

# COMMITTEE FOR DEVELOPMENT PLANNING

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## I. MAIN FINDINGS AND RECOMMENDATIONS

### A. Development challenges of the 1990s

1. In the 1980s, some countries, especially in Asia, grew rapidly; others in the developed and socialist world grew more slowly, while many developing countries, especially in Africa and Latin America, suffered severe losses in real per capita income. While it is not easy to generalize from this experience, it does appear that successful countries gave priority to human development, including the creation of a well-trained and educated labour force, maintained a high rate of investment, often through trade policies oriented towards greater openness, and financed that investment largely through domestic savings.

2. While performance records diverged in the 1980s, policy attitudes appeared to converge. There is a new political openness in the world community characterized by a reduction of ideological conflict and the prospect of reduced expenditure in armaments in both the industrialized countries and the third world. In many countries, a better understanding of the difficult economic realities has contributed to a new pragmatism in economic policy thinking and formulation.

3. These changes in circumstances and policy choices create a potentially unprecedented opportunity for accelerating growth to benefit the low-growth countries and reduce the disparities in performance. The Committee for Development Planning believes that this opportunity calls for an international development strategy for the 1990s which emphasizes accelerated economic growth through increased levels and efficiency of domestic investment with a special emphasis on human resource development and which encourages a more supportive international economic environment, both to preserve trading opportunities for small countries and to provide adequate debt relief for countries implementing policy reforms.

### B. A supportive international economic environment

4. World trade patterns underwent significant structural changes in the 1980s due both to technological factors and economic policies. Services trade increased; intra-industry trade reflecting the growing role of transnational corporations increased; developing countries exploited comparative advantages in many categories of manufacturing industries and diversified exports; and the importance of primary commodity trade declined, affecting African countries in particular. Policy shifts led to new regional trading developments in Europe and North America and the opening of China and the socialist world to world markets. These developments reflect both greater openness accelerating competition and increased protectionism in world markets that could marginalize some less developed countries.

5. There is even more reason therefore that the third world should be an active participant in further steps towards trade liberalization, particularly in the context of the Uruguay Round. Reduced restrictions on agricultural products, textiles and some service activities are of potentially great benefit to many third world countries. The industrialized countries have an inescapable responsibility to reduce these barriers and to manage the debt and macro-economic imbalances in the world economy to enhance growth and trade opportunities for developing countries.

6. Industrialized and developing countries share responsibility for both the origins of the debt crisis and its progressive resolution. To date, however, most of the costs of adjustment have been borne by the debtor countries and particularly by the lower-income groups in the debtor countries. Human resource development has been especially hard hit. Recent debt initiatives recognize that debt reduction needs to figure more prominently on the menu of options for negotiation between commercial banks and debtor countries. Debt reduction should aim, in particular, to release public sector resources for enhanced levels of public investment and policies to increase the efficiency of investment, including private sector entrepreneurship and capital formation. Particular priority should be given to human resource development.

### C. Elements of a development strategy

7. The key elements of an international development strategy for the 1990s are:

- (a) Accelerated economic growth;
- (b) Greater concern for human development;
- (c) An absolute reduction in the number of people suffering from severe poverty and deprivation;
- (d) Restraining the deterioration in the physical environment.

8. The need for faster growth is undeniable, not as an end in itself but as a means to increase the well-being of people throughout the world. A central policy objective must be to raise the rate of accumulation and efficiency of capital. In addition to a restructuring of output, this may require reforms of investment procedures within central government ministries, including improved criteria for investments in public sector enterprises, price reforms, making public sector enterprises more competitive by increasing their exposure to market forces, as well as the desirability of transferring such enterprises to the private sector. Reforming public finances through improved tax and expenditure policies and raising the efficiency of domestic capital markets are also necessary.

9. Developing countries must be free to choose their own policies to suit their own circumstances. In the 1970s and 1980s, however, many developing countries benefited from export-oriented policies featuring in some cases import liberalization and, more importantly, export promotion. A predictable trade-oriented exchange rate régime is the most important single element in successful trade policy, but other key steps, in rough order of difficulty, include:

- (a) Removal of redundant trade barriers;
- (b) Removal of administrative controls by relevant market-based policies;
- (c) Achievement of greater uniformity in incentive structures;
- (d) Uniform reductions in the levels of import duties and export subsidies.

10. People in the 1990s should be placed firmly in the centre of the development process. Investments in expanding the capabilities of people have the potential to

yield a return to society at least as high as the return on physical investment. This requires policies to ensure that human resource capabilities are fully employed. Three areas of human resource development may be considered strategic:

- (a) Education and training;
- (b) Health and nutrition;
- (c) Housing.

The recommended approach during the next 10 years is to emphasize these areas of human development which are akin to capital formation and to give lower priority to the purely social welfare aspects of expenditure programmes.

11. Women represent more than half the world's population yet in many countries lag behind men in school enrolment, nutrition and health, and life expectancy in age groups below 50 years. The young represent all the world's population for the future, yet 45 per cent of children under five years of age in developing countries (excluding China) are living in absolute poverty. These two groups deserve special attention in human resource development. Equality of opportunity for women is particularly necessary in all aspects of development.

12. Neither human resource development nor growth for its own sake is enough. The objective is to eliminate severe poverty and deprivation. Taking both rural and urban poverty into account, the number of people in the third world living in extreme poverty is estimated to have increased from 819 million in 1980 to 881 million in 1985. Most of this increase occurred in Africa.

13. To tackle poverty directly will require a fundamental change in attitude of policy makers, from regarding poverty alleviation as an act of charity to seeing it as an investment in the poor with a high rate of return. Such an attack is likely to include a combination of welfare services and entitlement programmes to place a safety net under the poor, policies giving priority to the production of goods consumed by low-income groups and to the construction of essential infrastructure to benefit the poor, public works to provide employment, and redistribution of income and assets in favour of the poor, notably land reform and credit programmes.

14. Although environmental deterioration is in general a consequence of affluence in industrialized countries and poverty in developing countries, there is broad agreement that attempts by men and women to improve their economic well-being have resulted occasionally in huge disasters and more frequently in gradual destruction of the resources on which material betterment depends. Some issues, such as the possible warming of the planet and the depletion of the ozone layer, threaten all countries. While environmental deterioration has not, in general, reached such a point that it will bring growth to a halt or even reduce growth markedly, if it continues, the danger is that it may be impossible to sustain the income of the poor.

15. Water resources offer an instructive illustration, elaborated on in some detail in chapter IV below. Some 80 countries, with 40 per cent of the world population - many among the poorest countries in the world - already suffer from serious water shortages. Water quality is also degraded by expansion of irrigation, increased use of fertilizers, insecticides and pesticides, discharge of industrial wastes and untreated sewage, waste and toxic chemical dumps and

atmospheric pollutants. Each year an estimated 12.4 million deaths occur from unsafe water and dirt-related diseases. Poor environmental sanitation is a critical link in the chain of diarrhoeal diseases that affect young children in developing countries and claim the majority of deaths in the under five years age group.

16. Three elements are essential in water resources policy:

- (a) Measures to increase usable supplies of water;
- (b) Policies to manage water demand, preferably through pricing mechanisms;
- (c) Measures to enhance the quality of existing water supplies and to prevent water pollution.

#### D. Targets and tasks for the future

17. The four elements of the strategy outlined in paragraph 7 above are not separate issues but strands of a coherent approach to development policy in the next decade. Faster growth is the foundation on which other policies to improve the well-being of mankind rest, but enlarging the capabilities of people and reducing the absolute number of people living in poverty, especially through human resource development and breaking the cycle of poverty and environmental deterioration, is the ultimate objective.

18. Working together, the four elements of the strategy can aspire to high goals for the year 2000: universal primary education, reduction of the infant mortality rate to no more than 50 per 1,000, or by 50 per cent in those countries where this rate has already been achieved, elimination of severe malnutrition in all countries, reduction of the absolute number of people living in poverty, reversal of the present trend, and establishment of priorities to restrain land degradation, deforestation and desertification, overcome water shortage and pollution, reduce deterioration of coastal areas, control atmospheric pollution and regulate hazardous wastes and toxic chemicals.

19. To meet these goals, international effort will be needed to reverse the net transfer of resources from poor to rich countries, to mobilize the support and co-ordination of the multiple United Nations organizations, and to establish more effective international accountability for national economic policies.

20. The next decade offers a rare opportunity to exploit a new political openness and economic pragmatism in the world community to accelerate growth with a focus on human resource development and environmental sustainability. All countries would gain, but the poor people of the third world would benefit the most.



## II. THE WORLD ECONOMY IN TRANSITION

### A. Developments in the world economy in the 1980s

#### 1. Growth performance

21. The growth of the world economy in the period 1981-1987 was disappointingly slow. Per capita income increased about 1.1 per cent a year, a little more than half the rate achieved in the 1970s and about a third of the rate achieved in the 1960s. Within the third world, there was increasing prosperity in China, much of South Asia and in the industrializing countries of East Asia. Elsewhere in the third world, however, incomes fell, sometimes sharply. The overall consequence of these two diverging tendencies was that average incomes in the developing countries as a whole, excluding China, actually fell by 1.0 per cent a year. In the industrial countries, capitalist and socialist, incomes continued to rise, albeit at a noticeably slower pace than in the previous two decades. Thus the economic distance between the developed and developing countries has widened considerably in recent years. (See table 1 for growth rates of various groups of countries.)

22. There was marked economic and social retrogression in three regions of the world in particular. Because of the sharp fall in oil prices and continuing conflict in the region, income per head declined 7.3 per cent a year in West Asia. In sub-Saharan Africa income fell 4.1 per cent a year and in the western hemisphere the fall was 1.6 per cent a year. Of course, within each of these three regions there was a diversity of experience, but between them they highlight the fact that declining living standards tended to be concentrated on primary producing countries (which suffered a sharp fall in their terms of trade), on a number of countries in sub-Saharan Africa (where misguided domestic policies were aggravated by the debt trap) and more generally on the least developed countries (where severe poverty makes sustained growth difficult even in the best of times).

23. Elsewhere in the third world, notably in South and East Asia, average incomes continued to rise although the rate of increase of gross domestic product was well below the 7 per cent target of the International Development Strategy (the Third United Nations Development Decade) (1980s). The newly industrialized countries of East Asia did especially well. They were able to adjust rapidly to external shocks, respond to changes in relative international prices, react quickly (as in the Republic of Korea) to the adverse effects of a steep rise in real interest rates and thus were able to sustain economic expansion.

24. Also impressive was the economic performance of the two giants of Asia, India and China. The development strategy followed by India continued to be rather inward-oriented. Indeed, its foreign trade sector relative to total output is less than half as large as China's. India, hence, was insulated from the effects of the collapse in primary commodity prices and, because of its prudent policies towards borrowing on international capital markets, it avoided the international debt crisis. China, beginning in the late 1970s, introduced a number of major economic reforms, particularly in the rural areas, and at the same time increased its exposure to world market forces. As a result of this reorientation of policy, the rate of growth of per capita income in China actually accelerated from previously high levels, despite the deceleration in the world economy as a whole, and averaged 7.8 per cent a year during the period 1981-1987.

Table 1.

Rates of growth of global output and income per capita, by  
region and major countries, 1981-1988

(Percentage)

|   | <u>Per capital gross domestic product</u> |      | <u>Per capita</u>      |
|---|---|------|------------------------|
|   | 1981-1987                                 | 1988 | income a/<br>1981-1987 |
| World                                       | 1.1                                       | 2.7  | 1.1                    |
| Developed market economies                  | 2.0                                       | 3.5  | 2.4                    |
| United States                               | 1.7                                       | 3.0  | 1.7                    |
| Japan                                       | 3.2                                       | 5.1  | 4.2                    |
| Western Europe                              | 1.7                                       | 3.4  | 2.0                    |
| USSR and Eastern Europe b/                  | 2.5                                       | 3.2  | ..                     |
| Developing countries c/                     | 1.0                                       | 1.0  | 0.6                    |
| Africa                                      | -3.1                                      | -0.7 | -3.9                   |
| North Africa                                | 1.0                                       | -0.8 | 0.2                    |
| Egypt                                       | 0.6                                       | 1.6  | -1.4                   |
| Sub-Saharan Africa                          | -3.6                                      | -0.7 | -4.1                   |
| Nigeria                                     | -6.3                                      | 0.3  | -6.0                   |
| South Asia                                  | 2.1                                       | 5.1  | 2.0                    |
| Bangladesh                                  | -1.6                                      | -0.7 | 1.5                    |
| India                                       | 2.7                                       | 7.3  | 2.7                    |
| Pakistan                                    | 3.5                                       | 2.5  | 2.7                    |
| South-east Asia c/                          | 6.4                                       | 6.5  | 6.3                    |
| China                                       | 8.8                                       | 10.2 | 7.8                    |
| Indonesia                                   | 2.1                                       | 2.2  | 2.4                    |
| Three newly industrializing<br>economies d/ | 6.5                                       | 8.4  | 7.4                    |
| West Asia                                   | -5.5                                      | -1.8 | -7.3                   |
| Saudi Arabia                                | -7.5                                      | -1.7 | -11.0                  |
| Mediterranean                               | 1.6                                       | 2.0  | 1.5                    |
| Western hemisphere                          | -1.0                                      | -1.5 | -1.6                   |
| Argentina                                   | -1.9                                      | -0.6 | -2.7                   |
| Brazil                                      | 1.1                                       | -1.8 | 1.4                    |
| Mexico                                      | -1.1                                      | -1.5 | -2.1                   |
| Venezuela                                   | -2.5                                      | 0.7  | -4.6                   |

(Source and footnotes on following page)

(Source and footnotes to table 1)

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Source: Department of International Economic and Social Affairs of the United Nations Secretariat, based on national and international data, and World Bank, World Tables, 1988 (Washington, D.C., 1989).

a/ Per capita GDP adjusted for changes in the terms of trade and net factor payments.

b/ Net material product.

c/ Including China.

d/ Hong Kong, Republic of Korea and Singapore.

25. These differences in relative growth performance illustrate a significant fact - namely, the accentuated differentiation that has occurred during this decade within the developing world itself. At one extreme, China and the newly industrializing countries of East Asia have continued to prosper, while at the other extreme, the least developed countries of sub-Saharan Africa have become further impoverished. Every country, of course, is different and faces a distinct and possibly unique set of opportunities and obstacles to growth, and hence it is not easy to draw lessons from the experience of a single decade. It does appear, however, that the most successful countries were those that:

(a) Gave high priority to human development, including the creation of a well-trained and educated labour force;

(b) Maintained a high rate of investment;

(c) Financed that investment largely through domestic savings, without relying on foreign capital to provide the fuel for expansion;

(d) Pursued trade policies that did not discriminate against exports.

High rates of investment in human and physical capital have two advantages. First, they increase the flexibility of an economy and make it easier to adjust to unpleasant and unexpected shocks and to exploit unanticipated opportunities. Secondly, they increase the growth potential of an economy and raise its average productivity. These two things in combination ensure that trend rates of growth of output are high and departures from trend are modest and short-lived.

26. It must be said that the problem of slow growth is not confined to the developing countries. Average growth rates have fallen in the industrialized countries too. In the socialist countries of Eastern Europe and the USSR, net material product per head is reported to have increased by 2.5 per cent or less a year during 1981-1988, compared to over 4 per cent in the 1970s. Growth in the developed market economies also slowed down: GDP per capita increased only 2.1 per cent a year during the period 1981-1988, as compared to 2.3 per cent a year in the 1970s. The growth rates in Western Europe, previously substantially higher than in the United States of America, were very low in the first half of the 1980s, although they recovered in the second half of the decade, as indeed they did throughout the world. Japan was unusual among the advanced capitalist countries in adapting quickly to external disturbances while sustaining a high average rate of growth.

27. Thus the 1980s have been characterized by:

(a) A slowing down of the rate of growth of the world economy, with negative rates of growth of per capita income in Africa and Latin America;

(b) Increased economic disparities between rich countries and poor;

(c) Greater differentiation in average standards of living within the third world;

(d) Uneven development, or the presence simultaneously within the third world of processes of development and underdevelopment;

(e) Declines in the terms of trade of producers of oil and primary products;

(f) A high degree of volatility of exchange rate and great uncertainty about markets.

These patterns of global change were accompanied and partly caused by macro-economic imbalances in the world economy. Most conspicuous at the end of the decade are:

(a) The large trade surpluses of Japan and the Federal Republic of Germany and the equally large offsetting trade deficit of the United States;

(b) The transformation of the United States from the leading creditor country to a large borrower of foreign capital;

(c) Massive foreign indebtedness of many third world countries, primarily in Latin America and Africa;

(d) Unprecedentedly high real rates of interest charged on foreign loans;

(e) Recognition that full repayment of those debts is impossible;

(f) A perverse flow of finance across the international exchanges and a net transfer of resources from poor debtor countries to rich creditor ones.

As a consequence of (c) and (d), a serious debt crisis emerged in 1982 which persists to this day; (f) is the result of attempts by third world debtor countries to cope with the crisis and service their debts. While the macro-economic imbalances listed above constitute major obstacles to a resumption of more rapid growth in the world economy and to a more even pattern of development, positive changes also have occurred and these give grounds for hope for the future. Furthermore, these positive changes can and should be reinforced by policy initiatives at the national and international levels to remove barriers to expansion, to increase the flexibility of the economy and the speed of response to changing signals and to exploit opportunities for constructive change.

## 2. The short-term outlook 1/

28. The world economy faces a moderate slowdown in 1989 primarily due to cyclical factors. The expected reduction in world trade growth and demand for primary commodities will reduce the rate of growth of export earnings of most developing countries, and efforts to combat inflation are expected to cause real interest rates to rise, further aggravating the situation of the heavily indebted developing countries. There is considerable uncertainty regarding the severity of the slowdown, with some risk that excessively restrictive monetary policy could lead to a recession in 1990.

29. Growth in world GDP is expected to slow to an average rate of slightly less than 3 per cent in 1989 and 1990, compared to 3.8 per cent in 1988. Significant variation in GDP growth rates is expected among world regions and within them. Developing countries (excluding China) are expected to exhibit higher GDP growth rates (4.9 per cent) than the developed market economies (2.9 per cent) over the forecast period. In per capita terms, the growth rates in the developing countries

in all regions except Asia would be lower than in the developed market economy countries. For Eastern Europe and the USSR, relatively slow growth (2.3 per cent on average) is expected.

30. With slower output growth in 1989 than in 1988, no significant further drop in the unemployment rate is expected. The average unemployment rate of developed countries, which exhibited a modest reduction in 1988, is expected to remain at slightly more than 7 per cent through 1992, with significant differences among individual countries.

31. Due to the negative effects of higher interest rates and poorer export prospects consequent upon a slowdown in the growth of demand in the developed countries, GDP growth in developing countries is expected to fall from 4.8 per cent in 1988 to 4.2 per cent in 1989. Some recovery is expected in 1990, reflecting mainly improvements in the western hemisphere and oil-exporting developing countries. Significant variation in GDP growth is, however, expected to continue among individual developing countries and regions in both absolute and per capita terms. Despite the decline in growth rate to 8.2 per cent in 1989 from 9.7 per cent in 1988, Asia as a whole is expected to grow twice as fast as other developing regions. The short-term outlook for the western hemisphere, where zero GDP growth is expected in 1989 for the second year in a row, is poor. In per capita terms, regional differences are even more striking. Asia is the only region with significant positive growth of 6 to 7 per cent in the near term. Other regions show either negative growth or virtual stagnation in 1989.

### 3. Probable evolution of growth performance in the 1990s under unchanged policies

32. The conjunctural and structural changes that have been identified will help to ensure that average growth rates in the 1990s are higher than in the 1980s. Since they could hardly be much lower, this in itself is not a great achievement. Assuming unchanged governmental policies, various projections of United Nations bodies indicate that world gross domestic product would rise between 3.1 and 3.3 per cent a year during the period 1991-2000, with a corresponding increase in per capita GDP of between 1.5 and 1.7 per cent a year.

33. Constancy or a slight acceleration in per capita growth is projected for the developed market economies, the range being between 2.0 per cent a year (projected by the United Nations Conference on Trade and Development (UNCTAD)) and 2.4 (World Bank). A sharper acceleration is projected for the USSR and Eastern Europe, the range being between 3.2 per cent a year (Department of International Economic and Social Affairs and UNCTAD) and 3.3 per cent (Economic Commission for Europe (ECE)).

34. China is projected to continue to grow rapidly: the Department of International Economic and Social Affairs projecting a 5.5 per cent annual rate of growth per capita. What is less satisfactory are the projected growth rates for the developing countries excluding China. UNCTAD anticipates a growth of income per head in the developing world of only 1.3 per cent a year, largely because it is very pessimistic about possibilities in Africa.

35. The Department is somewhat more hopeful, projecting a growth of per capita output for the developing world as a whole of 2.0 per cent a year. Within the developing world, however, it envisages zero growth per head in sub-Saharan Africa

and only modest growth in Latin America, West Asia and the Mediterranean region. Growth is projected to be relatively high in South and East Asia and in North Africa - namely, 2.4 per cent per capita per year. (The projections are summarized in table 2.)

36. In no region of the world apart from China is total output projected to rise as much as 5 per cent a year, and in no region of the world apart from China and the USSR and Eastern Europe is output per head projected to rise as much as 2.5 per cent a year. The achievements of the 1960s and 1970s indicate that it is possible to do much better than this, and the retrogression in the 1980s in Africa, Latin America and West Asia tell us that we must do better. The projected growth rates cannot be acceptable to informed world opinion.

37. Moreover, the projected growth rates make no provision for any shocks that might beset the world economy, as happened in the 1970s with the two oil crises and in the 1980s with the debt crisis.

38. These considerations suggest that in the international development strategy for the 1990s one should aim for higher rates of growth than those currently projected.

Table 2.

Projected rates of growth of per capita GDP, 1991-2000

(Percentage per annum)

|                            | DIESA         | ECE           | UNCTAD        | World Bank    |
|----------------------------|---------------|---------------|---------------|---------------|
| World                      | 1.8           | 1.6           | 1.5           | 1.7           |
| Developed market economies | 2.0           | 2.2           | 2.0           | 2.4           |
| USSR and Eastern Europe    | 3.2           | 3.3           | 3.2           | -             |
| Developing countries       | 2.0 <u>a/</u> | 1.5 <u>b/</u> | 1.3 <u>a/</u> | 2.8 <u>b/</u> |
| North Africa               | 2.4           | -             | -             | -             |
| Sub-Saharan Africa         | 0.0           | -             | -             | 0.3           |
| Latin America              | 1.0           | -             | 1.6           | 2.2           |
| West Asia                  | 1.3           | -             | 1.5           | -             |
| South and East Asia        | 2.4           | -             | -             | -             |
| Mediterranean              | 1.4           | -             | -             | -             |
| China                      | 5.5           | -             | 5.1           | -             |

Source: ACC Task Force on Long-Term Development Objectives, "Monitoring development progress during the decade of the 1990s: economic and social indicators in a new strategy for development", preliminary draft, February 1989, table 2, p. 10; "Development and international economic co-operation: long-term trends in social and economic development (A/43/554), 20 September 1988, table 10, p. 38.

Note:

DIESA Department of International Economic and Social Affairs

ECE Economic Commission for Europe

UNCTAD United Nations Conference on Trade and Development

a/ Excluding China.

b/ Including China.



4. Structural changes in the 1980s and their implications for the future of the world economy

(a) Adjustment to the world recession of the early 1980s and changes in the relationship between capital, labour and raw material suppliers

39. The recession of the early 1980s resulted in widespread bankruptcy and high unemployment. The marginal firms often went out of business. Those firms that survived, however, now enjoy lower costs and increased efficiency. They are "leaner and meaner". Moreover, the recession also had profound effects in the labour market. High unemployment weakened the trade union movement and tilted the balance of power in favour of capital. Wage demands under collective bargaining were moderated and real wages sometimes were cut. Outside the unionized industries, high unemployment increased competition in the labour market and once again, the pressure to raise nominal wages was reduced, and real wages (and unit labour costs) rose less rapidly than previously. Discipline in the labour market, as seen by management, increased in the 1980s for another reason: the high international mobility of capital by transnational corporations meant that it was possible for management to change (or threaten to change) the location of manufacturing activity to low-wage countries if demands for higher wages in the home country were pushed too hard.

