
2060-2065	11.3	15.0	14.4	11.3	9.1	8.7	5.9
2065-2070	11.5	16.0	15.1	11.6	9.3	8.7	5.7
2070-2075	11.7	17.0	15.8	12.0	9.5	8.8	5.5
2075-2080	11.6	17.7	16.2	12.2	9.6	8.8	5.4
2080-2085	11.5	18.0	16.2	12.2	9.7	8.7	5.3
2085-2090	11.3	17.9	15.8	12.1	9.7	8.5	5.1
2090-2095	11.3	17.7	15.3	12.0	9.8	8.4	5.1
2095-2100	11.4	17.4	14.8	11.9	9.9	8.3	5.0
2100-2105	11.5	17.3	14.5	11.8	10.0	8.2	4.9
2105-2110	11.4	17.2	14.2	11.8	10.0	8.1	4.8
2110-2115	11.3	17.2	14.0	11.7	10.1	8.1	4.8
2115-2120	11.3	17.2	13.8	11.6	10.1	8.0	4.7
2120-2125	11.2	17.0	13.7	11.6	10.0	7.9	4.6
2125-2130	11.2	16.9	13.5	11.5	9.9	7.8	4.5
2130-2135	11.2	16.8	13.5	11.4	9.8	7.7	4.5
2135-2140	11.1	16.7	13.4	11.3	9.8	7.6	4.4
2140-2145	11.0	16.7	13.4	11.2	9.7	7.6	4.3
2145-2150	11.0	16.6	13.3	11.2	9.6	7.5	4.3

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