40. The easing of pressure in the labour market has been accompanied by a fall in the real price of oil and by lower energy costs in general. This is of course a consequence of the slackening of energy demand in the world market, itself a consequence of the world recession. Moreover, it is not just oil prices that have fallen. The prices of many (but not all) internationally traded raw materials are lower today than they were 10 or 15 years ago, to the great disadvantage of primary-commodity-exporting countries, which have seen their terms of trade deteriorate sharply.

41. The effect of lower or more slowly rising unit labour costs, lower energy costs and lower prices of raw materials has been to increase profit margins in manufacturing enterprises, especially in those countries (Japan and the East Asian developing countries) that did not allow their exchange rate to become overvalued (as happened in the United States of America, Latin America and Africa). High profit margins create a potential, on the supply side, for higher investment and faster growth of industry in the 1990s. This potential sometimes is matched, on the demand side, by a backlog of investment needs in the public sector, notably a potential demand for public-sector investment in physical infrastructure, urban renewal and public services such as schools and hospitals. In many developing countries, a better understanding of the difficult economic realities has also led in the 1980s to a more pragmatic approach to policy formulation. For some, this has produced greater openness of their economies, a creative emphasis on market forces and a more rapid pace of technical change. Thus recession and slow growth set in motion a number of economic forces, which potentially can lead to higher levels of activity and faster growth in the future.

(b) Structural change: towards a single international economy

42. During the past decade significant structural changes have occurred in the pattern of world trade. Globally, the importance of service exports has increased, intra-industry trade has increased faster than total trade, and the proportion of international trade involving transnational corporations has also increased.

Comparative advantage in the production of many categories of manufacturing industries has shifted in favour of developing countries. This shift has been due to changes in technology and in the industrial policies of the developing countries themselves as well as to factor endowments and the functioning of markets. This has led to a marked increase in export diversification for many developing countries and in some cases higher rates of GDP growth.

43. During the same period, the net barter terms of trade of primary commodities has exhibited large fluctuations around a declining trend. Net capital flows to developing countries, particularly those mediated by markets, have been highly volatile and have now fallen to the point where they are exceeded by the outflow of interest payments, resulting in a substantial negative net transfer of resources for a large number of developing countries.

44. The manner in which developing countries participate in the world economy determines the extent to which their import capacity has been affected by changes in the terms of trade, in the extent and type of protectionism, and in the volume and terms of financial flows. However, in many countries, trends in export volumes and export diversification have been due mainly to the types of policies implemented by the developing countries themselves. Similarly, their growth prospects for the 1990s will be determined not only by the extent to which the international economic environment is supportive but also by the adequacy of domestic policies which must be such as to encourage high rates of domestic savings and investment and a more efficient allocation of resources.

45. The international economic climate, particularly the functioning of the trading and financial systems, needs to be made more supportive of the development process. There are major systemic problems and emerging risks that must be addressed as a matter of urgency if this is to be achieved. There are nevertheless grounds for hope that the full potential for global growth and development may be more effectively realized in the 1990s than was the case in the 1980s.

46. Maintenance of a buoyant world economy supportive of the development process cannot be safely assumed. The most obvious of the major problems threatening the economic growth of developing countries in the 1990s is the debt problem and the associated reduction of total net resource flows to developing countries, particularly in Latin America and in Africa, where there has been stagnation or reduction in income per capita. Adverse trends in commodity terms of trade and export volumes have also inhibited growth, especially in Africa. The cost in terms of human suffering has been high, while investment both in human resource development and in plant and equipment has fallen relative to GDP, undermining growth prospects for the 1990s in the affected countries.

47. Efforts to deal with the major imbalances in the external accounts of developed market economy countries and preoccupation with the build-up of inflationary pressures constitute another threat to the world economy. They may yet trigger a recession in the closing years of the present decade or the first year of the next. The persistence of these large imbalances have also been a cause of volatile exchange rates and rapid changes in the pattern of short-term capital movements in international financial markets.

48. Despite the resolution of mid-term disagreements in April, a positive outcome of the Uruguay Round is by no means assured. Failure could mean a continued retreat from multilateralism in the trading system and progressive reductions in

the percentage of world trade fully complying with the principles of the General Agreement on Tariffs and Trade (GATT).

49. Moreover, the structural changes leading towards a unified world market can be perverted. Two dangers must be guarded against. First is the danger that the world will divide into a number of hostile trading blocs that would erect high protectionist barriers against imports from non-member countries. One can imagine a trading bloc centred on Western Europe, another on North America and perhaps a third in Asia centred on Japan. Structural change in this case would represent a turning away from liberalism and a unified world market towards protectionism and trade warfare.

50. A second danger is that the structural changes that are likely to occur will, in effect, marginalize some less developed countries, leave them to one side and deprive them of an opportunity to participate fully in the advantages of international trade. This could occur, for example, if political energies directed towards closer economic integration in Europe resulted in neglect of trading issues affecting the developing countries. It could also occur if preoccupation with the task of integrating the socialist countries into the world trading system led to the neglect of the interests of the third world, or of some countries in the third world. This is not of course an inevitable consequence of incorporating the socialist countries into the world economy, or even a likely consequence, but it is a point that needs watching.

51. World food stocks have fallen to perilously low levels and will need to be replenished if international food security is to be maintained. To this list of problems in the areas of finance, trade, and macro-economic balance must be added the emergence of significant evidence of environmental degradation. The resource implications of addressing problems in this area are not as yet well understood; but there could easily be difficulties in reconciling the levels of investments required for environmental purposes with those required to accelerate the pace of development in developing countries.

52. On the other hand, there are some major grounds for hope. Perhaps foremost is the recent improvement in relations between NATO and Warsaw Pact countries, leading to significant breakthroughs in arms control and to a general reduction in tension as well as the resolution of a large number of regional disputes. Achievements such as these in the political sphere may have the effect of raising development concerns on the agenda of international debate and facilitating greater international co-operation. Another source of optimism is simply the fact that the international system of economic co-operation survived the major shocks of the 1970s as well as it did. Indeed, the system has improved in one significant respect - namely, the increased recognition of global interdependence and the need for co-operation in macro-economic management in industrial countries. Furthermore, many observers believe that the previous trend towards increasing protectionism has been slowed since the inauguration of the Uruguay Round under the auspices of GATT. Finally, debt reduction as part of the solution to the problems of the heavily indebted developing countries is no longer taboo among policy makers.

53. In many countries - developing and developed - a better understanding of the difficult economic realities has led in the 1980s to a more pragmatic approach to policy formulation. For some, this has produced greater openness of their economies, a creative emphasis on market forces and a more rapid pace of technical change.

54. The opportunities offered by the evolving international trading and financial system, on the one hand, and the constraints imposed by the system, on the other, pose challenges to policy makers in developing countries. Their response will largely determine the extent to which such opportunities as exist will be translated into improved economic performance.

B. Evolution of the international trading system

1. Recent trends in international trade and their significance for the future evolution of the trading system

55. The future evolution of the international trading system will be shaped by the interaction of trade policy decisions by Governments, technological changes and market forces. The Uruguay Round of GATT negotiations scheduled to end in 1990 will largely determine the framework of the international trading system for the next decade. The decision by the European Economic Community to establish a completely unified internal market by 1992 and the coming into force of the Free Trade Agreement between the United States and Canada will also significantly alter patterns of trade. Indeed, there is some concern that the practical effect of these major agreements may undermine the results of the Uruguay Round. The increased openness of China and the centrally planned economies of Eastern Europe may open new markets for developing country exports. But it is also likely to intensify competition in the major export markets of developing countries because of the similarity of many of the products which these countries can be expected to export.

56. In their agreement to establish a generalized system of trade preferences, developing countries have taken an important step towards increasing trade among themselves. But these and other regional arrangements under negotiation are unlikely to have a major impact on the overall export prospects of developing countries.

57. Besides the trade policies of Governments, the evolving role of transnational corporations will also affect the pattern of international trade. Survey data for the latter half of the 1970s and early 1980s indicate that home-based transnational corporations accounted for about 80 per cent and 50 per cent of exports from the United States and the United Kingdom of Great Britain and Northern Ireland, respectively. In the United Kingdom, transnational corporations from other countries accounted for an additional 30 per cent of United Kingdom exports. Home-based transnational corporations also accounted for about 50 per cent of United States imports. Transnational corporations from other countries account for a significant part of the remaining United States exports and imports. Thus, nearly all exports in the United States, the greater part of United Kingdom exports and imports of both countries are accounted for by the activities of transnational corporations. A large portion of their trade is between non-affiliated firms of transnational corporations, but intra-firm trade of transnational corporations accounts for about 30 per cent of exports in the United States, United Kingdom and Japan and between 30 and 40 per cent of imports in Japan and the United States. 2/ These findings would seem to imply that access to markets in these countries by exporters in developing countries would normally involve the mediation of transnational corporations. This may be convenient since an established transnational corporation already has well-established marketing channels. On the other hand, if a transnational corporation has already set up a foreign affiliate

to supply the product in question, gaining a foothold in the market may be difficult for an independent producer. The growing dominance of transnational corporations and the restrictive business practices of some of them have also been important factors in preventing an optimal allocation of resources. At the same time it must be recognized that in recent years a number of transnational corporations have become based in developing countries, and hence it is no longer the case that developed countries are the only base for transnational corporations.

58. The world market for manufactured exports has been fairly buoyant during the past two decades, with growth in the range of 4-5 per cent. From 1970-1985 apparent consumption of manufactured goods in the developed market economy countries grew by 1.7 per cent per year. At the same time imports grew more than twice as fast, as apparent consumption and developing countries' shares in this expanding market also increased.

59. These average trends mask considerable diversity. Apparent consumption of manufactures in Japan, for example, increased at a rate of 3.1 per cent per annum whereas in the seven largest EEC countries, the corresponding growth rate was only 0.9 per cent. Among product categories within manufactures, growth rates in apparent consumption higher than or close to the average were confined to paper and paper products, chemicals, machinery and transport equipment. Apparent consumption of processed food, wood products, non-metallic mineral products and base metals grew by 1 per cent per annum or less, and apparent consumption of clothing and textiles declined.

60. Growth rates of the volume of manufactured exports to the developed market economy countries from the developing countries were more than twice as high as those from other developed market economies. And among the developing countries, the highest growth rate (10.6 per cent per annum) was registered by the newly industrialized economies of East Asia, followed by other ASEAN countries (8.8 per cent), southern European countries (4.9 per cent) and Latin American countries (3.3 per cent). 3/

61. World trade in manufactures is expected to exhibit growth of between 4 and 4.5 per cent over the period 1988-2000. Since developing countries apparently accounted for only 13.6 per cent of this trade in 1985, there is still a great deal of scope for rapid growth in their manufactured exports. However, these prospects depend greatly upon the strength of protectionism in the developed market economy countries. Trends in this respect through 1986 were not encouraging. And the new United States trade law appears to be inconsistent with the principles of "standstill and rollback", reaffirmed at the inauguration of the Uruguay Round.

62. The success of some developing countries in increasing their market shares in the exports of manufactures to the markets of the developed market economies has, unfortunately, been accompanied by the increasing use of non-tariff measures. By 1986, the percentage of imports from developing countries covered by non-tariff measures was 55 per cent for iron and steel, 13 per cent for chemicals, and 31 per cent for manufactures. Within the last category, non-tariff measures affect 61 per cent of textiles and 78 per cent of clothing imports. Moreover, the import coverage of such measures tended to increase during the period 1981-1986, notwithstanding public pledges of a standstill on protectionist measures. 4/ Worse still, they increased in the first two years of the Uruguay Round, despite an international commitment to the contrary. While some developing countries can expand exports of manufactures by seeking out product lines not affected by

non-tariff measures, protectionist tendencies remain a constant threat to their export prospects.

63. The strength of protectionist pressures arises from several factors. The most important, perhaps, is that many regions within countries depend upon a narrow range of industries. When the impact on regional economies of successful import penetration is large enough to cause unemployment to rise and industrial profits to shrink, with consequent erosion of the tax base, the pressure on parliamentary or congressional representatives is acute. Coalitions of politicians, each having an interest in protecting a particular industry, have proven highly effective in securing relief, even though the regional benefits are usually less than the costs to the public at large.

64. Trends in markets for primary commodities have been discouraging for countries heavily dependent on their export. Growth in the volume of world trade in non-fuel primary commodities averaged 3.4 per cent per annum from 1970-1986 and was only 2.9 per cent during the subperiod 1980-1986. <sup>5/</sup> Recent studies suggest that growth from 1988-2000 will remain less than 4 per cent per annum even if GDP growth in the industrial countries averages 3 per cent per annum. Growth in exports of fuels are expected to be about the same as GDP growth in the industrial countries.

65. For most primary commodity exports of developing countries, prospects are worse than the overall averages suggest. This is because the grain trade dominates the aggregate figures. Growth in export volumes of wheat, rice and coarse grains are expected to be in the range of 4-5 per cent per annum. For natural rubber, palm oil, soybean products, and citrus, world demand is expected to grow at an annual rate of 2.5-3 per cent. For other food and agricultural raw materials and for ferrous and non-ferrous minerals, however, growth in world demand is expected to be only between 1 and 2 per cent per annum.

66. The upturn in real commodity prices in 1987-1988 is expected to have been reversed by 1990. During the 1990s, prices of most primary commodities adjusted for inflation are expected to remain roughly at their recent lower levels. Only in the cases of grains, palm oil, soy beans, beef and veal, are real prices expected to exhibit significant strengthening during the next decade.

67. These unpromising prospects for primary commodities are the result of the tendency of the pattern of final demand to become less material-intensive and of the effect of substitutes on the derived demand for many industrial raw materials. To be sure, some developing countries may be able to export a rapidly growing volume of those few primary commodities likely to experience relatively strong demand and others may be able to increase their market shares. For developing countries as a group, however, it is likely that growth in the volume of their non-oil primary commodity exports will fall in the range of 2.5-3 per cent, rather than the optimistic figure of 4 per cent referred to in paragraph 64 above. <sup>6/</sup>

68. Those major oil exporters with excess capacity may be able to increase their oil exports at about 3 per cent per year. This is based on the combination of the trend of world demand for oil products to grow at about 2 per cent in real terms, and the prospect of declining production among developed market economy countries and a number of other non-OPEC members. <sup>7/</sup>

69. Thus the ability of developing countries to achieve rapid growth in their export volumes will depend on their continued diversification into manufactured

products and adequate access to the markets of their principal trading partners, the developed market economy countries. This would seem to require significant reductions in the degree of protection currently afforded to manufactured products in which developing countries have been acquiring a comparative advantage.

## 2. Progress in the Uruguay Round of GATT negotiations

70. At the mid-term review conducted at Montreal in December 1988 considerable progress was made in the areas of services, tropical products and the functioning of the GATT system. However, major differences in the areas of agricultural products, textiles, intellectual property rights, and safeguards threatened to jeopardize a successful conclusion to the Uruguay Round altogether. Fortunately, the series of negotiations leading to the ministerial meeting of GATT members in April 1989 resulted in sufficient progress on the contentious issue of agricultural trade to permit the negotiating process to continue. The United States and EEC committed themselves to negotiating long-term reductions in both export supports and domestic subsidies, while agreeing not to increase the level of farm supports for 18 months.

71. The mid-term review underscored the importance to developing countries of adopting a vigorous negotiating stance. On agricultural issues, for example, the "Cairn group" of 13 independent agricultural exporting countries which includes several Latin American countries pressed both the United States and EEC to agree to meaningful reductions in export subsidies. Developing countries also have a stake in the outcome because of the importance attached by developed market economy countries to placing intellectual property rights under the GATT discipline. This would mean the linkage of compliance with respect to intellectual property rights to market access for goods and would require concessions by developing countries. Objections by many developing countries to the explicit linkage of these two strands of the negotiation led to the two-track approach, but linkage is still evident, since an agreement will only be reached on a total package. The ability of developing countries to negotiate on the basis of reciprocal concessions could lead to more favourable conditions of market access than in the past, when developing countries sought primarily to achieve non-reciprocal concessions from the developed market economy countries. This approach must be weighed against the possibility that the principle of special and differential treatment for developing countries embodied in part IV of GATT might be seriously eroded. 8/

72. Among the issues to be resolved in some of the major areas are the following: agriculture - whether EEC will agree to a time-bound commitment to at least partial liberalization; textiles - whether developed market economy countries will agree to a time-bound commitment to return to GATT rules of bound tariffs, elimination of non-tariff restrictions, and most-favoured-nation treatment; safeguards - whether coverage is to be selective or universal and what is to be the role of multilateral surveillance; intellectual property rights - whether negotiations will be confined to trade-related aspects or be of broader applicability.

73. One of the principal negotiating issues in the Uruguay Round is that of liberalization of agricultural trade, especially in the countries that are members of the Organisation for Economic Co-operation and Development (OECD). Should these efforts succeed, a large number of developing countries producing sugar and those producing cereals, livestock, dairy products, and other temperate-zone products stand to benefit. However, food-importing countries would lose through the removal

of export subsidies. 9/ Many of these would be least developed and other poor countries in sub-Saharan Africa for whom transitional compensation should be provided. This additional aid should be used for agricultural development, where economically feasible, and for developing other export industries to restore a sustainable balance of trade.

74. Restoring the thrust of the evolution of the international trading system towards greater comprehensiveness, further liberalization, and more consistent application of most-favoured-nation principles will broaden the scope for policy choice in developing countries.

### 3. Main policy thrust of the international community in the area of trade

75. With a view to improving the prospects of world trade, the main policy thrusts of the international community should be as follows:

(a) Strengthen the efficiency of the system of international economic co-operation in pursuit of predictability, transparency and non-discrimination in national policies as they relate to the rest of the world. Improving the multilateral system is the only antidote to the present tendency towards bilateral and regional arrangements which may be trade-diverting;

(b) Strengthen the ability of the international trading system to foster more efficient utilization of resources by enhancing competition and via other means;

(c) Accommodate a larger number of countries in the international trading system, including - in particular - the socialist economies, as soon as possible;

(d) Assist the developing countries to strengthen their competitiveness and encourage them to continue their active participation in the current Uruguay Round of GATT negotiations. Multilateral negotiations increase the leverage of smaller countries. The agenda of the negotiations is such that there is scope for an exchange of concessions between developed market economy countries and developing countries;

(e) Recognize the interdependence of the trade and financial sectors. Systems of export credit finance can affect the international competitiveness of countries in a number of product categories. The level of debt which countries can service while maintaining a necessary minimum level of import-capacity depends critically on their prospective export earnings;

(f) More specifically, the industrialized countries have a responsibility to reduce tariff and non-tariff barriers to trade and, particularly, to ensure third world access to markets in developed countries. Indeed, the GATT rules now cover only about 60 per cent of international trade in goods and services or - put another way - only 7 per cent of world economic activity, and there is therefore much potential for further liberalization. The forthcoming Uruguay Round has already been mentioned. Discriminatory protectionist restrictions against exports from developing countries merit special attention in future negotiations. The unfavourable treatment of textile exports from developing countries illustrates a more general tendency. The current arrangements had their origin in 1962 when the only restrictions - supposedly only temporary - were those on exports of cotton



textiles; all restrictions were to be removed after five years. In fact, the arrangements have been repeatedly renewed, have been expanded steadily to include additional textiles and have become progressively more restrictive. One of the aims of international trade policy in the 1990s should be to reverse these tendencies. There may even be a case for discriminating in favour of trade from the least developed countries; certainly there is no case for discriminating against them;

(g) Lastly, there is the issue of macro-economic adjustment among the developed countries. The key here is the elimination of the massive United States trade deficit and the absorption by the United States of a significant portion of the rest of the world's savings. One possibility would be to aim for the simultaneous reduction in the trade deficit of the United States and the trade surpluses of Japan and the Federal Republic of Germany, which together are about as large as the United States deficit. An alternative would be to reduce the United States deficit while allowing Japan and the Federal Republic of Germany to continue to run large trade surpluses. The savings of Japan and the Federal Republic of Germany, currently used to finance the United States deficit, would then become available to finance investment and growth in the third world. The danger is that neither option may be adopted and hence global macro-economic adjustment may be postponed indefinitely. Moreover, even if policies designed to bring about adjustment are adopted by some countries, there is no guarantee that all other important countries will adopt policies of their own that are compatible or consistent with global adjustment. The international economy lacks effective co-ordinating machinery and, in particular, there is no mechanism for harmonizing fiscal policies within - say - the Group of Seven. This is something that perhaps deserves careful consideration.

76. While not in itself sufficient, a healthy, orderly and growing global economy is necessary if developing countries are to achieve satisfactory rates of economic growth. The external conditions for facilitating growth in the developing countries include appropriate macro-economic, trade and other policies in the developed market economy countries as well as effective global economic institutions for ensuring the proper functioning of the international systems of trade and finance.

### C. External debt, finance and global macro-economic management

#### 1. External debt: unfinished business

77. The negative impact of unsustainable external debt-servicing obligations is currently hampering growth in about half of the developing countries. The origins of the problem are well understood. They include policy failures in both debtor and creditor countries, the impact of large external shocks - such as high interest rates in international markets in the 1980s and deteriorating terms of trade for many developing countries - and the availability of oil-exporting countries' surpluses for recycling. Policy failures in debtor countries included poorly managed fiscal systems and inadequate and inefficient investment programmes. Failure in the United States to generate adequate levels of savings relative to investment contributed significantly to high real interest rates in international capital markets in the 1980s. The developed countries as a group also failed to mobilize sufficient international finance through official sources to offset the retreat of commercial banks from lending to heavily indebted countries after 1982. 10/

78. The nature of the debt problems differs between low-income developing countries, mainly in Africa, and middle-income developing countries, mainly in Latin America. (Heavily indebted Eastern European countries share a number of characteristics with the middle-income developing countries.) In general, the debts of the low-income countries are owed mainly to the official sector in creditor countries and to the international lending institutions. At the same time, their levels of development precludes a rapid, sustained expansion of exports since most are dependent upon a narrow range of primary commodity exports. The middle-income countries, on the other hand, owe the bulk of their debt to commercial banks. They have more diversified economies and greater possibilities for increasing their exports than do the low-income countries.

79. It should not be overlooked that a large number of countries have avoided debt-servicing difficulties. Some of them were highly successful in expanding exports and maintaining low rates of inflation by restraining growth in domestic absorption. Although most of these same countries financed a higher share of investment from domestic savings than did most countries that borrowed heavily, some heavy borrowers avoided debt-servicing difficulties by expanding exports (Republic of Korea, Thailand, Colombia). Other countries which have so far escaped debt-servicing difficulties were large countries (China, India) that maintained prudent borrowing policies, and some oil exporters that, during much of the period of high international interest rates, enjoyed highly favourable terms of trade.

80. The burden of solving the debt crisis has thus far been disproportionately borne by the debtor countries and within the debtor countries, particularly by the lower-income groups. Neither the lending institutions nor the Governments of the creditor countries have assumed sufficient responsibility for the financial imbalances caused by excessive lending at high real rates of interest at a time of slower growth in the volume of world trade.

81. The response of the international community to the emergence of serious and widespread debt-servicing difficulties beginning in 1982, while successful in protecting the international financial system from serious disruption, has proven to be insufficient for the purpose of restoring moderate growth - or often even maintaining positive growth - in the heavily indebted developing countries.

82. In the initial phase, the international approach to debt problems involved three steps. The debtor country would agree to an economic adjustment programme endorsed and supported by the international community. Using its good offices, the International Monetary Fund (IMF) would assist the debtor country in negotiating with commercial banks a partial rescheduling of principal payments falling due during a 1-2 year period coinciding with the adjustment programme, combined with new loans to assist the debtor in making its interest payments. Finally, official bilateral creditors would reschedule, on a cost-of-funds basis, a portion of debt-service payments in the Paris Club, on a pari passu basis with commercial banks and other official creditors. This meant that, typically, a portion of scheduled interest payments would be capitalized in lieu of new loans.

83. The principal drawbacks to this approach were twofold. Debt continued to accumulate, with debt on commercial terms increasing its weight in the total. Yet new loans were insufficient to offset debt-service payments after rescheduling, resulting in a negative net transfer of resources and inadequate import capacity to sustain growth-oriented adjustment.

84. In recognition of this problem, the "Baker Plan", articulated in 1985, 11/ ushered in a second phase. It sought to reduce or reverse the negative net transfer of resources by urging the international institutions to step up their lending efforts in concert with commercial banks. The adjustment programmes were supposed to be situated in a medium-term context, to emphasize increasing the production of exportables, and to support a higher level of GDP growth. This initiative failed to achieve its objectives, however, notwithstanding the greater involvement of the international lending institutions and the development of medium-term adjustment programmes. The failure was due to inadequate lending by commercial banks, persistence of high interest rates in international capital markets and difficulties in increasing export revenues at a pace sufficiently rapid to reduce the relative burden of interest payments.

85. The experience gained through this period of "muddling on" and recognition of the high human and political costs of a continuation of the status quo led, by April 1989, to the emergence of a new implicit international consensus 12/ on the need for debt relief which might be said to include the following elements:

(a) Acceptance of a tripartite responsibility by the Governments of debtor countries, the Governments of creditor countries, and the commercial banks involved in international lending to sovereign States;

(b) Insistence by the Governments of creditor countries that a further strengthening of debtor-country adjustment policies is necessary;

(c) Centrality of the case-by-case approach - i.e., country-specific determination of the adjustment programme and its financial requirements;

(d) Agreement that debt reduction belongs on the menu of financial packages for debt-distressed countries;

(e) Desirability of a market-based approach for commercial-bank debt reduction.

86. The agreement announced at the economic summit meeting held at Toronto in 1988 to enable the Paris Club to extend concessional debt relief on a case-by-case basis was the first concrete expression of the new consensus. The new procedures permitted write-downs of up to one third the value of the relevant debt and rescheduling of official and officially guaranteed debt-service payments over a longer period than before and at concessional interest rates. These favourable terms were applicable, however, only to low-income countries and only when IMF supported the need for such exceptional measures. In the case of low-income sub-Saharan African countries, debt relief on official debt was to have been accompanied by increased official development assistance flows from bilateral and multilateral sources. A combination of debt relief and new grants or loans on official development assistance terms is the only feasible way of providing the level of financial support which sub-Saharan African countries will need in the 1990s. There is, as yet, little sign that the requisite amounts will be forthcoming.

87. Agreement on the need for selective debt reduction vis-à-vis commercial banks and on appropriate mechanisms has been more elusive. However, a number of market-based approaches have evolved for enabling voluntary commercial-bank debt reduction to take place. They include debt-equity swaps, donor-financed debt

buy-back schemes (sometimes accompanied by commitments to enhance environmental safeguards), exchange of discounted debt for bonds, and exchange of discounted debt for "exit" bonds. Experience with such schemes has been valuable. It has allayed fears that satisfactory mechanisms would be difficult to design and implement. It has also shown the limits and inadequacies of a piecemeal approach to market-based debt reduction.

88. The recent initiative of the United States Secretary of the Treasury, Nicholas Brady, was based on the recognition by that country of the need for debt reduction to figure more prominently on the menu of options when negotiations on reorganizing debt take place between commercial banks and individual debtor countries. The United States proposal also provides for an enhanced role for IMF and the World Bank in facilitating voluntary debt reduction. In some cases, the international financial institutions would guarantee the interest payments on bonds exchanged for discounted debt. In other cases, they would lend money for the purpose of acquiring debt on the secondary market or for purchasing a zero-coupon long-term bond to serve as collateral for a national bond exchanged for debt. The case-to-case determination of need, the use of the market as a guide to appropriate rates of discount, and insistence upon an adequate adjustment programme by the debtor country supported by IMF, would retain their current importance. Although the plan appears to be couched in terms of the needs of middle-income heavily indebted countries (and initially applied to Latin America), it would be seriously deficient if the same principles are not applied to all heavily indebted middle- and low-income countries with significant amounts of commercial debt as well.

89. A number of problems need to be worked out before a process is set in motion which will rapidly reduce debt servicing to sustainable levels for the heavily indebted developing countries. In some countries, especially the United States, regulatory régimes will need to be changed so that losses in the valuation of assets can be spread over a number of years. Among the international institutions, the respective roles of IMF and the World Bank will need to be clarified. The importance of export performance to the restoration of credit-worthiness may argue for a more prominent role for GATT in monitoring trade policies of debtor countries and the conditions of their access to markets in developed market economy countries (see sect. C, 3.b below). To the extent that the present round of GATT negotiations results in significant liberalization of markets in which heavily indebted developing countries have comparative advantage, they will contribute to easing the debt-servicing difficulties of many countries.

90. Despite the emergence of a consensus on the case for debt reduction on a case-by-case basis, the need remains to work out appropriate schemes of debt reduction involving an active financing role for the Fund or the World Bank. Care should be taken with the transfer of risk from the private to the public sector since the purpose should not be to "bail out" the commercial banks. In fact, the public sector is already sharing losses in the form of reduced levels of tax revenue from banks writing off losses. Moreover, with the withdrawal of commercial banks from voluntary lending to developing countries, the multilateral lending institutions have been increasing their share in loans outstanding to heavily indebted developing countries, as have Paris Club creditors, by capitalizing a large portion of scheduled interest payments. Commercial banks themselves, often prodded by their regulatory authorities, have been strengthening their balance sheets by increasing loan-loss provisions and gradually increasing the proportion of equity capital in their total liabilities, so as to achieve by 1992 the capital adequacy targets established by the Bank for International Settlements. The aim of

co-ordinated debt reduction is to reduce the risk to both public and private sector of lending to developing countries by bringing debt-servicing obligations more closely into line with capacity to pay. At the same time, the private-sector commercial banks will have to be willing to take substantial losses by reducing their interest earnings in the context of a comprehensive debt reorganization. <sup>13/</sup> Hence, the case for purely voluntary debt reduction mechanisms seems weaker than hoped for in the Brady initiative.

91. Another concern is that the needs of heavily indebted countries for fresh finance from official sources will be increasingly met by diverting funds from other countries which do not have debt problems, thus "rewarding" policy mistakes. Against this view, it may be argued that since the large net transfer of resources from debtor countries to commercial banks in creditor countries for the past several years has caused real hardship in the heavily indebted countries, they have paid heavily for whatever policy mistakes may have been made. The diversion of public funds from other developing countries to the heavily indebted ones is already happening under present arrangements. By increasing the total resources available to the international financial institutions, funds committed to facilitating the process of debt reduction should be additional to current levels of financial flows. In any case, adding debt reduction to the menu of options would not preclude the continued use of mechanisms such as debt swaps.

92. Debt reduction should be accompanied by complementary increases in the provision of finance through official channels. The totality of these financial commitments should form a coherent, co-ordinated and comprehensive financial package for each country. A clearly identified "lead agency" should perform the co-ordinating role in securing the commitments, and in monitoring the performance of debtor countries in respect of their policy commitments and creditor institutions in respect of their financial commitments. In the view of many Committee members, only a fully fledged debt reduction subsidiary of the World Bank and IMF could perform this task in an adequate manner.

93. An enlarged role for the international financial institutions in financial packages for heavily indebted developing countries will entail a need for an enlarged lending capacity. Progress in this area in respect of the World Bank, the African Development Bank and the Inter-American Development Bank is welcome. The lack of progress in increasing the quotas in IMF, however, is regrettable. The ninth review of IMF quotas should be accelerated. In the case of debt-reduction schemes, co-financing with developed member countries should be explored so as to further enlarge the resource base of the international financial institutions and limit the extent to which funds might be diverted from other developing countries to the heavily indebted ones. Given the improvement of credit-worthiness which orderly debt reduction is expected to produce, export credit insurance agencies in developed market economy countries should resume full cover for those countries with sound adjustment programmes, especially when these include measures for increasing the trend rate of growth of exports.

94. The resolution of acute debt-servicing problems, while necessary for a large number of countries, will not be sufficient for a restoration of growth. While the short-term impact on the net transfer of resources arising from the debt relief proposals now being discussed should be positive, its magnitude will almost certainly be modest. The longer-term benefits to be derived from restoring credit-worthiness will only be realized if improved adjustment policies succeed in improving export performance and macro-economic stability. For some countries, in

fact, fiscal imbalances are more important constraints on GDP growth than balance-of-payments difficulties. There are, in fact, conflicting views as to whether or not adjustment policies in many countries have been sufficiently far-reaching to encourage significant external financial flows from international capital markets once a debt reduction programme is in place. The prospects for external capital flows from both official and private sources are discussed below.

## 2. External finance for development

95. The transfer of savings from developed to developing countries has always figured prominently in discussions of international co-operation for development. Although in most years, on average, 85 per cent of investment in developing countries is financed by internally generated savings, the additional contribution made by external savings has been important. As has been seen, a portion of these external savings finance net payments of interest and profit remittances on a country's net foreign liabilities. The remainder is the net transfer of resources and represents the command over additional real resources made possible by these financial transactions. Net transfers (disbursements of medium- and long-term external loans minus interest and amortization payments on medium- and long-term external debt) have unfortunately reached large negative values in many of the heavily indebted developing countries in recent years. In the five years to 1982, net resources transfers through long-term lending, including concessional loans, to developing countries were positive and amounted to \$147 billion. Since 1982, resource transfers turned negative, totalling \$85 billion in the five-year period 1983-1987. The shift in resource transfers was especially pronounced for the highly indebted middle-income countries whose net resource transfer of \$61 billion in 1978-1982 became a net loss of \$93 billion in 1983-1987. 14/

96. In order for developing countries to acquire external savings, developed countries must be generating surplus savings; that is, savings rates must be higher than investment rates. Yet recent trends have been for both savings and investment rates in industrial countries to fall. While there has as yet been no clear tendency for the absolute savings surplus or savings/GNP ratios to fall, the differences in performance among major industrial countries suggest that this could well happen in the future. While savings rates in Japan and the Federal Republic of Germany have exhibited stable or slightly upward trends since 1975, they have fallen off in the United States, particularly since 1982. Investment shares, on the other hand, have fluctuated around a constant level in the United States, have tended to fall slightly in the Federal Republic of Germany, and have fallen strongly in Japan. In all three countries, investment shares appear to have stabilized during the period 1985-1987 and risen in 1988. Thus, further declines in savings rates would tend to reduce savings surpluses in the industrial countries and thereby reduce the scope for an increase in net capital flows to developing countries. 15/

97. In the non-oil exporting developing countries, savings rates have exhibited a clear upward trend without major fluctuations. This was accompanied by a rising trend in investment rates through 1981. In subsequent years, investment rates dropped off sharply as an increasing portion of domestic savings was transferred to creditors abroad for debt-servicing, in the absence of an adequate level of new capital flows. 16/

98. The dramatic decline in net capital flows to developing countries has been almost entirely concentrated in flows from the private sector in developed market economy countries - notably, commercial banks.

99. Although foreign direct investment has also declined in the heavily indebted countries, official flows from OECD countries and those that are members of the Council for Mutual Economic Assistance (CMEA) increased slightly between 1981 and 1985 and in all sub-categories - bilateral, multilateral, concessional and non-concessional. Official flows from OPEC countries, however, declined, as those countries began to experience external-payments difficulties themselves. 17/

100. Direct foreign investment at its peak in 1975 was equivalent to only 0.9 per cent of the GDP of developing countries and by 1985 it had fallen to 0.2 per cent. Portfolio investment peaked in 1978 when it was 1.2 per cent of the GDP of developing countries, but by 1985 it had become -0.1 per cent. It is unlikely that bank-lending will resume on a significant scale until long after the debt crisis has been resolved. That is - portfolio investment is more likely to be a consequence of growth than a cause of it. Official development assistance reached its peak in 1961 and 1962 when it amounted to 1.9 per cent of the GDP of developing countries. Thereafter it declined steadily, and by 1985 it amounted to only 0.8 per cent of third world GDP. 18/

101. Changes in the levels of financial flows from various sources have been reflected in large shifts in the structure of financial flows to developing countries. The share of official development assistance in total flows, for example, increased from 35 per cent in 1981 to 69 per cent in 1985 while the share of private capital flows fell from 54 per cent to less than 5 per cent. The share of non-concessional flows from multilateral institutions increased from 6 per cent to nearly 17 per cent. These changes represent a return to the pre-1974 pattern of development finance. 19/

102. At the same time, there have been important shifts in the destination of net capital flows. Flows to least developed countries, most of which have been on highly concessional terms, have increased, as have net capital flows to China and India. Net capital flows to sub-Saharan Africa fell somewhat between 1981 and 1985, but have since increased. Thus, the reductions in net capital flows have been concentrated in the middle-income countries of Latin America, North Africa, the Middle East and South-East Asia, with the brunt of the decline borne by the heavily indebted middle-income countries.

103. The impact on the volume and terms of capital flows to developing countries of the major imbalances among developed market economy countries has been pervasive. The funding of a growing volume of public-sector debt, especially that of the United States, in the national and international capital markets has almost certainly been the one principal factor in maintaining interest rates at their currently high levels in real terms. There has almost certainly been a "crowding out" effect as well, since funding the public-sector debt of the developed market economy countries is perceived as virtually riskless compared to lending to developing countries, even to those not having experienced serious debt-servicing difficulties. 20/

104. It has long been a target of the international community that the wealthy donor countries should allocate a minimum of 0.7 per cent of their GNP as foreign aid to assist developing countries. This target has never been attained, and we

are further from achieving it today than ever before. It appears that foreign aid has lost its momentum. In the five-year period 1983-1987, net official development assistance (net of amortization) has averaged about \$43 billion in nominal terms, or the same as in the period 1980-1982. As a proportion of the GNP of the developed countries and, for that matter, in real absolute terms, official development assistance flows have declined significantly. 21/

105. The story of the United States foreign assistance programme dramatizes the point. 22/ In the late 1940s the United States aid programme accounted for 2-3 per cent of that country's GNP. A decade later it was down to 1 per cent, and today it is 0.3 per cent of the gross national product. In real terms the value of United States aid today is less than half what it was 40 years ago. Moreover 47 per cent of the aid goes to just two countries - Israel and Egypt. Military aid now represents 35.8 per cent of the total, and if this is excluded, United States economic assistance accounts for only 0.2 per cent of GNP. This is the lowest aid ratio of any member country of the Development Assistance Committee of OECD. By contrast, Japan, with a population only half the size of the United States and a per capita income only 73 per cent as large, is expected to replace the United States as the largest aid donor in 1989.

106. Other industrialized countries have also stepped up their aid efforts - in some cases well above the target of 0.7 per cent of their GNP. In addition, some have made considerable improvement in the quality of the aid provided, although further advances are clearly needed. In the 1990s, the provision of aid as grants and concessional credits to developing countries, particularly the poorest ones, will remain a critical element of a strategy for development.

### 3. Global macro-economic management

#### (a) Need for strengthening and reforming existing global institutions

107. The process of creating a more closely integrated world economy is likely to continue during the next 10 years, and with increased globalization will come greater interdependence of all aspects of economic life. National economies will gradually lose their separate identities and become closely linked into an international economic system.

108. The transformation of the world economy through globalization and close interdependence will not necessarily occur smoothly. Adjustments will be required and sometimes these adjustments will be painful. On the other hand, the transformation of the world economy will create numerous opportunities for mutually beneficial change and development. The task is to minimize the pain of adjustment while taking full advantage of the potential benefits that are created. This is easier said than done.

109. Politically we are witnessing the disappearance of hegemonic power, the decline of international leadership in economic affairs and the slow emergence of a multipolar world. Thus, precisely at the time when we approach the formation of a single world economy, the possibility of a single country taking the lead and guiding the collectivity of States through the transition appears to be waning. Moreover, the declining leadership by the once hegemonic power has been accompanied by a weakening in the authority of the major international economic institutions: GATT, IMF and the World Bank. The two phenomena are, of course, closely connected



since the authority of the international economic institutions depended upon the support of the hegemonic power and its allies.

110. The world now finds itself in a situation where there is a pressing need to strengthen and reform existing global institutions of macro-economic management for the benefit of the international system as a whole. Three points in particular deserve attention by statesmen in the near future. First, there is a need to design improved co-ordinating machinery for international economic co-operation between developed and developing countries. Neither the United Nations Secretariat nor UNCTAD nor the World Bank was intended to play such a role or is capable of doing so. Yet without machinery for policy co-ordination, it is difficult to see how an international development strategy can be implemented. Secondly, there is a need to increase substantially the resources of the multilateral financial agencies so that they can begin to play a role not too dissimilar from that played by their national counterparts. The lending capacity of the World Bank, the regional development banks, the International Fund for Agricultural Development (IFAD) and IMF (preferably by the issue of special drawing rights) should be raised so that they can contribute in a significant way to the implementation of the next international development strategy.

111. Thirdly, a mechanism should be found that will make it possible in a highly interdependent world to introduce international accountability for national economic policies. National policies have international as well as national consequences. In effect national actions have widespread externalities, both positive and negative, and the time has arrived to recognize this explicitly by developing appropriate international institutions. One of the tasks of a new institution would be to establish a system for monitoring trade policies with a view to early detection of unfavourable consequences on trading partners.

(b) Functioning of the international monetary system

112. A well functioning international monetary system is an essential component of international economic co-operation. Traditionally, its scope was thought of as confined to three functions:

- (a) Ensuring adequate liquidity for the financing of trade;
- (b) Maintaining a system for facilitating exchange-rate realignments;
- (c) Providing short-term finance to countries to assist them in making balance-of-payments adjustments.

More recently, its scope has been broadened to include surveillance of the economic policies of major developed market economies, evaluated in terms of their impact on other countries, as mediated, for example, by the level of world interest rates or the pace of world inflation.

113. The impacts of a poorly functioning international monetary system on the development process are manifold, but three clusters of issues may be singled out. First, when the balance-of-payments adjustment process places more of a burden to adjust on deficit countries than on surplus countries, world economic growth and the growth of deficit countries clearly suffers. Excessive exchange-rate volatility also imposes costs since it tends to reduce the expected gains from producing for external markets and thus discourages investment. Growth also

suffers when the finance available to support balance-of-payments adjustment programmes is insufficient, because then adjustment will have to be compressed into a narrower time frame, with greater emphasis placed on demand restraint than would otherwise be the case. There is an obvious and pressing need for an appropriately high level of transitional development finance for countries trying to implement economic reforms to accelerate growth. Secondly, the provision of liquidity has come to be mediated through commercial banks, which do not take into account the relatively greater needs of developing countries. Creation of special drawing rights was meant to improve the situation, since the rights are allocated in proportion to Fund quotas rather than perceptions of credit-worthiness, but preoccupation with the risk of renewed global inflation has put a halt to further emissions of special drawing rights in the 1980s, while the principle of the link between such emissions and the need for development finance has been consistently resisted by developed market economy countries. Thirdly, lack of effective means for insisting upon policy changes in developed market economy countries when their policies lead to excessively high interest rates has meant the persistence of a high level of interest rates, which has aggravated the debt-servicing difficulties of heavily indebted developing countries and nearly excluded others from access to bank credit. 23/

114. Furthermore, there is need for a mechanism for linking the functioning of the international monetary system to that of the international trading system, especially as regards the balance-of-payments adjustment process. This could take the form of reviews of the barriers in importing countries to the exports of countries with persistent current account deficits and the establishment of a dual conditionality, binding on both the deficit countries and their major trading partners to ensure that relatively more of the adjustment takes place by expanding exports compared to import contraction than has been the case in the past.

(c) Responsibilities of the industrialized countries for global macro-economic management

115. Pending more fundamental reforms, one must seek improvements in the national economic policies of the major industrialized countries. Whether or not they choose to recognize them, these countries have policies with profound implications for the economic performance of the rest of the world. De facto, they bear responsibilities for global macro-economic management.

116. The major industrialized countries of Western Europe and North America have for a number of years given priority to restraining inflation. While price increases have indeed been less rapid than in the late 1970s, the restrictive monetary and expenditure policies that have been adopted to combat inflation have resulted in universally high open and disguised unemployment, low investment, sluggish growth and a generally low level of aggregate demand. One of the most important conditions for accelerating world growth in the 1990s is wider recognition in the industrialized countries that, while resistance to inflation is one objective of the international community, it is not the only objective. The solution of many economic problems, domestic as well as international, could be facilitated if expansion were given a higher priority by the OECD countries in general, following the example of Japan. In many countries, there is a strong case for a change in the composition of governmental expenditures away from military spending in favour of investment. In many countries there is also a need for improved fiscal policies and changes in the monetary fiscal policy mix in favour of one that would permit lower interest rates which would encourage more private investment.

### III. ELEMENTS OF A STRATEGY FOR THE 1990s

117. Any development strategy, be it national or international, must have priorities and hence must be selective. There can be no escape from the necessity to choose. In formulating an international development strategy for the 1990s, it is suggested that the priorities be few in number and that international action be organized around four themes.

118. These four themes are:

- (a) Accelerated economic growth;
- (b) Greater concern for human development;
- (c) An absolute reduction in the number of people suffering from severe poverty and deprivation;
- (d) Preventing further deterioration of the natural environment.

#### A. Accelerating growth in the 1990s

##### 1. The need for accelerating growth

119. The need for faster growth, as explained in chapter I, is undeniable, especially in the third world and especially in those parts of the third world where per capita incomes fell during the 1980s. Growth, of course, is not an end in itself; it is a means to increase the well-being of people throughout the world. If the growth of income per head is negative or negligible, it is almost impossible to reduce poverty substantially, particularly in countries where the incidence of poverty is high. But even when the rate of growth of per capita income is positive, it does not follow automatically that poverty or unemployment or hunger will decline. Much depends on the pattern of growth. If, for example, growth is accompanied by greater inequality in the distribution of income, the reduction in poverty could be rather modest. Similarly, the effects of growth on unemployment depend not so much on the average rate of expansion as on the employment intensity of the sectors of the economy that expand most rapidly. Even the elimination of famine in countries such as the Sudan and Ethiopia depends less on economic growth than on bringing civil war to an end. And again, growth can be accompanied by negative environmental consequences which actually lower the well-being of some groups of people.

##### 2. Demographic transitions 24/

120. Population trends will affect the possibility of accelerating growth in per capita income in the 1990s. There is not a direct relationship between slower growth of population and faster growth of average incomes, but on the whole as the rate of growth slows, the easier it is likely to be to increase the growth of income per head.

121. Population growth rates began to decline around 1960, and the decline is expected to continue during the coming decade. Demographic expansion occurred at a rate of 2.1 per cent a year for the world as a whole during 1960-1970; according to United Nations estimates, it should be only 1.7 per cent a year during 1990-2000. This fall in population growth rates is expected to occur in all groups of countries, be they rich or poor, capitalist or socialist, but not in all regions. Thus, in the capitalist developing countries the population growth rate is expected to fall from 2.5 per cent a year in 1960-1970 to 2.3 per cent in 1990-2000, while in China and the other Asian planned economies the decline is expected to be from 2.4 per cent in 1960-1970 to 1.3 per cent in 1990-2000.

122. Within the third world, population growth rates are expected to remain high (3.2 per cent a year) in West Asia and to continue to accelerate (to 3.3 per cent a year) in sub-Saharan Africa. Elsewhere they should fall, sometimes sharply. It is perhaps too early to claim that the population problem has been solved, but attention in future is likely to be focused less on the overall rate of increase and more on the rate of increase in urban areas, which continues to be high despite the diminished overall rate of population growth. In 1980-1985, for instance, the urban population grew 3.1 per cent a year in the low-income economies and 3.7 per cent a year in the middle-income economies, as compared to total population growth rates in the two groups of countries of 1.9 and 2.3 per cent, respectively.

123. Rapid demographic expansion is thus not likely, in general, to be as great an obstacle to accelerating economic growth in the 1990s as perhaps it was in earlier decades. The main international and domestic barriers are likely to lie elsewhere, and it is to those that we now turn.

### 3. Stimulating growth in the third world: domestic policies

124. A central policy objective during the next decade must be to raise the rate of accumulation of capital and improve its allocation. In a great many countries gross domestic investment actually declined during the 1980s, and that pattern clearly must be reversed if even minimum growth objectives are to be attained. As can be seen in table 3, investment increased at an extraordinarily rapid rate in China and at a modest rate in India. In the other low-income economies as a group, however, investment increased only 0.4 per cent per annum, which implies a heavily negative rate of growth in per capita terms. In the middle-income economies the growth of investment was negative, and the lower middle-income economies fared worse than the upper middle-income ones.

125. The most serious situation as regards investment occurred in two overlapping groups of countries - sub-Saharan Africa and the highly indebted countries. In sub-Saharan Africa gross investment declined at an annual rate of 9.3 per cent a year, and in the highly indebted countries it declined by 6.3 per cent a year. The stock of capital per head of the population obviously declined sharply in many third world countries and it should be an object of public policy to recreate conditions for higher levels of investment.

Table 3.

## Rates of growth of gross domestic investment, 1980-1986

(Percentage per annum)

| Type of economy           | Rate of growth |
|---------------------------|----------------|
| Low-income economies      | 13.2           |
| China                     | 19.3           |
| India                     | 4.6            |
| Other low-income          | 0.4            |
| Middle-income economies   | - 2.3          |
| Lower middle-income       | - 3.4          |
| Upper middle-income       | - 1.9          |
| Highly indebted countries | - 6.3          |
| Sub-Saharan Africa        | - 9.3          |

Source: World Bank, World Development Report, 1988 (New York, Oxford University Press, 1988) table 4, p. 228.

126. Unfortunately it is not enough merely to raise the rate of growth of investment in view of the fact there was a tendency throughout the developing world for the efficiency of investment to decline in the 1980s. In the coming decade it will be important for Governments to take what steps they can to increase the efficiency of investment so that it at least regains the levels experienced in the 1970s. In addition to a restructuring of output, this may require reform of investment procedures within central government ministries, improved criteria for investment decisions in public sector enterprises and price reforms designed to channel private investment in more socially optimal directions. State-owned enterprises, in particular, have tended to serve limited interests, have been inefficient and have often operated at a loss and thereby constituted a drain on resources available for development. Whether such enterprises are retained in the public sector or privatized, they should be forced to become more competitive by increasing their exposure to market forces.

127. The savings effort in developing countries remained surprisingly large on the whole, the average savings rate being 23.6 per cent of GDP in 1987, or about the same as it was in 1973 before the first sharp increase in oil prices. In sub-Saharan Africa, however, the savings rate was less than half the average in the

rest of the third world - namely, 10.9 per cent in 1987 - and much below the rate of savings achieved in 1973 - namely, 17.5 per cent. In this region a major effort will be required in the coming decade to raise the savings rate to a level compatible with the minimum desired rate of growth. Failure to do so will almost certainly result in further impoverishment.

128. Public expenditure in the developing countries increased its share of GNP by nearly 41 per cent between 1972 and 1986, central governmental expenditures rising from 18.7 per cent of GNP in 1972 to 26.3 per cent in 1986. Much of this was due to rising interest payments on the foreign debt. When one examines the composition of central governmental expenditures, two things stand out. First, the share of expenditure devoted to human development (notably, education and health) declined, especially expenditure on education, and secondly, the proportion of expenditure devoted to the military also fell. (See table 4.) These were, of course, falling shares of a total which was itself an increasing proportion of GNP. Thus when these expenditure categories are expressed as proportions not of total central governmental expenditure but of GNP, it transpires, paradoxically, that public expenditure on the military and on education and health rose. It would be highly desirable if developing countries in the 1990s could take advantage of the improved international political climate and curtail military expenditure, thereby releasing additional resources for expenditure on human development (which, as we shall see below, is essential) and for physical investment. Indeed, real public expenditure on education per student and real public expenditure per capita on health often either stagnated or declined. The central government current deficit, which can be interpreted as negative savings, rose very sharply, from 3.5 per cent of GNP in 1972 to 6.2 per cent in 1986. This is a further indication of the need to reform the public finances through improved tax and expenditure policies in order to make a larger contribution to accelerating growth.

129. Indeed in many countries, above all in those affected by serious debt-servicing problems, the fiscal deficit of the central government is the major constraint on development. The ease with which several countries have generated trade surpluses indicates that the balance-of-payments constraint is not always as severe as was once thought, and widespread evidence of massive capital flight indicates that in those countries at least a savings constraint is not binding. Fiscal reforms (designed to raise more revenue) and debt relief (which would release public-sector funds for development purposes) often are the main priorities.

130. Other internal policy reforms are also likely to be necessary in many countries. These include measures to improve the efficiency of domestic capital markets and alleviate financial repression and controls to prevent capital flight. The deficits of public sector enterprise are quite large in some countries and these, too, represent negative savings and hence a constraint on growth. Where deficits are quantitatively important, Governments should reconsider the pricing policies of public sector enterprises as well as the desirability of transferring such enterprises to the private sector. The objective should be to accelerate savings and capital formation in support of faster growth, and policies towards public sector enterprises should be made consistent with this overall priority.

Table 4.

Central government expenditure in the developing countries,  
1972 and 1986

|   | <u>1972</u>         | <u>1986</u> | <u>1972</u>                                    | <u>1986</u> |
|---|---------------------|-------------|--|-------------|
|   | (percentage of GNP) |             | (percentage of central government expenditure) |             |
| Total central government expenditures, of which | 18.7                | 26.3        | 100  | 100         |
| Military expenditure                            | 2.7                 | 3.3         | 14.3   | 12.5        |
| Education                                       | 2.2                 | 2.7         | 12.5   | 10.3        |
| Health  | 0.9                 | 1.2         | 4.7  | 4.5         |

Note: In some large developing countries, central government expenditure excludes significant expenditure by lower levels of government on such things as education.

Source: World Bank, World Development Report, 1988 (New York, Oxford University Press, 1988) table 23, p. 267.

#### 4. Scope for trade policy changes in developing countries

131. Developing countries must be free to choose their own policies to suit their own circumstances, changing them in accordance with their own perception of needs and according to their own timing. Many developing countries benefited from export-oriented policies in the 1970s and 1980s. Countries pursuing outward-oriented policies have done so in many different ways. For some, import liberalization was a dominant feature. For most, however, active efforts to promote exports were relatively more important. In some cases, integration of domestic financial markets with international capital markets was also attempted. Some countries, while seeking to implement more open trade policies and to deregulate domestic capital markets, failed to implement simultaneously appropriate fiscal and monetary policies, which led to problems of capital flight, declining domestic savings and a rapid further build-up of external debt.

132. Whether or not changes in trade policies towards greater openness are likely to produce positive effects in a relatively short period of time depends upon such initial conditions as country size and the extent of prior investment in infrastructure, diversification and industrialization. Poor countries exporting a narrow range of primary commodities are thus unlikely to experience immediately all the benefits from the adoption of such policies, since it is only over the medium term that a diversified export sector can be developed.

133. Changes in trade policies towards a more liberal régime must be considered in the context of the macro-economic environment and the prevailing overall structure of incentives. An appropriate exchange rate is the most important single element in "successful" trade policy. Beyond the exchange rate, the key steps in the process of trade liberalization, in rough order of difficulty, are as follows:

- (a) Removal of redundant trade barriers;
- (b) Replacement of administrative controls by relevant market-based policies;
- (c) Achievement of greater uniformity in incentive structures;
- (d) Uniform reductions in the levels of import duties and export subsidies. 25/

134. Generally speaking, the timing of import liberalization measures has often been critical to their success. The presence of such factors as good weather, a favourable balance-of-payments position, the availability of external capital flows, and moderate-to-strong growth prior to the implementation of trade policy measures can greatly ease the problem of public acceptance of the reforms.

135. Major changes in trade régimes generate potentially large costs and benefits for different economic groups in developing countries, requiring considerable political skill in reconciling divergent interests. Incautious advocacy of strong liberalization measures by international institutions may be counter-productive. These institutions should therefore support liberalizing change where it is possible, rather than prescribing it immediately for all.

136. Trade liberalization must be accompanied, as has been seen, by appropriate macro-economic policies, including, in particular, the maintenance of realistic exchange rates if they are to be fully effective and durable. Unchecked inflation and/or over-valued exchange rates increase the demand for imported goods, reduce competitiveness, and may in turn lead to balance-of-payments crises and recourse to quantitative restrictions on imports or other import-restraining measures.

137. Reduction of anti-export bias requires, at a minimum, the provision to exporters of access to inputs at international prices. This could mean, for example, compensating exporters for differences between national and international prices of inputs which may arise from protecting domestic import-substituting industries. It may also require review of regulatory régimes and credit policies. Indeed, an appropriate degree of domestic industrial policy liberalization is a necessary corollary of a successful policy of trade liberalization.

## B. Human development

### 1. The urgency of human resources development

138. In formulating an international strategy for the 1990s it would be prudent to assume that the third world will have to rely largely on its own resources to finance development. Foreign capital is likely to be meagre; domestic savings are also unlikely to be abundant. For these reasons alone it will be essential to make full use of the human resources available within the third world itself. In the 1990s people should be placed firmly in the centre of development.



139. The most compelling reason for doing so is that the process of economic development is coming increasingly to be understood as a process of expanding the capabilities of people. The ultimate focus of economic development has of course always been human development, but at times this has become obscured by too narrow a concentration on expanding the supplies of commodities. Economic growth should be seen as merely one means among several to the end of enhancing people's capabilities. Commodities and capabilities are of course linked - for example, through the distribution of income which affects the degree to which the basic needs of the entire population are satisfied and through the system of entitlements that determines to what extent specific needs in society are met. But commodities and capabilities are distinct categories and should be kept separate. In the final analysis it is capabilities that matter, and this is underlined by putting people first. An emphasis on human development has the virtue of forcing policy makers to ask themselves the question, growth for what?

## 2. Human development as a means

140. Human development also has instrumental value in accelerating economic growth. <sup>26/</sup> Indeed expenditures on improving human capabilities have the potential to yield a return to society at least as high as the return on physical investment. Estimates of the rate of return on expenditure on education have made this very clear, even after making allowances for possible upward biases in the rates of return. <sup>27/</sup> Countries that neglect human development not only retard the expansion of human capabilities in the broadest sense, they also undermine the country's long-run potential rate of economic growth.

141. Until the beginning of the present decade, public expenditure on education rose rapidly throughout the third world. Starting around 1980, however, real per capita expenditure on education began to fall in some countries and in others the rate of increase began to diminish. Per capita expenditure on education in real terms declined in the following regions - sub-Saharan Africa, the Western hemisphere, West Asia and the Mediterranean. These regions include of course many countries in which average incomes fell, and hence it is hardly surprising that expenditure on education also fell, but the decline in this component of human capital formation is cause for concern.

142. If one disaggregates total educational expenditure among first-level (primary), second-level (secondary) and third-level education and examines expenditure per pupil, further interesting points emerge. First, in the developing countries as a whole, real expenditure per pupil declined between 1980 and 1985 in each of the three levels of education. Secondly, this same pattern is found in the four regions identified above as ones where total expenditure on education per capita declined. Thirdly, real expenditure per student in secondary education also fell in North Africa. Finally, in both the East Asian newly industrialized countries and in the other East Asian countries, real public expenditure per student on third-level education declined. In only one group of countries - South Asia - did expenditure per pupil increase in all three levels of education. In every other group there was a decline in at least part of the educational system. It is a sad record to report.

143. Education and training should also be directed towards enhancing the ability of individuals to participate constructively in organizations such as enterprises, trade unions, and government agencies. On-the-job training can often be more

productive than off-site training, especially when dealing with innovative institutional arrangements, such as task forces on quality control.

144. The record in health care is not much better. In the developing countries as a whole, per capita government expenditure on health increased 3.2 per cent in real terms between 1980 and 1985. This modest rise in average expenditure obscures the fact that in sub-Saharan Africa, the Mediterranean and the western hemisphere, per capita expenditure on health actually fell. The fall varied from 4.1 per cent in sub-Saharan Africa to 5.5 per cent in the western hemisphere and 22.8 per cent in the two Mediterranean countries of Yugoslavia and Malta. 28/

145. Considering the evidence on both educational and health expenditure, it seems clear that in the first half of this decade there was in many third world countries a deterioration in the human condition and the potential for long-run growth. One of the tasks of the international development strategy of the 1990s should be to reverse that deterioration in every country where it has occurred and, in the other countries, to push for further improvements.

### 3. Strategic activities in the human resources area

146. Human development encompasses a wide range of activities, but here, as in other areas, selectivity is essential. Certain activities can be regarded as strategic and hence deserving of priority: education and training, health and nutrition, and housing. If these three areas receive the attention they deserve, it is likely that human development as a whole will proceed at a rapid pace.

147. The recommended approach during the next 10 years is to emphasize those aspects of expenditure on human development which are akin to capital formation and to give lower priority to the purely social welfare aspects of expenditure programmes. Such an approach will have several advantages. First, the development of human resources in almost any form will inevitably contribute directly to the well-being of the poor. Secondly, an emphasis on human capital formation will help to create a more equal distribution of income. 29/ Thirdly, it will create an environment in which equality of opportunity is not likely to lead to great inequality of outcomes. Fourthly, by providing comprehensive health, nutrition and educational services, complementarities between the various services can be exploited. For example, better health for the poor (as a result of primary health care services) increases the efficiency with which the body transforms calories into improved nutrition (the calories possibly obtained from a grain-rationing programme); and improved nutrition, in turn, leads to increased attendance at school (funded by the State) and improves the ability of children to learn. Similarly, there are important linkages between women's health, female life expectancy, the education of young women, the birth rate, and population growth. There are linkages between literacy and health; between education, literacy and labour productivity etc. Indeed, because of the complementarities between different types of human development programmes, there may be increasing returns to expenditure on human development over quite a large range.

148. Finally, there are complementarities between physical and human capital which a strategy of the type being suggested can exploit. Investment in modern industry requires skilled labour; agricultural mechanization requires people who can, for example, operate and repair irrigation equipment; modern services (banking, tourism, public administration) require a literate and numerate labour force. Thus

an emphasis on human capital formation can, in principle, yield high returns in the form of an increase in the productivity of investment in physical assets.

#### 4. Half our people, all our future: women and children

149. The crucial role of women in development has come to be acknowledged. Women in the third world perform the fundamental tasks of feeding and nurturing the population. They are responsible (particularly in Africa) for growing and marketing most of the food crops. They do most of the food preparation, obtain the water and fuel for the household, are responsible for health, nutrition and hygiene, and provide the early education of the young. Increasingly, too, women are engaged in wage employment or self-employment in the modern sector of the economy. It is not surprising that women are so important since they are, after all, half our people.

150. Yet in many countries women have been neglected by development programmes and discriminated against by public policy. Female literacy rates are lower than men's. Female enrolment rates in all three levels of education are usually lower than men's. Females spend less time in education than males, probably because from the age of five upwards girls are expected to work in the home and in the fields. The nutrition and health of women are often neglected in favour of those of men. In India, Bangladesh and Pakistan there is evidence of discriminatory feeding and health practices favouring male children right from childhood. <sup>30/</sup> Despite the fact that women enjoy a biological advantage in longevity over men, life expectancy for women in many developing countries is lower than for men in age groups below 50 years. This is due largely to two facts. First, there is generally a higher mortality rate for female than for male children above five years of age and, secondly, there is a higher mortality rate for women of child-bearing age (15-44) than for men of corresponding years. <sup>31/</sup> In addition, in India and Pakistan, contrary to the usual pattern, the mortality rate among infant girls zero-to-five years old is higher than for boys in the same age group. These patterns of mortality are indicative of discrimination against girls from the time of birth onwards.

151. In the 1990s the task is to translate greater understanding of the problems of women into altered priorities. It is essential that women receive equal access to education and training programmes, to health and nutrition services and, in the sphere of production, to credit, extension services, technology and income-generating activities. Beyond this, specific investments favouring women are needed - e.g., in safe motherhood and in labour-saving devices of particular relevance to women, such as more fuel-efficient methods of cooking, less labour-intensive ways of preparing food and more accessible sources of water, fuel and fodder. Empowering women for development should have high returns in terms of increased output, greater equity and social progress.

152. If women are half our people, the young are all our future. Any society that neglects its youth does so at its peril. Winston Churchill expressed this well when he said, "there is no finer investment than putting milk into babies". If that was true of war-time Great Britain, it is no less true of the contemporary third world.

153. We have already referred to the decline in real public expenditure on education per pupil in many third world countries. To that should be added the

declines in primary school enrolment ratios and the decline in the quality of education in many countries. There is a danger that, unless these tendencies are quickly reversed, this generation of young people, and the next, will be less well equipped for the future than the last.

154. UNICEF reports that about 45 per cent of children under five in the developing countries, excluding China, are living in absolute poverty. <sup>32/</sup> This is roughly 155 million young people, 74 per cent of whom live in rural areas. About 40 per cent of children under five years of age suffer from protein energy malnutrition. About 20 per cent of infants in the third world are born with low birth weight. Nearly half the children have no access to clean drinking water and two thirds do not have access to adequate sanitation. About 20 per cent of children of primary school age do not attend school, and of those who attend, one third drop out before completing four grades. <sup>33/</sup> There is here an agenda for action that deserves high priority, for the future of our children is no less the future of ourselves.

#### 5. Participation and human development

155. People in the third world - women and men, the young and the old, but above all the poor - often feel like, and indeed are relegated to the status of, subjects. Recognition of this in recent years is what lies behind the call for greater popular participation in development. Broadly based development of the type recommended is most likely to succeed when the various groups in poverty are well organized. Participation, or the opportunity to participate if one wishes, is of course an end in itself, but participation also has a number of instrumental values which makes it an important feature of human development. First, participation in representative community-based organizations can help to identify local priorities, to determine which needs are essential or basic and which of secondary importance, and to define the content of development programmes and projects so that they reflect accurately local needs, aspirations and demands. Next, having identified priorities and designed the programmes which incorporate them, participation in functional organizations (service co-operatives, land-reform committees, irrigation societies, women's groups) can be used to mobilize support for national and local policies and programmes and local projects. Last, participation can be used to reduce the cost of public services and investment projects by shifting responsibility from central and local government (where costs tend to be relatively high) to grass-roots organizations (where costs can be low). In some cases, for example, it may be possible to organize the beneficiaries of an investment project and persuade them to contribute their labour voluntarily to help defray construction costs. In other cases some of the public services (clinics, nursery schools) can be organized, staffed and run by local groups rather than by relatively highly paid civil servants brought in from outside. Thus in an appropriate context, participation can flourish and in so doing contribute much to development.

#### 6. Desirable goals for the year 2000

156. Each country will of course set its own national goals for human development taking into account its particular social, economic and financial circumstances. There are, however, minimum desirable goals that may commend themselves to the international community as a whole. One such goal is the attainment of universal

primary education, including - especially - efforts to increase primary-education opportunities for girls. A second goal is a reduction of the infant mortality rate to no more than 50 per 1,000 or, in countries where this has already been achieved, a reduction of the infant mortality rate by 50 per cent. Thirdly, it is now possible virtually to eliminate severe malnutrition in all countries, and it is suggested that this should be a goal for the next decade of development. The measures necessary to reach this goal will vary from one country to another - including increased agricultural production, food entitlement programmes and improvements in primary health care systems - but the knowledge and resources necessary to banish severe hunger from the globe exist, and the time surely has come to give this a high priority. Lastly, a basic need of all people is access to safe drinking water and sanitation, and it is suggested that universal access to such services should be a goal for the year 2000.

157. It was indicated earlier that population growth rates are projected to decline in most regions of the world over the next 10 years. If the recommended policies are adopted to accelerate the rate of economic growth, the actual pace of demographic expansion should decline below the projected rates. If, in addition, high priority is given to human development, as we urge, a further reduction in the rate of growth of the population can be anticipated. Even so, in some countries, particularly in Africa, population growth rates may remain extraordinarily high, and Governments in these countries may wish to consider specific measures to reduce the rates.

### C. Reduction of severe poverty and deprivation

#### 1. Need for direct measures to alleviate poverty

158. While it is important to increase the aggregate rate of economic growth, reduce the pace of demographic expansion and give much higher priority in coming years to human development, these measures, separately or together, will not suffice to eliminate severe poverty and deprivation. It is now widely understood that one cannot rely on the benefits of increased production to trickle down automatically to all sections of society, particularly to those most in need. Growth is not enough. Even in the United States, which has enjoyed more or less sustained growth for over 200 years, it is estimated that 20 million people do not have enough to eat.

159. The poorest people in any society are the hardest to reach. They live in remote and inaccessible areas, are scattered and isolated, or else crowded in urban slums. They are the least skilled, they have the fewest productive resources and they have little access to high productivity employment. Growth tends to pass them by, and the public services fail to touch their lives unless specific measures are taken. It is important in formulating national strategies for the next decade of development for policy makers repeatedly to ask themselves, Growth for whom?

160. Roughly 90 per cent of the absolute poor <sup>34/</sup> live in rural areas, considering the third world as a whole. Within the rural areas the percentage of the population in poverty rises from 32 per cent in the Near East, to 49.8 per cent in Asia, to 53.4 per cent in Latin America, to 65.2 per cent in Africa. <sup>35/</sup> Given this high incidence of poverty in the rural areas and the location of most of the poor in the countryside, reductions in poverty depend on achieving sustained growth of agricultural income per capita of the rural population, combined with guaranteed

access of all sections of the rural working population to productive resources (land, water, pasture, forests). Unfortunately, neither condition has been satisfied in the 1980s. Agricultural GDP per head of the agricultural population actually fell in Africa, Latin America and the Near East, and rose only in Asia. Land concentration remained high in most countries, and appears to have increased in such countries as Brazil, Pakistan, Panama, the Philippines, Sri Lanka and Uruguay. <sup>36/</sup> And the size of the landless population increased by 11 million between 1980 and 1985, or by 5.3 per cent. <sup>37/</sup> The conclusion is inescapable: that "with notable exceptions, the basic needs of the rural poor are being less well met today than they were at the beginning of the decade". <sup>38/</sup>

161. Taking both rural and urban poverty into account, the International Labour Organisation (ILO) estimates that the number of people in the third world living in extreme poverty increased from 819 million in 1980 to 881 million in 1985. This is a rise of 62 million, or 7.6 per cent in just five years. Moreover, on the basis of present growth projections and assuming the distribution of income remains unchanged, the ILO projects a further rise in the number living in poverty to 913 million by 1995. (See table 5.) It must be one of the objectives of an international development strategy for the 1990s to ensure that the projections of the ILO do not in fact materialize.

Table 5.  
Number of people living in extreme poverty  
(Millions)

|                    | 1980 | 1985 | 1995<br>(projection) |
|--------------------|------|------|----------------------|
| Africa             | 210  | 278  | 405                  |
| Asia               | 562  | 538  | 450                  |
| Western hemisphere | 47   | 65   | 58                   |
| Total              | 819  | 881  | 913                  |

Source: International Labour Organisation (ILO), "High-level Meeting on Employment and Structural Adjustment", Geneva, 23-25 November 1987, p. 17, cited in Jean Mouly, "Reviving the world's economic growth: chances and risks". Mimeo, February 1989, p. 4.

162. Turning from the global estimates to the regional figures, it can be seen at a glance that rising poverty is most serious in Africa. Between 1980 and 1985, extreme poverty in Africa increased by 68 million and if nothing is done to reverse the trend, poverty is expected to rise by a further 127 million by 1995. In Latin America, extreme poverty rose by 18 million in the first half

of the decade. This is much less than in Africa, but because of the smaller base, the proportional increase was larger: 38.3 per cent in Latin America, compared to 32.4 per cent in Africa. Under present conditions poverty in Latin America should decline between 1985 and 1995, but according to the ILO's projections, the number of poor people in 1995 will still be higher than in 1980.

163. The unfavourable developments in Africa and Latin America were partly offset by favourable trends in Asia. The number of poor people in Asia is estimated to have declined by 24 million during 1980-1985, and the ILO projects a further decline of 88 million by 1995. This is encouraging. The Economic and Social Commission for Asia and the Pacific (ESCAP), however, takes a different view and regards progress towards the elimination of poverty as being "disappointing throughout the region". <sup>39/</sup> This judgement appears to be based on a relative, rather than an absolute, view of poverty and in particular on the high degree of inequality, the apparent stability of the overall distribution of income and in one or two cases (Bangladesh, Sri Lanka) on the fall in the share of household income received by the poorest quintile. At the very least this assessment of the situation in Asia shows that there are no grounds for complacency, particularly when one considers that under the ILO projections, there still will be more poor people in Asia than in any other region, and almost as many as in Africa and Latin America combined.

164. Thus the necessity to tackle poverty directly remains in all regions. The required direct measures are likely to include a combination of:

- (a) Welfare services and entitlement programmes which place a safety net under the poor;

- (b) Policies directed towards satisfying the basic needs of the poor, partly by giving priority to the production of goods consumed by low-income groups (wage goods) and partly by redirecting public expenditure programmes on essential infrastructure (transport, power) and services (education, primary health care) to benefit the poor;

- (c) Public works programmes aimed at providing employment for the poor;

- (d) Redistribution of income and productive assets in favour of the poor, notably land reform;

- (e) Investment and credit programmes aimed at the poor.

165. This may require a fundamental change in attitude by policy makers, a change from regarding poverty alleviation as essentially an act of charity and a drain on the exchequer that should be minimized to recognition that poverty alleviation should be seen as an investment in the poor, and moreover an investment that can produce a high rate of return. Such an approach would be likely in most countries to imply greater emphasis on peasant agriculture and small-scale rural entrepreneurship, a more employment-intensive pattern of growth, greater freedom for the urban informal sector and reduced emphasis on large-scale, capital-intensive, often State-owned manufacturing enterprises. Within the international community this is the approach that was adopted from the very beginning by the International Fund for Agriculture Development

(IFAD) and the success of IFAD has demonstrated the validity of the approach. It is now time for national Governments throughout the third world to apply on a large scale the lessons learned from the IFAD experience.

## 2. Desirable anti-poverty goals for the year 2000

166. The minimum objective for a new international development strategy should be to reduce the absolute number of people living in poverty by the year 2000. The present tendency for the numbers in absolute poverty to increase is not acceptable; the trend must be reversed. Each country should set its own standard, its own definition of poverty, and then direct its energies to ensure that by its own standard, development is accompanied by a reduction in the number of people living in conditions of severe poverty and deprivation. This is a readily attainable goal, and it is one that is so central to what development is all about that its enunciation as international policy could serve as a rallying point for renewed national commitment and enhanced international co-operation.

167. If the reduction of severe poverty and deprivation is to be a central objective of the next decade of development, it will be necessary for each country to create a monitoring and reporting system that enables it to trace changes in the living conditions of the poor with a reasonable degree of accuracy. Existing data on poverty are sparse and often years out of date. Alternative economic and social indicators, where they exist, often are not accurate. Further work will be necessary in order to fill important gaps in the data, improve reliability and develop "simpler, lower cost, non-conventional methods of information collection and analysis". <sup>40/</sup> Lack of complete information should not be used as an excuse to delay the design and implementation of policies to reduce absolute poverty, but nor should the need to monitor progress be neglected.

## D. Environment and development

### 1. Perceptions of environmental deterioration in the industrial and the developing world

168. If development is to have meaning, it must be long term; it must be sustainable. More and more frequently, however, concern is being expressed that present patterns of development, in rich countries and poor, cannot be sustained indefinitely, and perhaps for not much longer. Many people have come to believe that the world cannot continue on its present path. So much damage and stress are being inflicted on the environment that its capacity to sustain productive activities and eventually life itself is being undermined. Views such as these are widely held throughout the world, but it would be a mistake to assume that perceptions of environmental problems are identical in the industrialized and developing countries. They are not.

169. Many environmental problems in the industrialized countries are regarded as consequences of affluence. The use of large numbers of private automobiles, many for recreational purposes, results in air pollution; the intensive agriculture required to supply an over-fed and overweight population results in soil and water contamination by high levels of nitrates; the high



consumption per capita of manufactured products is associated with huge quantities of industrial waste, some of which ends up polluting the soil, rivers and coastal waters. Environmental damage in affluent societies is a consequence of excessive development and unrestrained demands for ever larger quantities of goods and services. It is thus a consequence of materialism and acquisitiveness.

170. While similar points apply to the modern sectors of developing countries, the most fundamental environmental problems in the developing countries are seen as consequences of poverty, not of affluence. A rapidly growing population puts pressure on a country's natural resources. The ever increasing demand for food and firewood, for example, results in the destruction of forests, degradation of the soil and depletion of water supplies. Thus the basis for future growth is eroded. Issues of economic development consequently cannot be separated from environmental issues. <sup>41/</sup> Poverty and the environment are closely linked, not least because it is the poorest members of society that typically suffer most from environmental deterioration.

171. Despite these differences in perception, there is broad agreement that attempts by people to improve their economic well-being have resulted occasionally in huge disasters (the explosion of a chemical plant at Bhopal, the nuclear explosion at Chernobyl) and more frequently in gradual destruction of the resources on which material betterment depends (desertification in the Sahel, flooding in the Indo-Gangetic plain). There is also broad agreement that the situation in the third world is sufficiently different from that in the industrialized countries that it would be a mistake to adopt identical technical standards for - say - air and water pollution throughout the globe. Environmental problems may be present in all countries, but the appropriate response will differ from one country to another. Environmental standards are needed, but in many cases they should be specific to each country.

## 2. Priorities for environmental action

172. Some issues, however, transcend individual countries and threaten the entire globe. Foremost among them is the possible warming of the planet from the emission of carbon dioxide into the atmosphere, the so-called "greenhouse effect". The main source of the greenhouse effect is the emission of carbon dioxide from the burning of large quantities of fossil fuels, above all in the advanced, affluent industrialized countries. Precise and continuous measurements of atmospheric carbon dioxide show a clear increase, from 315 ppmv (parts per million, by volume) in 1958 to 343 ppmv in 1984. If the present rate of increase of carbon dioxide emission continues for 40 years (1-2 per cent per year), with a slower increase thereafter, the carbon dioxide concentration towards the end of the next century will be about 600 ppmv, or more than twice the level of 280 ppmv in 1750 (based on analysis of glacier ice cores). <sup>42/</sup> Carbon dioxide absorbs heat that might otherwise escape from the atmosphere and redirects it back towards the earth's surface.

173. The consequence of this for the average global temperature still is uncertain, but computer-based simulation models predict that average temperatures will rise by 1°C by the year 2010 and possibly by 4.5°C by 2050. The temperatures in the arctic would rise more and increase more rapidly than

temperatures elsewhere. Those temperature changes, in turn, would lead to changes in rainfall patterns and, in particular, to a deterioration in growing conditions in the major temperate cereal-producing areas of the world.

174. Higher average temperatures also would result in a rise in the sea level, largely as a result of an expansion of the oceans as the water warms. A 1°C rise in temperature could raise the sea level by 30 cm by 2010 and a 4.5° rise could raise the sea level by as much as 150 cm by 2050. "Since more than half of the human population lives within 40 km of a coastline, a relatively modest 30 cm rise in sea level could have profound implications for many countries, particularly in Asia." 43/

175. A second threat to the entire globe comes from the depletion of the ozone layer in the upper atmosphere. This is due to the emission of chlorofluorocarbons into the air, again largely in the developed countries. The depletion of ozone in the stratosphere increases the exposure of the earth to the sun's radiation and could result in serious health problems for the human population. Fortunately, the potential seriousness of the situation has been recognized, and agreement has been reached by the industrial countries to curtail sharply the use of chlorofluorocarbons. Several important developing countries, including China and India, have expressed a willingness to restrain the growth of chlorofluorocarbon technology on condition that the wealthy countries create a special fund to assist developing countries to convert to ozone-safe technologies.

176. The image of spaceship earth is widely used to underline the increasing fragility of our shared environment. But we have not yet come to recognize fully that the global commons - space, the sea, Antarctica - are threatened by pollution and indiscriminating exploitation and deserve protection for the benefit of mankind as a whole. The pollution of the sea is occurring at an alarming rate, that of Antarctica and space has just begun, but the international community has yet to take action. The time for it to do so has arrived.

### 3. Affluence, pollution and international conflict

177. Not all environmental issues are global in scope or require universal agreement for their resolution. Indeed the number of such issues, although growing, is relatively small. More common are environmental issues that affect several, but not necessarily all, countries at once. They are international in character but not global. One example is pollution of fresh water supplies, as discussed in chapter IV. The industrialized countries provide many other examples of such environmental problems, though the issues raised are not unique to them.

178. One example is the nuclear-power industry. After Chernobyl, everyone is aware of the possible consequences to the surrounding community of an explosion in a nuclear-power plant. Everyone also is aware that the consequences are not limited to the immediate vicinity; they spread widely and quickly to other communities and countries downwind of the plant. Radiation threatens not just the citizens of the country where the plant is located but animals and livestock, agriculture and the human population in many countries, including those which do not even share a border with the country where the

accident occurred. Quite apart from the rare horrific accident, the nuclear-power industry suffers from a chronic, daily problem of how to dispose of dangerous radioactive waste. The waste from nuclear reactors remains radioactive and hence dangerous forever, and methods must be found to guarantee safe disposal until the end of time. No such method has yet been found, and thus every country that has nuclear reactors poses a potential and permanent environmental threat to the safety and well-being of its neighbors.

179. Even conventional industry can damage the environment of communities and countries hundreds of miles away from the origin of the pollution. A prime example is the emission of sulphur into the air by conventional coal-fired power stations and manufacturing enterprises. The sulphur returns to earth later as acid rain, a very dilute solution of sulphuric acid. This acid rain damages forests and fresh-water fishing and even corrodes stone buildings in areas downwind of the original source of pollution. Yet another typical example is the pollution of international rivers by chemical industries along the banks disposing of their waste products by dumping them in the river. The river may seem to one country to be an inexpensive way to get rid of unwanted substances, yet to other countries down-stream the river may be a source of drinking water. In effect, the up-stream country is shifting part of the costs of industrialization onto its defenceless neighbors.

#### 4. Poverty and environmental degradation

180. Many of the environmental problems found in the developing countries are different from those characteristic of the industrial countries. Shrinking forests, eroding soils, more frequent flooding of river basins and plains, overgrazed pastures and expanding deserts: these are the special problems one encounters in the third world. In these cases there is a close link between the persistence of poverty and restricted economic opportunities for the poorest people in society and the processes that result in the deterioration of the physical environment. Deforestation, desertification and degradation of existing cultivated land are inevitable as long as inequality in the distribution of productive resources is great and the pressure of the poor upon the physical environment is high. If there are lots of people, if many of them are poor and if the poor are denied access to produced means of production, it is obvious that the poor will have no alternative but to earn a living as best they can by extracting the maximum possible output from the natural resources available to them. This will unavoidably occur, the reduction of long-term growth notwithstanding.

181. Some problems could be ameliorated if the poor were organized to protect common resources. This would help to avoid over-exploitation. If nothing else were done, however, a serious problem would still remain because of the high time rate of discount of the poor and the associated high optimal rate of extraction, as seen from the perspective of the poor. The only real or permanent solution is to alter the strategy of development, redistributing resources in favor of the poor, giving high priority to human development and adopting policies that ensure that the benefits of growth accrue directly to those most in need.

182. What needs to be emphasized is that investment in the poor can be very profitable. Expenditure on improving the quality and availability of water

supplies to poor households, for example, can produce high returns at modest cost and certainly represents a better use of a country's resources than expenditure on curing easily preventable water-borne diseases.

183. Failing a reorientation of the development strategy, the question arises whether growth in the third world can be sustained in the face of a deteriorating environment. The answer is that aggregate rates of growth probably can be sustained. Environmental deterioration has not in general reached such a point that it will bring growth to a halt or even reduce the rate of growth markedly, but it definitely is costly and represents a misallocation of scarce resources. In some countries, however - for instance, those which run the risk of exhausting usable supplies of water - environmental constraints may affect the rate of growth. But that is not likely to occur in many countries. The more immediate danger is that, if environmental deterioration continues, it may be impossible to sustain the income of the poor. While development on average proceeds, the poorest sections of the community might be faced with falling incomes, and consequently, greater pressure upon those parts of the physical environment to which they have access and, finally, still lower incomes in subsequent periods. A vicious spiral of environmental degradation and falling income for the poor is certainly possible.

#### 5. Priorities for the year 2000

184. Environmental damage is not something that will be corrected automatically by the operation of market forces. Intervention by public actors is essential. Sometimes intervention by a single Government will suffice - notably, when a specific problem is limited to a single country. This could take the form of taxes or charges, bans on the use of certain materials, or the implementation of environmental standards. At other times collective action by a group of countries will be necessary, as when pollution originating in one country affects people living in another. On still other occasions, global action may be necessary, as in the case of global climate change.

185. Because of the diversity of environmental problems it is not possible to quantify targets for an international development strategy for the 1990s. Priorities for the international community can, however, be listed and used as a basis for action. In our judgement the priorities should be as follows:

(a) Restraining land degradation, deforestation and the process of desertification;

(b) Overcoming the shortage of fresh-water resources and reducing water pollution;

(c) Reducing the rate of deterioration of coastal areas and oceans;

(d) Controlling atmospheric pollution;

(e) Regulating the production, trade and disposal of hazardous waste and toxic chemicals.

Each country, no doubt, will have its own environmental problems, its own priorities for dealing with them, its own technical standards and policy measures. But these five problems should perhaps be at the top of the international agenda in the 1990s and merit priority in the search for collective solutions.

## E. Conclusions

### 1. The four themes

186. It was suggested that an international development strategy for the 1990s centre on the four themes of accelerated economic growth, greater concern for human development, a reduction in the number of people living in absolute poverty and the prevention of further deterioration of the natural environment.

187. These themes should be seen not as separate issues, to be addressed one by one, but as four strands of a coherent approach to development policy in the next decade. Faster growth is absolutely essential, especially in those countries which experienced a fall in average incomes in the current decade. Growth is not the end of development, but it is the foundation on which other policies to improve the well-being of mankind rest. One must ask, growth for what? The answer we give is that growth should aim at enlarging the capabilities of people, of increasing their freedom to choose. This implies greater concern with human development as an ultimate objective. Moreover, because of the recent neglect of education, health, nutrition etc., the return on expenditure on human development programmes can be expected to be at least as high as the return on ordinary investment. Human development is thus not only an end in itself, it is also an efficient way of achieving growth. To repeat, the return on human capital is likely to be as high as the return on capital embodied in plant and equipment.

188. But one must also ask, growth for whom? Our answer is that growth, expenditure on human development and, indeed, all social and economic policy should be designed to ensure that the number of people in poverty declines absolutely. This will not happen automatically as a result of faster growth. Nor will it occur automatically as a result of a greater emphasis on human development programmes, although that will help. The reduction of poverty and deprivation also will require positive action, and such action, because of the tendency for severe poverty to increase during the 1980s, should be a top priority for the 1990s.

189. Environmental degradation in the developing world is frequently a symptom or consequence of poverty. Those who possess neither human capital nor means of production often have no alternative but to exploit to the full the natural resources (land, forests, fisheries) to which they have access. Poverty thus is a major cause of the deterioration of the physical environment. At the same time, the deterioration of the environment accentuates poverty. The two processes interact with one another, and there is always a danger that the interaction will be cumulative, producing an accelerating downward spiral of under-development of those who already are impoverished. The sustainability of development for poor people in poor countries often depends on measures to improve the physical environment.

190. In these ways the four strands of the suggested international development strategy interact with and reinforce each other. Each strand is worthy of attention in its own right, but the whole is greater than the sum of the parts.

## 2. Implications for the United Nations system

191. If a new international development strategy is to be meaningful, it must have the full and co-ordinated support of the United Nations family. The entire system - the financial institutions (IMF, IBRD, IFAD, the regional banks), the specialized agencies (UNESCO, WHO, ILO, FAO, UNICEF etc.), the regional commissions and the United Nations Development Programme (UNDP) - should commit itself to harmonizing its separate activities in support of the objectives of the strategy. If the system as a whole believes in the new strategy, then it must take vigorous steps to do what it can to facilitate the implementation of the strategy. One crucial task will be to estimate the costs of attaining all the targets of the strategy for each country.

192. Beyond implementation, there is a need to monitor change. Each country will presumably have its own monitoring system, but the United Nations will have a role to play in collecting information from member countries all over the globe and presenting it in such a way that the findings are comparable and can be readily understood. In some cases, additional work will be necessary to improve existing economic and social indicators and to devise new ones. This can best be done within a United Nations research framework rather than by encouraging each country to go its own way.

193. Monitoring progress is important - Governments, international agencies and independent observers need to know what is going on - but there is no need to set up an elaborate and expensive monitoring and reporting system. What is most important during the next 10 years is to implement the agreed international strategy so that there will be progress to report.

## 3. Towards the year 2000: an international agenda for development

194. An international development strategy for the 1990s will have to address serious deficiencies in the conditions of life for large sections of mankind and also some glaring shortcomings in the manner in which national and international economic systems are functioning and being managed.

195. The challenge is daunting; yet, the opportunity for a decisive advance during the next 10 years is real. A number of favourable developments are already in train: in developed countries growth is real and sustained, albeit modest; in large parts of Asia, major structural changes are proceeding apace and the economic pulse beats vigorously; throughout the world, it appears, policy decisions are taken more pragmatically and there is an opening for a move away from ideological confrontation; in some important respects the "One World" is coming nearer as evidenced, for instance, by the moves towards the integration of the socialist countries into a single global economy; there are indications of a realization in major creditor countries of the need to come to grips with the debt issues which have so devastatingly affected countries in Africa and Latin America in the 1980s; perhaps most importantly, there is a

new climate in international relations which in the 1990s may allow reductions in military expenditures and reallocation of resources at present devoted to armaments to activities which increase material and social well-being.

196. It is possible to be optimistic about the 1990s and yet realistic. A strategy can be firmly founded on the national and international aspirations and activities which characterize today's efforts. The challenge of the 1990s is to maintain and develop this momentum and to exploit the opportunities available. Within an active growth and development strategy, we have stressed the central importance of human resource development, of addressing firmly and consistently the problem of the growing numbers of people living in abject poverty, and of halting the deterioration in the physical environment. We urge that an international development strategy for the 1990s be further developed with a clear focus on these objectives and with a realism which dictates its firm grounding in recent experience, in the current momentum of change, and in the available options for the future.

#### IV. WATER: THE FUNDAMENTAL RESOURCE

##### A. Introduction

##### 1. The importance of water to the earth's life support systems

197. Water is indispensable for the life support systems on earth. Its importance is such that it can mean life or death, prosperity or poverty. It can even be a cause of war.

198. Out of the earth's total water volume of some 1.4 billion cubic kilometres, more than 97 per cent is ocean water, unsuitable for human use. Of the 3 per cent that is fresh, an estimated 77.2 per cent is frozen in ice caps and glaciers. The bulk of the remaining supplies of fresh water, 22.4 per cent, is ground water and soil moisture. Only a very small proportion of it is available as surface fresh water. Some 0.35 per cent of that supply is contained in lakes and swamps, and less than 0.01 in rivers and streams. 44/

199. Water is made available to support life on earth through the hydrological cycle. Every year, about 453,000 cubic kilometres of water are evaporated from the surface of the world's oceans. Approximately 90 per cent of that volume returns to the oceans as precipitation. The remaining 10 per cent, or some 41,000 cubic kilometres, is transported by the prevailing winds over the continents where it combines with some 72,000 cubic kilometres of water evaporated from the land masses to provide a gross continental precipitation of about 113,000 cubic kilometres. It is this annual cyclical flow of water that sustains natural and human ecosystems. More than half of the continental precipitation goes to recharge soil moisture and ground-water flows. The rest ends up in rivers and is returned to the sea to complete the cycle.

200. Fresh water is a renewable resource by virtue of the cyclical flow between sea, air and land. It is also a finite resource, as approximately the same volume is made available each year. At present, there is an annual renewable supply of 8,300 cubic metres per capita, which is equivalent to several times the amount needed to sustain a moderate standard of living of the current population. 45/ On account of variations in climate and the vagaries of weather, however, the hydrological cycle does not distribute water equitably over the continents. Water is not at all plentiful everywhere, and is not always available when and where it is most needed.

201. The amount of water stored in the ground is enormous - between 40 million and 60 million cubic kilometres, which exceeds the amount in rivers, lakes, reservoirs, marshes and the atmosphere combined. However, if water above a depth of 4,000 metres is considered, this estimate narrows down to between 8 million and 10 million cubic kilometres. Furthermore, only a very small proportion of the water is economically exploitable. In much of the developing world, however, the extent and quality of ground-water supplies are rather unknown, as are the costs and technologies needed to tap them.



## 2. Water, land and people

202. Demand for water usually refers to the use of water as a commodity in household and municipal activities or as a factor of production in agriculture and industry. During this century, demand for water has soared with rapid population growth and industrialization, urbanization and agricultural production. Available estimates indicate that between 1900 and 1940, world water use doubled from 400 billion cubic metres, while population increased by about 40 per cent. Between 1940 and 1980, water demand increased at an accelerating rate, to reach about 3,500 billion cubic metres.

203. At present, global annual water withdrawals equal about 10 per cent of the total renewable supply and about a quarter of the stable supply - i.e., what is normally available throughout the year. The bulk of world water use is claimed by irrigated agriculture which accounts for about 70 per cent of total withdrawals. About one third of today's harvest comes from 17 per cent of the world's cropland that is irrigated. Between 1950 and 1982, the area under irrigation increased from 94 million to 261 million hectares. While irrigation has made possible considerable increases in yields, prevailing methods and technologies of irrigation result in considerable waste of water, since a large volume is removed from the local water supply through evaporation, transpiration and losses in distribution systems, and by and large less than half of the water withdrawn for irrigation goes back to a nearby stream or aquifer from which it can be used again. Increasing use of water is expected to continue well into the twenty-first century, led by still increasing irrigation in many parts of the developing world.

204. Industry is the second major water user. It accounts for about a quarter of water use world wide. By far the largest single industrial use of water is in energy production in plants powered by nuclear energy and fossil fuels. Compared to agriculture, industrial water use removes a small fraction of water from the local supply through evaporation and transpiration. Most existing power plants have "once through" cooling systems that send water back to its source immediately after it passes through the plant. Fully integrated water-cycle systems are still rare. The cause for concern in this connection is not so much the volume of water withdrawn but the discharge of heated - and sometimes polluted - water back to its source, where it threatens aquatic life and, through dietary intake, human health.

205. About two thirds of the rest of industrial withdrawals are made by five industries - namely, primary metals, chemical products, petroleum refining, pulp and paper manufacturing, and food processing. Withdrawals for these industries are not likely to increase in those industrial countries with established water pollution laws and conservation policies in effect. Most pollution control techniques recycle or reuse water, thus reducing the demand for new supplies. In point of fact, the specific industrial use of water has declined and will decline further in the future. It is expected, however, to increase in those industrial countries with weak or non-efficient conservation policies, and particularly in the developing countries.

206. In the developing countries, at present, industry accounts for less than 10 per cent of total withdrawals of water. Since most developing countries are just embarking on industrialization, water demands for power generation, manufacturing, mining and materials processing are poised for acceleration, particularly if water-intensive technologies are adopted.

207. Residential and other municipal uses of water (domestic demand) account for less than a tenth of water withdrawals in many countries, and only about 7 per cent of total withdrawals world wide. In industrial countries where population growth is low or declining and where most households are already adequately supplied with water, growth in domestic demand in general is slowing and probably will continue to do so. In some parts of Europe, such as Czechoslovakia, Poland, Portugal, Romania and Turkey, which are converting from community wells to individual piped-water systems, the demand for domestic water is expected to double in the next decade or two. The largest increase in demand for domestic water, however, will occur in the developing countries, where fresh-water supplies are not yet generally available in sufficient amounts and quality.

208. Estimates indicate that in many developing countries where water is supplied through a public stand post, daily usage ranges between 20 and 70 litres per person. In areas where women walk long distances to draw water, usages are close to the biological minimum of 2-5 litres per person daily. The fact that water-borne diseases are widespread in developing countries has directed world-wide interest towards mitigating unhealthy conditions by providing safe water close to the house in amounts adequate to maintain decent standards of hygiene. To achieve such standards, many people need to use considerably more water than they do at present. 46/

209. In the hope of avoiding a future water crisis of global dimensions, the United Nations Water Conference adopted the Mar del Plata Action Plan in 1977, which led the General Assembly to adopt resolution 35/18, in which it launched the International Drinking Water Supply and Sanitation Decade (1981-1990). During the Decade, which is now drawing to a close, appreciable progress has been made in bringing fresh water and sanitation services to people in developing countries. Available figures indicate that on the average more than 190,000 people per day will have gained access to safe drinking supplies from 1981 to 1990. New and improved water supplies have been provided to over 690 million people during the course of the Decade, and the pace of construction of new facilities has increased threefold. Improved sanitation facilities have reached an average of over 115,000 additional people per day. Despite these accomplishments, however, the ambitious task of providing water and sanitation to all has remained largely unmet.

210. By 1990, the total number of unserved people in the developing countries (excluding China) is expected to be 1.2 billion in need of safe water supply and 1.8 billion in need of sanitation facilities, out of a total population of 2.9 billion. 47/ The reasons for the shortfalls are many and vary from region to region, but economic stagnation, budgetary constraints, growing urbanization, continuing population growth, and inefficient water management seem to be the key hindrances.

211. In spite of the large increases foreseen in water withdrawals for irrigation, industrial and domestic uses, total use world wide by the year 2000 is still likely to be less than half the stable renewable supply at the global level. Projections made by hydrologists indicate, however, that meeting demands by the year 2000 could require virtually all the usable fresh-water supplies in North Africa and the Middle East. Use in southern and eastern Europe and central and southern Asia could also closely approach the limits of available supplies that can be safely tapped.

### 3. Water in the context of an international development strategy for the 1990s

212. By the year 2000 world population will exceed 6 billion and forecasts for the year 2150, when population growth is expected to have nearly ceased, indicate a population of the order of 10 billion-12 billion. Already, with a world population of 5 billion, water is a scarce resource in many parts of the world. Some 80 countries with 40 per cent of the world population suffer from serious water shortages. <sup>48/</sup> Therefore, it is evidently high time that a global water resources strategy for the 1990s and beyond be formulated and implemented by all countries. This has been recognized by the Economic and Social Council, which requested the Secretary-General of the United Nations to report to the Committee on Natural Resources in 1989 on progress made in the formulation of such a strategy, which is to be formulated by the Committee in 1991, for consideration by the Council.

213. Water resources development and management need to address not only the existing constraints imposed by the hydrological cycle itself but also those induced by rapidly growing water demands for health and sanitation, industry and agriculture, by ongoing land degradation in catchment areas and irrigation fields, by water quality degradation, by natural hazards such as floods and droughts, and by conflicting interests of riparian countries sharing international river basins. In brief, the overall aim of the strategy for the future should be to ensure sustainable development. And here, the strategy should serve as an effective means for raising the awareness of Governments and the public in general as to the seriousness of the water problems and the need for concrete measures at the local, national and international levels.

### 4. Sustainable development: need for active water resource management

214. The growing world population and the need to provide safe drinking water and adequate sanitation in poor countries, on the one hand, and the threat of increasing environmental degradation, on the other, have become universal causes for concern. There is a growing awareness the world over that even as a high proportion of the world population is struggling to meet basic needs, the present way of life is not sustainable. In the industrialized and the developing countries water and land resources are being degraded. Both surface and ground water are becoming widely polluted, and land productivity is being reduced by widespread salinization, waterlogging, soil erosion and desertification. These adverse trends have led the World Commission on Environment and Development (Brundtland Commission) to issue a strong call for sustainable development. Such development implies the need for efforts to ensure that development meets the need of the present generation without compromising the ability of future generations to meet their own needs. The basic objectives of water management should thus be to ensure increases in productivity, protect health and the quality of life, minimize the effects of natural hazards and pollution and preserve the environment for the future.

215. Thus far, water management has generally evolved in response to certain problems. Sustainable development requires that adverse impacts on the quality of water and land be avoided or at least minimized if the ecosystem's overall integrity is to be sustained. Therefore, projects aimed at exploiting water resources for all end uses, and particularly for large projects, must carefully take into account the resulting economic, social and environmental impacts. Such

comprehensive assessment is often not undertaken or is insufficient. When water-cycle constraints and processes are better understood, many of the effects of interventions with the natural environment can be predicted and prevented at the planning stage of a project. Since development and the use of water and land resources are strongly interrelated, what is particularly needed is integrated land and water management.

## B. The water problem

### 1. Water scarcity

216. Water scarcity is basically the result of two phenomena - limits imposed by the availability of raw fresh-water resources, and limits generated by the development of land and water resources. Four different types of water scarcity may be distinguished. Two of them are natural - aridity and drought. The other two are induced by man - landscape desiccation, which reduces accessibility to water, and water stress, which results from high levels of competing demands for water. The phenomenon of water scarcity is increasing rapidly, with a growing world population, urbanization and the process of economic growth.

217. The availability of fresh-water resources per capita varies widely from place to place and region to region. Asia and Africa are the two continents facing the greatest water stress.

218. In Asia, water supply per capita is less than half the global average, and the continent's run-off is the least stable of all the major land masses. In India, for example, 90 per cent of the precipitation falls between June and September, and the bulk of the run-off flows into the Ganges and the Brahmaputra basin in the north. Western Asia is semi-arid to arid and is generally characterized by limited availability of water resources. Even under existing patterns of water use, the amount of water needed for various purposes will most probably double between 1980 and 2000. <sup>49/</sup> Several countries, such as Bahrain, Democratic Yemen, Kuwait and the Syrian Arab Republic are now, or are expected to be by the year 2000, at a point where total demand for water will either equal or exceed the available supply.

219. In Africa, the Zaire (Congo) River, which accounts for about 30 per cent of the continent's renewable supplies, flows through sparsely populated rain forest. Two thirds of the African countries have at least one third less run-off than the global average. By and large, however, the situation in the continent is one of under-development of water resources relative to needs and potential, and uneven distribution of water resources. In addition to the Zaire, Africa is endowed with the Nile, the longest river in the world, and large fresh-water lakes such as Lake Victoria, Lake Tanganyika, Lake Chad and Lake Turkana. It also has, however, some of the largest deserts in the world, including the Sahara in the north and the Kalahari in the south. In general, ground-water resources are known to exist in almost all parts of the region, but reliable quantitative estimates are not available. <sup>50/</sup>

220. In North and South America and the Soviet Union, water resources appear to be abundant in relation to demand, but wide disparities exist from place to place. Some 60 per cent of the run-off of South America, the most widely endowed continent, flows into the Amazon, far from settled areas. Per capita water supply in North and Central America is approximately twice the global average, but natural

supplies are limited in the southern part of the United States and in northern Mexico. The three largest rivers of the Soviet Union - the Yenisei, the Lena and the Ob - flow north through Siberia to the Arctic seas, remote from major population centres.

221. Like Asia, Europe has a substantially greater share of the world's population than its supply of fresh water. The continent's per capita run-off is only half the global average, and supplies are especially short in southern and eastern Europe. The larger part of the continent, fortunately, is endowed with a generally temperate climate and many small rivers with steady flows, which enable a relatively high proportion of the run-off to be tapped, though with increasing treatment costs (for purification).

222. Many areas of the world are semi-arid, having a climate whose rainfall variability is devastatingly high and droughts a recurrent feature. The largest contiguous region with the highest variability of rainfall (of over 40 per cent) consists of north and sub-Saharan Africa, the Arabian peninsula, southern Iran, Pakistan and western India. Similar high variability is also characteristic of the south-western United States, northern Mexico, south-western Africa, eastern Brazil and Chile, and large parts of tropical and sub-tropical Africa. In the Sahel, rainfall is not only unreliable but has actually been on the decline. There is less rainfall today than 50 or even 30 years ago.

223. The limits set to fresh-water availability by nature have been exacerbated by man. Population growth and the expansion of irrigation and industrial use of water have led to intensive development of water and land resources which, because of improper management, has given rise to various types of water problems and land degradation.

224. Population pressure on the land in some parts of the world has led to reckless deforestation of upland watersheds, which has caused soil erosion and both droughts and floods. As a result, an estimated 6 million hectares of dry land turn into desert each year. One major effect of deforestation is that the return flow of water to the atmosphere from wet foliage and from transpiration is interrupted. The water is thus left for infiltration and/or direct run-off.

225. In Australia, for instance, the clearing of woodlands has resulted in a slow but continuous rise in the water table in large areas of the south-west. In Malaysia, the conversion of natural forests to rubber and palm oil plantations has doubled peak run-off and cut dry season flows in half. In the Amazon basin, the massive deforestation occurring at present is expected to generate large-scale and probably world-wide perturbations in hydrological conditions, such as reduced evapo-transpiration (and therefore increased flood run-off) and reduced precipitation. Though not easy to quantify with any accuracy, it is estimated that deforestation at the current rate of some 15 million hectares a year, is reducing run-off in the developing world by as much as expensive new dams and reservoirs are augmenting it.

226. Irrigation, the major water user, is also contributing to water scarcity. Water used for irrigation, whether harvested from aquifers or rivers, is partly transferred to the atmosphere. Only excess water is returned to the river basin. A major example of such irretrievable loss to the river system is the falling water level of the Aral and Caspian Seas. Moreover, in several regions where surface-water availability is scarce, irrigation has necessitated ground-water

mining. In this way, more water has been extracted from aquifers than is recharged naturally. For instance, in the United States, degraded aquifers have been found all over the country and are threatening a lucrative farming economy. Excessive ground-water pumping is taking place in several other areas of the world, such as southern India, northern China, Israel, the Syrian Arab Republic, and the Arabian Gulf States.

227. Given existing climatic conditions and current population projections, it is estimated that the per capita global water supply will decline by one quarter per cent by the end of the century. Furthermore, if the projected climate change from the rising concentration of atmospheric carbon dioxide materializes, water supplies will diminish in some areas already chronically short of water, including major grain-producing regions of north China and the United States. (They may, however, increase in other areas.)

228. In 1975, at least 19 developing countries had to cope with natural water supplies of less than 500 cubic metres per person per year. This would translate into some 200 cubic metres or less of actual availability, taking into account losses incurred in the process of tapping and harnessing the natural supplies for particular uses. By the year 2000, an additional 10 countries could find themselves in a similar situation, and by the year 2025 a further eight would be added to the list. In addition to those 37 countries, another 16 would have less than 1,000 cubic metres per person per year available and could thus be regarded as approaching a situation of severe scarcity. 51/

229. One driving force causing more and more countries to experience water shortages is rapid population growth, since the overall flow-supply of water is more or less constant - with changing local availability. Anywhere from 15 to 25 northern African and sub-Saharan African countries may face serious problems with water shortages - in the sense of inadequate average per capita water availability - by the year 2025. Most of them are countries whose agricultural sectors need higher-than-average inputs of water and fertilizer for food self-sufficiency. In such cases, the household and industrial sectors will compete strongly with the agricultural sector for the limited quantities of water available, thus making food self-sufficiency an elusive goal.

## 2. Water quality

230. Concern about water resources relates not only to its quantity but also - and even more so - to its quality. Water bodies throughout the world are becoming increasingly subject to a variety of pollution sources, with sometimes irreversible consequences. The degradation of water resources is attributable to such factors as expansion of ill-managed irrigation; excessive use of fertilizers and pesticides; the discharge of industrial wastes and untreated sewage into surface-water bodies; domestic waste and toxic chemical dumps; and air pollutants. The pollutants are of various types, such as organic compounds, inorganic salts, metals, nutrients, particulates, gases, radio-nuclides, heat and micro-organisms.

231. The pollution sources are either "point" or "non-point". Point sources are discrete "end of pipe" discharges, industrial waste-water effluent or waste from a municipal sewage system. Non-point sources have an impact over a diffuse area, are mobile and thus less amenable to control.

232. Mismanagement of irrigation has caused widespread water-quality problems such as salinization, alkalization and waterlogging, in both developed and developing countries. It is estimated that waterlogging and salinization are sterilizing between 1 million and 1.5 million hectares of fertile soil annually. The problem is particularly severe in India and Pakistan where an estimated 12 million hectares have already been degraded. Moreover, drainage and run-off from fertilized crops, certain heavy organic loadings, sediments, micro-organisms, and high concentration of nitrogen and phosphorous nutrients washed away into low-lying streams, rivers and lakes are contributing to oxygen depletion, eutrophication, and undesirable growth of aquatic plants and weeds. Excessive irrigation and the all too frequent postponing of the drainage aspects of irrigation projects to a later stage due to short-term financial difficulties are being transformed into long-term resource depletion.

233. One of the most acute problems is caused by increasing infusion of nitrates into drinking waters, leading to possibly serious threats to human health. This problem is already widespread in areas of intensive agriculture in Europe and is manifesting itself in the United States and the USSR. The increasing use of fertilizers in the developing countries would imply that similar problems can be expected there also.

234. The fouling of watercourses and lakes by industrial waste and sewage has proceeded apace since the Second World War. All over the industrial world, waste-water treatment facilities have been put into place in recent years at considerable cost. Consequently, river-water quality has improved in some cases, although long stretches of numerous rivers still remain heavily polluted. Rivers are becoming increasingly polluted by untreated discharges of industrial waste. Despite increased municipal-water treatment in the industrial world, lakes and rivers have been undergoing increasing eutrophication. This type of pollution is caused mainly by the run-off of pesticides, herbicides and fertilizers from agricultural lands. Since the 1950s, there has been a substantial increase in the concentration of phosphates and nitrates in the inland water of several countries, particularly in North America and Europe. Two of the most spectacular cases of eutrophication are Lake Balaton in Hungary and Lake Lemán in Switzerland. Eutrophication is also a major problem in certain sources of community water supply, such as artificial lakes and reservoirs, especially in several countries in Latin America.

235. Pollution of inland bodies of water thus is not restricted to industrial countries but is a growing problem throughout the developing world, where pollution control is either non-existent or unable to keep pace with the increasing environmental impacts of production and consumption. Agricultural expansion has had considerable adverse impacts on water quality. Growing urbanization and industrialization have caused more damage. Most urban centres in the developing countries lack adequate facilities for the collection and disposal of domestic and industrial wastes. This results in urban run-off highly polluted with pathogens and organic materials which may have a serious impact on the quality of nearby surface waters and shallow ground waters. A glaring example is Mexico City where more than 15 million people are already concentrated in an area of only about 425 square miles. <sup>52/</sup> There and in many other cities of the developing world, open sewers and surface run-off after rain create "rivers of sewage" which contaminate local water supplies.

236. Over the past few decades there has been a rapid increase in the number of industrial plants - and in attendant water pollution - in urban centres in developing countries. In Latin America, for instance, there are many new urban industrial complexes producing petroleum, petrochemicals and steel. Oil- and gas-processing cities have mushroomed in the Middle East. Energy, chemical and metallurgical industries have expanded rapidly in urban China, and so have heavy industries and steel processing and petrochemicals in urban India.

237. The major industries in the traditional sector of the developing countries responsible for causing widespread water pollution are those which process primary products such as sugar, oil seeds, minerals, coffee, hides and oil palm. The classic example is India where 70 per cent of the total surface waters are thought to be polluted. In China, of 78 rivers monitored, 54 are reported to be seriously polluted with untreated sewage and industrial waste. Numerous Malaysian rivers are becoming ecological disasters; more than 40 of them are so polluted that they are devoid of fish and other aquatic animals.

238. Water quality is also degraded by air pollutants. Sulphuric acid and anions of other strong acids from electric power plants using fossil fuels, automobile exhausts and agricultural wastes carried by atmospheric moisture pollute the rain water, thus affecting the soil and water bodies. The consequences of transboundary air pollution are particularly severe in northern Europe and north-eastern America. Tens of thousands of lakes in Sweden, Norway, the north-eastern United States and Canada have turned acid, with particularly severe harmful effects for fish populations.

239. Awareness and knowledge on ground-water pollution has increased in recent years. The causes of ground-water pollution include seepage from land fills, leaking septic tanks, cesspools, waste and toxic chemical dumps, and run-off from fertilized fields. A high concentration of nitrates in ground water, far above the allowable concentration in drinking water, is considered the worst form of ground-water pollution in parts of Europe and North America. Moreover, for instance, in the United States, 10-20 per cent of 10,000 identified dumpsites for hazardous waste are considered an environmental threat. In the Federal Republic of Germany, about 1,000 such dumpsites are being identified. The problem, however, is not restricted to the industrial countries. Although information on the quality of ground water in the developing countries at present is still very meagre, it is quite likely that pollution is on the march under the soil surface all around the world.

### 3. Major impacts of the current and prospective water situation

240. In view of the vital importance of water to life and economic and social progress, the rapidly increasing water scarcity, due to declining per capita fresh-water supplies, and degradation in water quality, due to pollution, pose major challenges in the coming decade and beyond.

241. Many countries in the semi-arid zone are among the poorest in the world. In some of them, water is likely to become a serious constraint on socio-economic development. While enlarged irrigation systems will be necessary there in order to achieve a satisfactory level of food production, the demand for water for domestic and industrial purposes will also grow, thus increasing competition among various uses. Even now many of these countries already suffer from severe water penury and



are unable to supply safe water for drinking and sanitation purposes to the bulk of their populations. Each year an estimated 12.4 million deaths occur from unsafe water and dirt-related diseases. Poor environmental sanitation is a critical link in the chain of diarrhoeal diseases that affect young children in developing countries and accounts for the majority of deaths in the 0-5-year age group. 53/ Contributing factors are unsafe and insufficient water supplies and the lack of safe means of human waste disposal. Consequent health problems created by those conditions include gastro-intestinal, viral and bacterial infections, skin and eye diseases, and various intestinal parasitic infestations that drain an already limited food intake and aggravate malnutrition.

242. If current trends persist, deforestation and irrigation will continue to deplete resources and increase environmental degradation. Deforestation has influenced precipitation in upland areas and the manner in which precipitation is released into streams, rivers and the cropland below. The growing number of floods and droughts in some parts of the world are also linked to deforestation. Moreover, soil and wind erosion due to deforestation depletes the soil of its nutrients, reduces the depth available for roots to take hold, and thereby reduces land productivity. When the soil is carried away to rivers, lakes and reservoirs, ports and waterways become silted up, the capacity of reservoirs declines and the severity of floods increases.

243. The mismanagement of irrigation has led to the sterilization of some of the best and most productive soils. It is estimated that because of waterlogging, salinization and alkalination, large areas of irrigated land are being abandoned each year. In the United States alone, some 20-25 per cent of all irrigated land, or 4 million hectares, suffer from salinization. The problem is widespread in eastern and western China, the Indian subcontinent, central Asia and Asia Minor, the Aral/Caspian lowlands, the Caucasus, south-eastern Europe, the Middle East, north and west Africa and the plains of North and South America. Excessive pumping of ground water also has disastrous long-term consequences for agriculture in many parts of the world. Globally only about 0.1 per cent of the total reserves of ground water are estimated to be rechargeable and can be exploited on a sustainable basis.

244. Water pollution is translated into a higher order of threat to flora, fauna and human beings. The growing incidence of pollution has had wide-ranging adverse effects on man and the environment. Contamination of water supplies is posing health risks and is drastically increasing the costs of water treatment facilities. Polluted inland water bodies and seas are causing fish-kills or a decline in the productivity of fisheries. They also increase health risks from the consumption of fish caught in those waters. Polluted irrigation water also is posing health risks and is undermining long-term crop productivity. Water pollution in general is also degrading the recreational and aesthetic aspects of water, sometimes causing odour-nuisances and prohibiting access to water areas.

### C. Major fields of action

#### 1. Managing the demand for water

245. In order to ensure that the finite amount of water that is available in the hydrological cycle is adequate to meet the still growing demand for water, it is absolutely necessary to reverse past trends in water consumption, find innovative

ways of conserving water and develop new water supplies. Both the development of water resources and the use of water - i.e., the supply side and the demand side of water - need to take into account likely adverse impacts on the environment generally and on land resources in particular. Economic activities and municipal use of the water need to ensure that bodies of water are kept free of pollutants so that the stock of water is available for careful use.

246. The most immediate course of action must centre on water conservation, through rational utilization of water resources and technical innovations. In many industries much of the water used for cooling and other processes does not need to be of drinking quality. A large proportion of water initially withdrawn for industrial purposes can be recycled several times before it is finally disposed of. The efficiency of water technology can be increased further by such means as totally integrated water-recycling systems. In several industries such as iron and steel and even mining, it is now economically feasible to recycle water. The paper and pulp industry, which has long had the reputation of being one of the largest consumers and polluters of water, is yet another sector where successful efforts have been made to recycle water after use. For the manufacturing industries, the cost of water on average is only about 3 per cent of total costs. Because of the low cost, incentives for using water more efficiently must come from strict water allocations, stringent pollution control requirements or through water-pricing policies. In the industrial world, greater attention has recently been paid to re-using and recycling treated waste water. This practice, however, is not yet universal. Re-use of waste water has been advocated mainly for non-potable purposes, such as agricultural irrigation, cooling, and industrial in-plant recycling.

247. Developing countries are well and probably even better placed than old industrial countries to take advantage of new recycling technologies, because installing water efficiency and pollution controls into new plants is much cheaper than retro-fitting old ones. Some of the technologies available are capable of reducing water use and waste water flows by up to 90 per cent. Information on these technical options should be disseminated systematically. Technology transfer thus could contribute to alleviating water supply and pollution problems in the emerging industrial countries. While the scope for waste-water re-use so far is relatively small in developing countries, since many of them do not have sewerage systems that collect the used water, there is large scope for building new industries with water recycling systems. Moreover, domestic waste water could be collected and used after treatment for agricultural purposes.

248. The need for raising the efficiency of irrigation is even more compelling, since irrigation claims the bulk of most countries' water supplies and is generally rather inefficient. Saving even a small proportion of the water used in irrigation will free a large absolute amount of water for other needs. Increasing the efficiency of irrigation would call for improvement in technical infrastructure and adoption of more efficient management methods. For instance, lining irrigation canals can save water by minimizing seepage. Even more effective would be avoiding the use of more water than is necessary, through the assessment of water needs for crops in various places, education of farmers on optimal use of water, and adoption of more efficient irrigation technology.

249. It appears that drip irrigation is the most efficient method. Given the wide range of efficiency for the various other systems - some 40-80 per cent for gravity flow, 75-85 per cent for a centre pivot sprinkler, and 60-92 per cent for a drip

system - use of more efficient methods needs to be combined with sound management in order to ensure the best test result. Farmers could also reduce water withdrawal by scheduling their irrigation according to the actual weather conditions, evapo-transpiration rates, soil moisture and water requirement for particular crops. Co-ordination of the use and management of ground water and surface water can significantly increase the total efficiency of irrigation water in particular agricultural regions. Other available options to reduce the pressure of the demand for fresh water are the use of brackish water and the use of treated waste water for irrigation of salt-tolerant crops and for supplying certain industrial users. Brackish water for irrigation already plays a certain role in some countries, particularly in western Asia.

250. The municipal use of water, including household use, is much less than agricultural or industrial. Storing, treating and distributing municipal water and collecting and treating the resulting waste water is, however, increasingly costly and may in some cases entail large capital investments. Conserving water and increasing the efficiency of municipal water use would ease the financial burdens by enabling water and waste-water utility companies to scale down the capacity for new plants, water mains and sewer pipes and also cut energy and other costs for purification technology associated with municipal water supplies. Efficiency of use can be increased by reducing losses in the distribution system and by improving household fixtures and appliances, especially flushing toilets, dishwashers and washing machines.

## 2. Augmenting water supplies

251. The availability of fresh water in a region can be augmented by cutting loss through evaporation, by means of underground storage instead of storage in surface-water reservoirs. The costs, while high, seem reasonable compared to alternative schemes. At present, more than 20 countries have projects to recharge ground water artificially, but in only a few of them has the practice been implemented on a large scale. Underground water storage may hold special potential for developing countries subject to the destructive flooding and perennial dry spells of monsoon climates. Many aquifers are recharged unintentionally by seepage from irrigation canals. In such cases, managing ground water in conjunction with surface irrigation water, without developing additional surface-water sources, might help to prevent waterlogging and salinization and make possible the expansion of the irrigation area.

252. Several, though not too many, technically feasible and economically viable new options are available for increasing fresh-water supplies. Of the non-conventional ways, such as seeding clouds to induce precipitation, towing icebergs, desalting sea and brackish water and transporting water by tankers, the latter two appear to hold the greatest near-term potential. As a matter of fact, with the oceans holding 97 per cent of all the water on earth, desalination of sea water might eventually offer the solution to a limited renewable supply of fresh water. Several desalination technologies, such as distillation, electrodialysis and reverse osmosis, have been developed, but since they are highly energy-intensive, they are so far too expensive for use except by countries that have non-marketable supplies of natural gas or islands that depend on tourism for a large share of their income. Transporting large quantities of water by tanker has become more common in recent years, as the unit cost of such transport has declined. Moreover, the current glut in the oil market has put a good proportion of the tanker fleet

out of operation. These developments have provided an incentive for oil shippers to transport water to arid areas on their return voyages in tankers especially equipped with ballast tanks, but this has still not been done on a long-term or large-scale basis.

253. Besides augmenting water supplies indirectly through conservation and by direct means, as discussed above, another major field of action must be stricter pollution control. As explained above, pollution control goes hand in hand, to a large extent, with water conservation in industry, agriculture and municipal water management. However, additional measures are needed, particularly to avoid eutrophication of surface and ground water through careless use of fertilizers and other chemicals in agriculture and to prevent pollution of water through long-range, transboundary air pollutants. Avoiding water pollution obviously means preventing hazardous pollutants from getting into bodies of water. In developing countries, controlling pollution caused by polluted municipal water and industrial waste water will pose a major challenge, in part because of the general lack or inefficient functioning of sewerage systems. Ground-water pollution is also becoming more serious, and poses serious risks to human health. These problems will have to be tackled, however, in order to prevent an already bad situation from getting worse.

### 3. Providing safe drinking water and sanitation facilities

254. In the developing world, although increasing efficiency in the use of household and municipal water is necessary, expanding the quantitative supply of water for drinking and sanitation purposes is of utmost importance. During the International Drinking Water Supply and Sanitation Decade (see para. 109), much effort has been directed towards supplying drinking water and sanitation facilities in urban areas. The coverage of urban areas (excluding China) in terms of drinking water supply is likely to reach 78 per cent by 1990, as compared with 76 per cent in 1980, and in terms of sanitation services, 67 per cent by 1990, as compared with 56 per cent in 1980. This accompanies an estimated 49 per cent increase in the urban population of developing countries (excluding China). During the same period, the percentage of the rural population supplied increased from 31 to 49 per cent, while the total population rose by 17 per cent. As far as rural sanitation is concerned, the percentage in the developing countries with adequate services is expected to increase from 14 to 18 per cent by 1990.

255. Progress achieved with regard to drinking water and sanitation varies significantly from region to region, albeit for different reasons. In Africa, because of the rapid growth in urban population - from 158.5 million in 1985 to a projected 332 million by the year 2000 - progress in providing water and sanitation services has been particularly slow. On the basis of current trends, the number of urban dwellers without an adequate supply of water may even increase, from 25.7 million in 1980 to more than 87.4 million by the year 2000, while the number without adequate sanitation may rise from 41 million in 1980 to as many as 106 million by 2000. The drinking water supply in Africa is expected to remain inadequate for about 50 per cent of the rural population, or about 240 million people, while about 350 million people might be without adequate sanitation facilities by 2000. 49/

256. In the Asia and Pacific region (excluding China), the urban population provided with adequate water supply is expected to double between 1980 and 2000.

Nevertheless, the number of urban dwellers without an adequate supply of drinking water is estimated at some 300 million people, out of an estimated urban population of 763 million. In spite of the fact that urban sanitation coverage has risen at a faster pace than population, the number of urban dwellers without coverage could be as many as 450 million by the year 2000. Progress in the rural supply of water seems to have been quite significant. On the basis of current trends, it is expected that in Asia and the Pacific, as many as 78 per cent of the rural population could be supplied with at least minimum water requirements. Progress in the provision of rural sanitation, however, has been slow. By the year 2000 as many as 1.2 billion people out of a population of some 1.4 billion might be without adequate sanitation facilities.

257. In Western Asia, urban dwellers are expected to achieve full drinking water and sanitation coverage by 1990. However, only 57 per cent of the rural population are expected to have adequate drinking water, as compared with 48 per cent in 1980. At the current pace of expansion, service coverage will have reached 60 per cent of the population by the year 2000. With regard to sanitation, no real progress seems to have taken place in the region, and the number of rural dwellers without adequate services may actually have increased.

258. In Latin America and the Caribbean, efforts at improving water supply and sanitation coverage started earlier than in the other developing regions, with emphasis on urban coverage. By 1980, an estimated 83 per cent of the urban population had water supply services, and 74 per cent had been provided with sanitation facilities. In sharp contrast, coverage of rural areas remained low - 41 per cent and 11 per cent, respectively - for water and sanitation. In spite of the progress made in the 1980s, large pockets of the urban poor in the region remain without adequate water and sanitation services. By the year 2000, in view of the rapidly expanding urban populations, the number of urban dwellers without an adequate supply of drinking water is expected to rise to 45 million, from 40.5 million in 1990, and the number without adequate sanitation might remain unchanged at some 60 million. With regard to the rural population, at the current rate of progress, coverage will have reached 56 per cent and 31 per cent, respectively, for water supply and sanitation.

#### 4. Managing natural hazards

259. Yet another major field of action is the management of natural hazards, particularly droughts and floods. The occurrence of droughts has become more frequent, causing breakdowns in agricultural and pastoral systems, widespread dislocation of communities ("environmental refugees") and substantial losses of human lives and livestock in many parts of the world, particularly in Africa. There is an obvious need for drought management, using the accumulated experience of countries that in the past have successfully coped with drought. Likewise, measures to arrest desertification are urgently needed in order to prevent further depletion of land resources. Flood control is another area that calls for effective action world wide, particularly in many developing countries, where crippling damage caused by floods frustrate efforts to break the vicious cycle of poverty. Where the incidence of floods is particularly severe, such as in Asia, Latin America and the Caribbean, in addition to short-term damage control measures, long-term structural measures are needed, such as multipurpose dams to control and store the flows etc.

#### D. Water policies

##### 1. Major conflicts among objectives

260. The objectives of water policies vary to some extent from country to country, but the main objectives are universal. They include developing new water resources, preventing water pollution, conserving water resources and satisfying present needs without undermining future needs ("sustainable development").

261. In the developing world, the provision of safe drinking water and water for sanitation purposes remains a priority policy objective. At the same time, competition is growing from other sectors, mainly agriculture and industry. To meet growing national demand, it will therefore be necessary to find ways and means of accelerating water resources development. This will require, *inter alia*, an improved administrative and institutional capability for assessing national water availability and projecting future sectoral demands. Optimal allocation will require the establishment of sectoral priorities and more effective allocative mechanisms, particularly water-pricing and/or rationing systems (allocation via price or via quota).

262. Competing demands for water are growing in different regions, and particularly between the urban and rural sectors. The urban/rural conflict has actually existed all along in most developing countries. The rural sector in general is more difficult to supply with safe drinking water and sanitation facilities. Because of the costs involved, reliance on large, expensive projects is unlikely to meet rural needs. Dependable supplies of water for drinking and sanitation as well as irrigation might be better achieved in rural areas through smaller projects, using ground water or protected sources from local catchment areas, and through community action, particularly grass-root organizations. In general, the scarcity of public finances seems to require that policy be geared towards greater community participation in water resources development and management and towards full or at least partial cost recovery. Cost recovery through some form of water-pricing would help achieve several goals simultaneously, such as efficient allocation of water, water conservation and pollution prevention.

263. Sustainable development will call for avoidance of water pollution and land degradation. A number of options are available to Governments for preserving an ecological balance in rivers and streams and avoid land degradation. Preventive action and anticipatory strategies against pollution are generally to be preferred to costly pollution clean-ups and curative measures, which would have to be subsidized by the State. In particular, irrigation and the use of fertilizers and other chemicals need to be rationalized if harmful effects on water, land and people are to be prevented. Where private interests do not coincide with social interests, Governments can invoke the "public trust" doctrine to prevent likely damage by private agents. Where demands are already at the limit of available supply, strict regulations are necessary to put water on a sustainable footing.

264. A number of industrialized countries with semi-arid climates have nearly developed their water resources to the maximum. Notable examples are parts of the United States and the USSR. In these places, prospective supplies from additional storage or diversion schemes are no longer enough to increase the dependable supply to a level corresponding to foreseen demand. For instance, Siberian rivers may be able to supply only 25 per cent of the foreseen water deficiencies; the Central

Arizona Transfer Project in the United States will rectify only half of the over-exploitation of the regional aquifers now being depleted.

## 2. Evaluating the costs and benefits of alternative solutions

265. In many parts of the developing world, the supply of water is limited not so much by nature but by lack of adequate, well-maintained infrastructure. Where an increased supply is necessitated by an increase in population, new infrastructure will obviously have to be built. Because of the high cost of building infrastructure, however, the first step should be to rehabilitate infrastructure that is in a state of disrepair or not usable. Moreover, Governments should ensure regular maintenance of existing infrastructure, since it is less expensive than costly overhaul of dilapidated infrastructure.

266. Many Governments still rely on the construction of conventional dams and large diversion projects to relieve regional water stress and water shortage. However, such projects, with their engineering complexities, threats of ecological disruption, multibillion-dollar price tags, and long lead times, do not offer much hope that water will be delivered in time and at reasonable cost. In the developing world, unless deforestation and erosion are stopped and irrigation systems better managed, large projects may waste capital, undermine the productivity of the soil and also displace the indigenous population. Furthermore, even the most ambitious schemes will not definitively solve regional water problems. The best any dam or diversion project can do is to slow down the depletion of supplies or delay the occurrence of shortages. In such cases, it would be much less costly to encourage the growth of human settlements in places where adequate water supplies are available or effectively reduce water demand through demand management.

267. Recently, the cost/benefit issue has led to analysing irrigation investments in terms of grain prices needed to cover costs. In developing countries, capital costs for large-scale irrigation projects typically amount to some \$5,000/hectare, whereas those for small-scale projects such as tubewells and line lift pumps amount to only \$1,000/hectare. In view of the cost differential, large incremental grain yields would be required to justify large-scale systems.

268. In the past, large projects have contributed only 1/3-1 ton/hectare in yield increase as against a requirement of 2.5-15 tons/hectare to justify costs. It is therefore preferable both from the ecological and economic points of view to concentrate more efforts on irrigation systems that involve low capital costs.

## E. Measures to improve water resources management

### 1. Strengthening the information base and improving information exchange

269. The inadequacy of meteorological, hydrological and hydrogeological data is a world-wide problem, especially in developing countries. So long as systematic and reliable data are not available, the design of water projects and the use of water resources will be haphazard, and the waste of resources and loss of lives will continue.

270. The need for a better and more comprehensive information base cannot be exaggerated. It goes without saying that planning major investments in water resources development needs to be based on a thorough understanding of the natural resources available and the forces that are harnessed and controlled. This cannot be done without a good information base containing historical and current data on such factors as variability of rainfall, evaporation, underground water, floods and droughts.

271. Hydrological forecasting, which is of enormous economic and social importance, relies on prior knowledge of how river basins and river channels would respond to precipitation of varying intensities and durations. This calls for a study of past records of rainfall, snowfall and river flows and for the determination of relationships among the various factors. More accurate hydrological forecasting can save substantial amounts of resources, while inaccurate forecasts can cause both loss of lives and waste of resources. 54/

272. To build sound storm-drain and sewer systems, culverts and bridges, data on the frequency and intensity of rainfall and the flow of rivers are needed. Engineers designing a major dam must know the extent of spill-over that must be built into it so that the structure will not be endangered by large floods. They must also have accurate knowledge of water loss by evaporation so that water is available during dry periods, but the height and therefore the cost of the dam are not excessive. To avoid disastrous effects of changes in land use, it is important to assess the possible effects on stream flows and the water balance of a particular drainage basin. In designing irrigation systems, it is essential to know the amount of water needed to keep the soil moisture at the optimum level and to estimate the amount of water required during the irrigation season to prevent crop failure. Greater economies can be achieved in the use of water if reliable forecasts of rainfall can be made available in advance etc.

273. Better data are also needed on ground-water recharge. In humid zones where ample amounts of water are generally available, the main problem in ground-water development is to determine where to construct a well in order to tap the water needed. In dry climates, the rate of recharge of an aquifer has to be estimated first so as not to over-exploit its potentials for ground-water delivery. Without this information, one runs the risk of quickly depleting the resource.

274. Gathering information on water resources is not a once-and-for-all effort, since climatic variables are subject to fluctuation. Internationally, variability tends to be much larger in dry regions where precipitation is scarce than in better endowed humid regions. Furthermore, fluctuations in run-off tend to be a multiple of fluctuations in precipitation. Consequently, arid and semi-arid regions are extremely sensitive to climatic variability. This sensitivity poses serious problems to decision makers who lack adequate empirical data.

275. Data on completed projects also need to be collected so that the various economic, social and environmental effects can be continuously monitored and evaluated. In that way, mistakes in other projects may be avoided. Site-specific information-gathering on various aspects of water resources must be supplemented through improved exchange of information, particularly between similar climatic regions. Certain problems - the continuing incidence of salinization and waterlogging, for instance - have arisen in many parts of the world and are still



occurring because knowledge that already exists is insufficiently exchanged. In many cases, the knowledge has simply failed to reach the decision makers. Much the same can be said of methods for controlling specific environmental hazards, like floods, droughts, desertification and deforestation.

## 2. Education, training and applied research

276. To ensure a more efficient and responsible use of water resources, it is essential to inform the general public better about existing and emerging water problems. The usual channels of information-transfer have various shortcomings. Oral transfer through lectures and courses is effective but reaches only a limited number of people. Audio-visual channels, like films and television, may play an important role in the future. Newspapers can also play an important role, but the interest shown by journalists in broadening the public's knowledge of water supply and water demand issues is generally less than the importance of those issues warrants.

277. The Mar del Plata Action Plan recommends that countries should give high priority to conducting surveys to determine national needs for administrative, scientific and technical workers in the water resources field. Most countries have not undertaken any such survey yet. Gaps between the supply of and the demand for trained personnel continue to be a major problem in water resources management. The lack of trained and experienced engineers, for instance, has tended to increase the cost of irrigation projects in many countries, and the benefits of large-scale irrigation have been reduced owing to the lack of trained water management personnel and to farmers inexperienced in irrigated agriculture.

278. Closing the labour gap is essential, for no country can plan the best use of its water resources unless it has both qualified staff and the essential facilities. It seems that it will be necessary to establish or strengthen permanent training facilities at the national level. To be effective, training should be designed to meet practical local needs. To train high-level engineers and technicians, however, it might be more practical and economical to establish new regional and interregional centres. A regional or interregional exchange of technicians among developing countries holds out the promise of a low-cost training option.

279. In addition, there is also urgent need for water resources institutions to adapt the knowledge and technology they receive from abroad to their particular needs. The need for applied research institutions is most critical in African countries.

280. More than half of the African countries do not have a research institute or facility dealing with water resources, and little is being done so far to improve the situation in the region. In the other developing regions, the situation is better, although several countries lack institutes dealing with certain essential aspects of water management. Putting emphasis in the International Development Strategy for the 1990s on human resource development therefore must include improving education, training and research on water management.

### 3. Development and dissemination of low-cost, low-risk techniques

281. A substantial proportion of project failures in water resources management in the developing world can be attributed to inappropriate technology. Given the relative scarcity of resources in the developing world, the need to choose appropriate technology cannot be over-emphasized. The appropriateness can be judged, of course, only in reference to existing natural, economic and social conditions. For instance, under difficult natural conditions, such as hard rock, there may be no alternative but to use sophisticated, expensive technology to develop ground water. Under more favourable conditions, less costly technology can be found that is equally efficient.

282. The question of choice of technology has been widely explored, but so far there is no agreement on the criteria for such choice in water resources management. The least costly technology, for instance, may not be the most economically efficient or the least risky, or it may not be so in all places. Moreover, it is not always easy to judge the relative economic efficiency of various techniques.

283. A number of criteria have been put forward for choice of technology, such as simplicity, dependability, labour-intensity, use of local raw materials, cost-effectiveness, speed of construction, environmental and social side effects etc. <sup>55/</sup> The relative merits of particular techniques for a given project cannot, however, be decided a priori. The technology must be chosen in relation to the objectives of the project. Still, wide dissemination of information on known techniques would provide users with a wider range of options. One way to achieve this goal would be to establish better links between scientists and technologists, on the one hand, and practitioners on the other.

### 4. Scope for economic policy

284. Water resources management is, by its very nature, primarily in the public domain. Dams, hydropower projects, irrigation networks and drinking and industrial supply networks usually involve massive capital investment and have protracted pay-off periods. Such projects also involve infrastructural development such as transportation networks and normally, therefore, can be undertaken only by the public sector, particularly in the developing world.

285. But there is considerable scope for private-sector involvement as well. In plantation agriculture, for instance, the private sector is perfectly capable of undertaking economically viable irrigation development schemes. Where ground-water supplies are available, even small farmers are capable of profitably constructing irrigation wells with no - or minimal - public-sector support. Generally a major role for the private sector lies in the construction, operation and maintenance of water supply systems. In several cases, private contractors hired by organizations of farmers or water users have quite satisfactorily carried out community water-supply and small-scale irrigation projects.

286. Economic policy should aim at increasing efficiency in the management of water resources. In the development and conservation of water resources, it has become necessary to keep costs down, by selecting economically efficient, low-cost techniques relying on local materials, to the extent possible, and to move from grandiose schemes to smaller projects. Also important is the need to ensure

continuous maintenance of installed capacity, which will be less costly than major rehabilitation of infrastructure.

287. In order to expand coverage and reliable service, in many countries it will be necessary to modify the existing water subsidy policies. The ultimate beneficiaries of water investments will have to bear a larger share of the cost of project development, operation and maintenance. Polluters should be liable for the damage they do to the environment ("polluter-pays principle"). Cost recovery through water-pricing (and also through effluent charges) has generally been advocated by experts, particularly for those countries where lack of financial resources has all along been a major constraint to water resources development. However, perspectives differ on the extent to which Governments should aim for cost recovery. For instance, if the rural population is unable to contribute more than it does at present, if the only techniques available are beyond their means, or if significant economic, health or social benefits might be lost, then greater cost recovery from users would not be advisable.

288. Irrigation projects raise the irrigators' incomes by increasing their yields, and tend to raise the value of the land located in the command area, thus benefiting the farmers at the expense of tax-payers. In times of increasing water scarcity, it may no longer be justifiable to subsidize irrigation schemes in these ways. However, full cost recovery may not be feasible or even desirable everywhere. It is generally agreed that inefficient operation and poor maintenance of an irrigation system are largely the result of farmers' perception that they have no responsibility for the system. Having farmers pay some share of the water costs would, instead, give them a stake in the system, besides generating revenue to improve operations and expand coverage.

289. Water-pricing would further other important objectives, such as economical use, distributional equity, and pollution prevention. Those who are required to pay for the water they use will have an incentive to use only the quantity they really need. Much of the profligate waste and inefficiency in today's use of water results from policies that promote the illusion of abundance. Water-pricing would promote both a more economical use of water and a more efficient allocation of water for various uses. As a matter of fact, regulations and prices of any type, including systems of quotas, marginal cost-pricing for irrigation water and effluent charges, reflect conflicting goals - the need to encourage efficient use of water, the desire to recover capital costs from users, the desire to favour small farmers, and the need to preserve the environment. The challenge is to find reasonable combinations of regulations and prices which are conducive to the achievement of these goals.

290. It is very important that water users be made either to pay for purifying the water they pollute or to purify the used water themselves. Bodies of water that provide high-quality drinking and irrigation water cannot be expected to dilute the increasing amounts of waste dumped into them each year. Besides, dilution cannot ensure adequate water quality in a society undergoing rapid industrialization and urbanization. Industries should therefore be required to pay the full cost of the water used in their production processes, including the cost of discharging it in a form suitable for re-use. Appropriate pollution control standards need to be implemented and the discharge of effluents by industries limited. Experience has shown that cleaning-up water pollution is extremely costly, and developing countries cannot afford to subsidize it and at the same time increase investments in irrigation systems and drinking water services.

## 5. Institutional development

291. A number of developed and developing countries have established legislation regulating the ownership and use of water. In spite of the progress achieved so far, appropriate legislation is still lacking in many countries, particularly legislation dealing with the development of new supplies, the conservation of ground water and the prevention of water pollution.

292. Likewise, varying degrees of progress have been made in the different regions regarding legislation to establish mechanisms for co-ordinating governmental departments and organizations in the public sector having sub-sectoral responsibility for such matters as urban water supply, rural water supply, hydrology, hydrometeorology and pollution control. There is further need to establish co-ordinating mechanisms and define functions and responsibilities down to the project level. There is also a need for strengthening existing legislation to avoid distortions of priorities and misallocation of investments.

293. Creating effective linkages between the water sector and other critical sectors, like agriculture and rural development, is a persistent difficulty. The links between water and irrigation and water and livestock development are weak, and health, urban development, hydropower and water transportation are other areas where conflicting priorities exert pressure on public sector institutions. Governments must therefore strive to create efficient mechanisms which can translate policies and priorities into feasible plans and programmes.

294. Since the 1950s, most of the institutions for community water supply in developing countries have been established in response to the growing demand for services in the urban areas. Moreover, the urban-biased institutions were often modelled after those in the industrialized countries, and the techniques used were transferred from them without modification. Such institutions and techniques are particularly inappropriate for rural communities, which are less accessible and often only marginally tied to the cash economy. Much the same can be said for institutions designed to manage irrigation and drainage. If investments in the rural water systems of developing countries are to be effective, significant institutional changes are needed which will ensure the selection of appropriate technology and implementation of appropriate management.

295. In many developing countries, institutions responsible for hydrology have been developed over the past decade. However, a number of deficiencies still have to be removed in order for them to meet the present and future requirements of hydrological data and services. An obvious deficiency is a sparse and deteriorated infrastructure of hydro-meteorological and hydrological observation stations which fail to satisfy the minimum requirements in both coverage and continuity of observations.

296. In irrigation development and in rural water supply, a distinct trend is emerging towards devolution of responsibilities to small-scale institutions. This has been accompanied by the involvement of the private sector, community and farmers' associations, and other non-governmental organizations. Women play a very important role in water conservation and water use in many parts of the world. In particular, the establishment of community organizations has been helpful in cost recovery and in maintaining structures.

297. As far as overall assessment of water resources is concerned, the level of activity has actually been on the decline in many developing countries. Inadequate financial resources, lack of qualified manpower, and a shortage of equipment are seen as the major constraints. The situation concerning time-dependent data is bad, particularly regarding ground water, water quality and data on evaporation, and so is the situation regarding time-independent hydrological data.

298. In several developing countries, drastic cuts in allocations to the water resources sector have led to wholesale dismantling of networks that were developed at great cost in the 1960s and 1970s. For instance, in the case of the Lake Victoria Basin and the Upper Nile, where there were once 70 stream-gauging stations, only seven remain. <sup>56/</sup> These waters can no longer be assessed and monitored adequately. The situation, of course, varies from region to region and even within individual countries but seems to be worst in the African region. Disastrous long-term effects are likely in many parts of the world, especially in Africa.

## F. International co-operation and conflict management

### 1. Knowledge and technology transfer

299. The management of water resources at the national level requires knowledge on how best to use water. In developing countries, decisions on water use, particularly in economic activities, are in general unscientific and therefore haphazard. For instance, in irrigation, it may not be known how much water is needed to irrigate one hectare of a given crop or when and how often to irrigate to optimize yields. As a result, a lot of water is being wasted. This situation needs to be remedied by improving the dissemination of scientific knowledge on water.

300. Transfer of knowledge is probably the most effective form of international assistance, since it increases the number of people capable of handling new ideas. One proposal for accelerating the transfer of knowledge calls for a thorough redeployment of international assistance activities to focus on that goal. While knowledge transferred from developed countries can be helpful, its application to particular situations needs to take into account differences in climate, geology and other local factors; otherwise mistakes are likely to occur, possibly resulting in such problems as salinization and waterlogging. Thus, local technical capabilities are very much necessary in order to evaluate the applicability of "imported" technology and/or adapt it to local conditions.

### 2. River-basin management and development

301. By the mid-1970s, around 40 per cent of the world's population was estimated to be living in international river basins. The amount and the quality of water available in river basins are influenced by the activities in the co-riparian countries. The relationships between upper and lower riparians cause special problems: the larger the irrigated area in upstream countries, the less water is available to downstream countries; the greater the polluting activities in upstream countries, the poorer the quality of water received by downstream countries.

302. Africa is the continent where most of the river systems are international, in the sense that the river basins are shared by several countries. Of the nine international water bodies shared by six or more countries, five are in Africa. The Niger runs through 10 countries; the Nile and Zaire, through nine countries; the Zambezi through eight countries; and Lake Chad is shared by six countries. Nearly 60 per cent of the surface area of Africa is accounted for by shared river and lake basins, and at least 80 per cent of the total surface area of 20 African countries lies within international basins. This makes Africa particularly liable to the problems of co-operation encountered when shared water resources have to be partitioned among the countries within the joint water divide. 57/

303. Intergovernmental commissions or planning agencies have been established for co-ordinating and integrating the development of several basins. Progress in most cases has been rather slow, and it is likely that the problems will become more complex and intense. For instance, when the Sudan requires more water for irrigation, it can draw it from the Nile. But that would be detrimental to Egypt, which already uses all the water it can get. Similarly, the construction of dams in Ethiopia may be essential to the development of land for irrigation in Somalia. With relations strained between Ethiopia and Somalia, dams may not be a feasible solution in the short term. In addition, countries depending on hydro-electric power from the Kariba and Volta dams have to agree among themselves to release adequate amounts of water for irrigation. Thus far, there has been considerable reluctance, especially at the Kariba, to release water for irrigation at the expense of hydro-electricity.

304. In Europe, significant progress is in sight on the prevention and control of pollution of transboundary waters. Several bilateral and multilateral agreements and conventions have been signed. Notable examples are the agreements on ecological objectives with respect to the utilization of the waters of the Rhine and the Danube. In 1985, ECE adopted a regional strategy for environmental protection and the rational use of natural resources, which aims, inter alia, at dealing with transboundary water pollution, municipal and industrial waste water and agricultural and aqua-cultural activities.

305. In Western Asia, where some 95 per cent of the average annual discharge from rivers emanates from river basins shared by two or more countries, so far only two co-operative agreements for the development of shared river basins exist. The joint Syro-Jordanian Commission is empowered with integrated planning and development of the Yarmouk River basin, and the Trilateral Commission on the Euphrates River deals with the collection and analysis of river flow and rainfall data. In this region, tensions among riparian countries are likely to grow with increasing demand for water.

306. In South America, international river and lake basins account for about 75 per cent of the total flow of water. Thus far, international co-operation covers only 15 of the region's shared basins, and most of the agreements are restricted to exchange of information, research and joint studies. The only two working multilateral agreements are those on the Plata River basin and the Amazon basin.

307. In Asia, some 65 per cent of the drainage area of rivers is from river basins shared by two or more countries. A number of co-operative agreements have been reached on important shared river basins - for instance, the Permanent Indus Commission which regulates the allocation of waters from the Indus River basin

between India and Pakistan; the agreement between China and the Democratic People's Republic of Korea for the joint development of the Yalu River; the Joint Rivers Commission for the Ganges and the Brahmaputra between Bangladesh and India; the Interim Committee for the Co-ordination of Investigations of the Lower Mekong Basin, and agreements between Afghanistan and the USSR on the Amu River basin, between Afghanistan and Iran (Islamic Republic of) on the Helmand River basin, and between Malaysia and Thailand on the Golok River basin. No doubt, as the demand for water increases and pollution from agricultural and industrial sources grows, such regional and international co-operative agreements, most of which are loose and lacking in coverage, will have to be strengthened in order to ensure the equitable and effective use, conservation and development of water resources. 58/

308. The positions of the different countries in an international river basin may be in accord - for instance, when countries have a common interest in increasing the dependable flow in the river by water storage and flow control schemes etc. This seems to be the case with rivers such as the Nile and the Senegal. In other cases, serious competition may develop between the upstream countries and the downstream countries. The Rhine is an example of divergent interests on water quality - with Switzerland, France and the Federal Republic of Germany polluting the water on which the Netherlands has to rely for a large part of its drinking water supply. The Ganges is an example of competition for water quantity, with flow diversions in India creating dry season problems in Bangladesh.

309. At the United Nations Water Conference in 1977, considerable interest was expressed in international river basins. Many downstream countries joined in a call for an international code of conduct, or conventions; upstream countries, however, stressed sovereignty over their natural resources. Some basic problems still need to be resolved in order to promote regional and international co-operation on the use of shared bodies of water. For instance, considerable ambiguity surrounds the fundamental concept of "equitable use", articulated in the relevant Helsinki rule. 59/ The concept seems to be clear if it refers to water flow only, but difficulties emerge when it refers to equitable sharing of water quality or to how an upstream country should share water with downstream countries. Thus, there is, evidently, an urgent need to strengthen international laws and agreements that will put co-operation on water resources among States on a firmer basis.

### 3. An international water strategy for the future

310. While there is much to be said in favour of comprehensiveness and completeness, a realistic water strategy should not be so ambitious as to put it beyond the realm of feasibility. The key elements of strategy for the future need to include:

(a) Ways and means of providing safe drinking water and sanitation facilities to all people on an urgent basis;

(b) Development of adequate water resources to meet the demand in agriculture and industry;

(c) Development of institutional and human resources for efficient water resources management;

(d) Water conservation and pollution control;

(e) International co-operation;

(f) Mobilization of financial resources for water resources development and management.

311. The provision of drinking water and sanitation facilities remains one of the most pressing problems in most of the developing world, despite some progress made during the International Drinking Water Supply and Sanitation Decade. Development of adequate water resources for irrigation also remains a top priority in many parts of the developing world. The proportion of agricultural production resulting from the development of new irrigation or the rehabilitation of existing schemes has, however, been decreasing.

312. Developments in Africa, in particular, have been cause for increasing national and international concern. In most African countries the initial emphasis should be on the rehabilitation or improvement of existing schemes, to be followed by expansion into new areas, with due consideration of efficient water use.

313. Owing to the problems caused by poor water management in all sectors in the past, there is a clear need to enhance its efficiency. Water resources management should be encompassed by integrated land and water management with a view to minimizing the waste of water resources, land and water degradation, and natural disasters, particularly floods and droughts.

314. The need for effective international co-operation among riparian countries is greater now than ever before because of the growing demand for water in all co-basin countries and the increasingly harmful effects of activities in upstream countries. Over a third of the 200 international river basins are not covered by any international agreement; only some 30 have co-operative institutional arrangements. <sup>48/</sup> Clearly, efforts are needed to formulate and reach agreement on an international "code of conduct" or convention in the utilization of shared water basins so that the water needs of some countries are not undermined by irresponsible utilization of water resources by others. Improved international co-operation is also necessary regarding the transfer of knowledge and technology in the water resources field.

315. An essential element of a strategy for the future should be the accelerated development of institutional and human resources, without which adequate water supplies cannot be produced, and efficiency in the management of water resources cannot be enhanced. A major change for many countries may be decentralization and/or privatization of responsibility for water supply and sanitation activities and the substantial participation of communities and non-governmental organizations in the various stages of project planning, operation and maintenance.

316. To achieve the goals of the strategy, developing countries need to mobilize adequate financial resources and allocate adequate personnel resources to the water sector. However, it may not be realistic to expect many developing countries to divert many more resources to the water sector in the short-to-medium term. Therefore, measures to stretch current allocations to the water sector are needed, including:

(a) Introducing cost-recovery schemes where water is currently subsidized;



(b) Encouraging the active participation of local communities in the operation and maintenance of facilities;

(c) Allowing the private sector to play a greater role.

In many countries, self-help activities may need to be supplemented by external assistance if significant progress is to be made in any aspect of water resources development.

317. At the global level, an extensive network of institutions has been established to co-ordinate policies in the water resources field. In 1980 the Administrative Committee on Co-ordination (ACC) formed the Intersecretariat Group for Water Resources to co-ordinate policies among all the United Nations agencies dealing with water resources. After the launching of the International Drinking Water Supply and Sanitation Decade in 1980, the executive heads of UNDP and WHO created the Steering Committee for Co-operative Action for the Decade. The Group includes the 11 agencies with programmes in water supply and sanitation and utilizes the UNDP resident representative in each developing country as a focal point for co-ordinating such programmes. Both groups have been very active during the 1980s, and the co-ordination of United Nations water-sector activities at the country level has improved considerably. None the less, a greater degree of co-ordination of the activities of multilateral institutions and bilateral aid agencies would further enhance the impact of external assistance.

318. The Steering Committee recommends that the elements of a water strategy outlined in paragraph 310 be considered by the Committee on Natural Resources in formulating its water resources strategy for the 1990s. Among measures to be taken, the most promising for water-scarce countries in the short run is better management of demand, preferably through pricing mechanisms. This will conserve water and at the same time mobilize financial resources for the development of the water sector. In the medium term, effective international co-operation in the management of river basins will be indispensable, and measures to that end need to be initiated immediately. In many countries, water scarcity will become an intractable problem in the medium-to-long term unless population growth and urbanization are brought under control.

319. The Committee also recommends that the Conference on Environment and Development scheduled for 1992 should include in its agenda a separate item, on sustainable development and the utilization of water resources. The Conference should take into account the water resources strategy to be formulated by the Committee on Natural Resources in formulating its own action programme.

## V. OTHER MATTERS

### A. Identification of the least developed among the developing countries

320. The Committee reviewed a progress report prepared by the Secretariat containing an analysis of criteria which might be used to supplement or replace some of those currently used for designating countries as least developed. The Committee found the report very useful and commended its high technical quality. The major observations of the Committee on the report related to the need for periodic review of the list of least developed countries, the need for the qualifying criteria to be reviewed continually, in the light of changing circumstances, and the possible use of other indicators, such as a "quality of life" index. The Committee also expressed the view that consideration for inclusion on the list of least developed countries should take into account the economic and social implication of governmental policies. Some members stressed the importance of locational vulnerabilities, such as prevailing climatic and weather conditions, size, remoteness and being landlocked. The Committee requested the Secretariat to undertake further work on the issue and to report to it at its twenty-sixth session.

### B. The Secretary-General's consultations

321. In the annex to its decision 43/460 of 7 March 1989 on the special session of the General Assembly devoted to international economic co-operation, in particular, to the revitalization of economic growth and development of the developing countries, the General Assembly requested the Secretary-General "to carry out appropriate high-level consultations, including consultations with eminent personalities" to assist in the preparations of his report to the special session. In pursuance of this request, the Secretary-General decided to consult with members of the Committee. Accordingly, the afternoon session of 11 May was devoted to the consultations.

### C. Review of the report of the Secretary-General on the socio-economic perspective

322. After reviewing the report of the Secretary-General entitled "Overall socio-economic perspective of the world economy to the year 2000" (A/43/554), at its forty-third session, the General Assembly adopted resolution 43/194, in which it requested the Secretary-General to update the report so as to enhance its usefulness as a background document for work on an international development strategy, taking into account the views of the Committee for Development Planning. The Committee expressed the view that the report was already of excellent quality and was not in need of substantial revision. Individual committee members were invited to submit written suggestions to the Secretariat, and several of them did so.

## VI. ARRANGEMENTS FOR FUTURE WORK

323. The Committee decided to prepare for its twenty-sixth session (30 April-4 May 1990) through three working groups supported by relevant studies to be undertaken by the Secretariat and independent experts on the themes outlined below. Also, the Committee requested the Secretariat to continue its exploratory work on criteria for designating countries as least developed.

324. The Committee stressed the need for intensive substantive preparations before the regular sessions of the Committee, including the work of consultants as well as the Secretariat. The Committee had been informed by the Secretariat that its proposed work programme could be carried out within the current budgetary appropriations.

### A. International development strategy and national policies

325. Many of the problems that developing countries have encountered during the 1980s have had implications for fiscal policies. So also will efforts to adjust their economies in hope of attaining the objectives of national and international development strategies for the 1990s. In many developing countries, public-sector finances have been in a state of crisis. Revenues have fallen or failed to increase satisfactorily in countries that depend mainly on the earnings of exports whose prices performed poorly in the 1980s. Public-sector debt service, often swollen by high interest rates, has preempted an increasing proportion of public expenditures. Competition for the remaining resources has been intense. Often military expenditures have retained a priority claim, at the expense of the health and education sectors which are crucial for human resources development. In other cases, needed public expenditures on physical infrastructure have suffered while large subsidies have been provided to the State-owned enterprise sector.

326. Inexorably, increasing pressure on the expenditure side in the face of relatively inelastic revenues has often been resolved by increasing external public debt and/or by excessive borrowing from the central bank, leading to high and increasing rates of inflation. Such problems have led many countries to question the size of the public sector itself and/or to undertake tax reform in order to underpin desirable public sector expenditures with a more adequate non-inflationary revenue base.

327. Fiscal problems in centrally planned economies may have some similarities to those in developing countries. The fiscal policies of developed market economies, on the other hand, have implications, inter alia, for the level of interest rates in international capital markets and are, therefore, also of interest in the implementation of an international development strategy.

328. The Committee proposed therefore to consider the topic of national policies, especially fiscal policies, public-sector reform and international development strategy, by convening a representative working group of from five to eight members and technical experts chaired by Edmar Bacha (New York, 30 October-3 November 1989).

## B. Trading blocs

329. The 1980s has witnessed measures towards the creation or strengthening of trading blocs. The most important development in this respect has been the trade agreements between the United States and Canada, with the possibility of another between the United States and Mexico, the enlargement of EEC and the strengthening of co-operation within EEC which is to be completed by 1992. The impact of such arrangements on world trade and the world economy is as yet not very clear. Whether they will be trade-diverting or trade-creating, however, is a major cause for concern, particularly at a time when major efforts have been made and are still under way in many developing countries to reform their policies so as to make their economies more oriented towards the outside; and when in the centrally planned economies efforts are being made towards fuller integration into the world trading system. That the weaker developing countries might be marginalized remains a frightful possibility; an equally frightful possibility is the eruption of trade wars between the blocs. The current round of trade negotiations must play an important role in safeguarding and strengthening the open multilateral trading system so that existing and future economic integration will further - not undermine - the expansion of world trade based on comparative advantage and the needs of developing countries. The Committee proposed to study the likely emergence of adverse effects of the trading blocs and possible ways of warding them off, through a representative working group composed of from five to eight members and technical experts, chaired by Helen Hughes (Geneva, 27 November-1 December 1989).

## C. The work of the Committee for Development Planning

330. The Committee was established in 1965 by the Economic and Social Council in resolution 1079 (XXXIX) and the General Assembly in resolution 2084 (XX), because a need was felt for independent expert advice on development trends and projections, including planning techniques and development strategies, and on the activities in these fields of the United Nations system, in order to formulate measures for their improvement. The Council gave the Committee an open-ended mandate with very general guidelines and asked the Committee to formulate its own terms of reference. In view of the importance attached at the time of its establishment to the need for plan formulation and implementation, the Committee decided to focus largely on planning issues. Subsequently, while the Committee gave attention occasionally to plan implementation in the framework of the International Development Strategy for the Second United Nations Development Decade, it has also dealt with a broad range of policy issues, current and long term, at the national and international levels, related to the implementation of the International Development Strategy and national plans and policies. Over the years, the Committee's work has evolved in accordance with world economic events and changing perceptions on development issues. The Committee has decided to take stock of its work by way of a self-evaluation at its twenty-sixth session in 1990, considering the usefulness of its advice to the Council and its effectiveness in contributing to the formulation of development policies at the national and international levels, with a view, if so warranted, to giving new directions to its work in the future. Preparatory work will be undertaken by a working group chaired by P. N. Dhar (New York, 21-23 March 1990).

## VII. ORGANIZATION OF THE SESSION

331. The twenty-fifth session of the Committee for Development Planning was held at United Nations Headquarters from 9 to 12 May 1989. Nineteen members of the Committee attended: Abdlatif Y. AL-HAMAD, Nicolas ARDITO-BARLETTA, Edmar BACHA, P. N. DHAR, Just FAALAND, Keith B. GRIFFIN, Patrick GUILLAUMONT, Mahbub ul HAQ, Gerald K. HELLEINER, Helen HUGHES, Sinichi ICHIMURA, Solita Collas MONSOD, Henry NAU, G. O. NWANKWO, Jozef PAJESTKA, Mihaly SIMAI, Udo E. SIMONIS, Igor SYSOYEV, and Ferdinand VAN DAM. Four members were unable to attend: Gerasimos ARSENIS, Adama DIALLO, Bernard CHIDZERO, and Hernando de SOTO.

332. The officers elected at the twenty-third session for the term ending on 31 December 1989 were: Abdlatif Y. AL-HAMAD (Chairman), Mihaly SIMAI (Vice-Chairman) and Just FAALAND (Rapporteur).

333. The Committee noted with sadness the demise of HUAN Xiang, a member since 1984.

334. The Committee welcomed PU Shan who had been co-opted to replace HUAN Xiang at the twenty-fifth session.

335. The session was opened by the Director-General for International Economic and Social Affairs, who remarked on the persistent structural imbalances in the world economy and the setbacks of the development process in many countries, particularly with respect to the deterioration of social and environmental indicators.

336. Preparation for the session had been carried out by three working groups of the Committee. The working group on trade, debt and finance (met in New York from 8 to 11 November 1988) comprised Edmar BACHA, P. N. DHAR (Chairman), Gerald HELLEINER (Rapporteur), Helen HUGHES, Henry NAU, G. O. NWANKWO, Jozef PAJESTKA, Mihaly SIMAI, Igor SYSOYEV and Catherine GWIN as a co-opted expert. The working group on water resources management (met at Geneva from 29 November to 2 December 1988) comprised Solita MONSOD (Chairman), Udo Ernst SIMONIS (Rapporteur), with Malin FALKENMARK and Thomas MATHER as co-opted experts. The working group on an international development strategy (met in New York from 22 to 24 February 1989) comprised Nicolas ARDITO-BARLETTA, Keith GRIFFIN (Rapporteur), Mahbub ul HAQ (Chairman), Sinichi ICHIMURA, and Igor SYSOYEV.

337. Substantive services for the session were provided by the Department of International Economic and Social Affairs of the United Nations Secretariat. The following bodies were represented at the session: the Centre for Science and Technology for Development, the Centre on Transnational Corporations, the Centre for Social Development and Humanitarian Affairs, the United Nations Children's Fund, the United Nations Office at Vienna, the United Nations Conference on Trade and Development, the United Nations Development Programme, the United Nations Population Fund, the Economic Commission for Latin America and the Caribbean, the Economic Commission for Africa, the United Nations Centre for Human Settlements, the United Nations University, the World Food Council, the World Food Programme, the International Labour Organisation, the Food and Agriculture Organization of the United Nations, the World Health Organization, the World Bank, the International Monetary Fund, the International Fund for Agricultural Development, the United Nations Industrial Development Organization and the Organisation for Economic Co-operation and Development.

## Notes

1/ See "Report of the meeting of the Expert Group on Short and Medium-term Projections of the World Economy" (E/AC.54/1989/L.1), 4 May 1989.

2/ "Transnational corporations in world development: trends and prospects" (United Nations publication, Sales No. E.88.II.A.7), pp. 90-92.

3/ Helen Hughes, Calculations based on an international economic data bank. Australian National University. Mimeo, 19 October 1988.

4/ Gary P. Sampson "Non-tariff barriers facing developing country exports", in Rules, Power and Credibility, vol. 1, John Whalley, ed. (London (Ontario), University of Western Ontario, Centre for the Study of International Economic Relations, 1988).

5/ United Nations, Department of International Economic and Social Affairs, Calculations based on official national and international sources.

6/ World Bank, Price Prospects for Major Primary Commodities (Washington, D.C., World Bank, 1988).

7/ "Overall socio-economic perspective of the world economy to the year 2000: report of the Secretary-General" (A/43/554).

8/ Colleen Hamilton and John Whalley, "Introduction", in Rules, Power and Credibility, vol. 1, John Whalley, ed. (London (Ontario), University of Western Ontario, Centre for the Study of International Economic Relations, 1988).

9/ Harmon Thomas, "Agriculture in the Uruguay Round: interests and issues", in Uruguay Round: Papers on Selected Issues (UNCTAD/ITP/10), pp. 21-26.

10/ See "Towards a durable solution of the debt problem" (A/43/647); and "Debt and development", Trade and Development Report, 1988 (United Nations publication, Sales No. E.88.II.D.8).

11/ A strategy for dealing with international debt, proposed by United States Secretary of the Treasury James Baker, at a meeting of the World Bank and IMF, at Seoul, 8 October 1985. See International Legal Materials (19 March 1986), p. 112.

12/ See, for instance, General Assembly resolution 41/202, the Final Act of the United Nations Conference on Trade and Development at its seventh session (1987), and the Communiqué of the Interim Committee of the Board of Governors of the International Monetary Fund of 4 April 1989.

13/ Statement made by Shafiq ul Islam before the sub-committee on International Development, Finance, Trade and Monetary Policy of the Committee on Banking, Finance and Urban Affairs, United States House of Representatives, 5 April 1989.

14/ World Development Report, 1988 (Washington, D.C., World Bank, 1988), pp. 29-30.

15/ Roy Culpepper, "Savings and investment: global trends and distribution". Mimeo, 1989.

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16/ "International finance, debt and instability", chap. IV in World Economic Survey, 1988 (United Nations publication, Sales No. E.88.II.C.1), pp. 50-66.

17/ Handbook of International Trade and Development Statistics (United Nations publication, Sales No. E.87.II.D.10), pp. 328-331.

18/ Development Co-operation, various issues.

19/ Handbook of International Trade and Development Statistics (United Nations publication, Sales No. E.87.II.D.10), pp. 332-335.

20/ "The external and fiscal imbalances of developed countries: causes and effects", chap. VII in World Economic Survey, 1988 (United Nations publication, Sales No. E.88.II.C.1), pp. 121-140.

21/ Development Co-operation. 1988 Review, p. 47.

22/ The data were obtained from Report of the Task Force on Foreign Assistance to the Committee on Foreign Affairs, United States House of Representatives, 101st Congress, 1st Session, February 1989.

23/ See International Monetary and Financial Issues for the Developing Countries (United Nations publication, Sales No. E.87.II.D.3).

24/ Based on World Population Prospects, 1988 (United Nations publication, Sales No. E.88.XIII.7).

25/ Demetris Papageorgiou, Michael Michaely and Armeane M. Choksi, "Introduction" in "Trade liberalization: the lessons of experience" (World Bank, Washington, D.C.). Mimeo, April 1988.

26/ See Official Records of the Economic and Social Council, 1988, Supplement No. 6 (E/1988/16), "Human resources development: the neglected dimension".

27/ See, for example, Financing Education in Developing Countries: an Exploration of Policy Options (Washington, D.C., World Bank, 1986). Most estimates are of average rates of return. A careful study of the return on marginal expenditure in Kenya, however, concludes that the social marginal rate of return is 12 per cent in primary education and 13 per cent in secondary education. (J. B. Knight, R. H. Sabot and D. C. Hovey, "Is the rate of return on primary schooling really 26 per cent?", American Economic Review, forthcoming.)

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29/ It has been shown, for example, that expanded educational expenditure in both East Africa and Colombia reduces urban income inequalities. See J. B. Knight and R. H. Sabot, "Educational expansion and the kuznets effect", American Economic Review (December 1983), and Rakesh Mohan and Richard Sabot, "Educational expansion and the inequality of pay: Colombia 1973-78", Oxford Bulletin of Economics and Statistics (May 1988).

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30/ Health and the Status of Women (Geneva, World Health Organization, 1980); L. C. Chen, E. Huq and S. D. D'Souza, "Sex bias in the family allocation of food and health care in rural Bangladesh", Population and Development Review, vol. 7, No. 1 (1981).

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32/ Strategies for Children and Development in the 1990s (New York, United Nations Children's Fund, 1989), p. 10.

33/ Ibid., p. 11.

34/ By "absolute poor" is meant those who fall below the official Indian poverty line, which is determined nutritionally.

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36/ Ibid., table 3, pp. 42-43.

37/ Ibid., table 4, p. 45.

38/ "Food and agriculture: review and analysis of agrarian reform and rural development" (E/1988/56), p. 29.

39/ "Towards a new international development strategy: economic, social and environmental concerns in the Asian and Pacific region in the 1990s" (E/ESCAP/645), p. 8.

40/ Dharam Ghai, Michael Hopkins and Donald McGranahan, "Some reflections on human and social indicators for development" (Geneva, United Nations Research Institute for Social Development, October 1988). Discussion Paper No. 6, p. 28.

41/ This argument is made at length in the report of the Brundtland Commission, Our Common Future (New York, Oxford, 1988).

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43/ Food and Agriculture Organization of the United Nations, "Position paper on climate change and its implications for agriculture, forestry and fisheries" (February 1989), p. 3.

44/ World Resources Institute, World Resources, 1986 (Washington, D.C., 1986), p. 121.



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46/ WASH Project, "The value of WSS in development: an assessment of health-related interventions" (Washington, D.C., United States Agency for International Development). Technical Report No. 43, p. 29.

47/ Based on United Nations population projections and WHO coverage estimates, 1989.

48/ "Our common future: recommendations relevant to water resources development strategies for the 1990s" (ACC/ISGW/1988/5).

49/ "Progress achieved and foreseen in the implementation by Governments of the Mar del Plata Action Plan" (E/C.7/1989/8), paras. 72-75.

50/ Ibid.

51/ Based on M. Falkenmark, "Water, land use and development". Mimeo, 1986, p. 43; and R. Ambroggi, Pénuries d'eau dans le monde et le tiers-monde en particulier (Rabat, 1988), pp. 5-8.

52/ E. Fano and M. Brewster, "Water quality management in developing countries". Mimeo, 1988, p. 3.

53/ "Water, sanitation and health for all by the year 2000" (E/ICEF/1988/L.4), p. 3.

54/ See, for example, World Meteorological Organization, Water Resources, Assessment and Monitoring (Geneva, WMO, 1986), p. 8.

55/ Water Development and Management: Proceedings of the United Nations Water Conference, part 2 (New York, Pergamon, 1978).

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58/ Ibid.

59/ See Helsinki Rules on the Uses of Waters of International Rivers, adopted by the 52nd Conference of the International Law Association (Helsinki, 20 August 1966), (London, the Temple, International Law Association, 1966).

Annex I

AGENDA

1. Adoption of the agenda and organization of work.
2. World economic situation and prospects.
3. Report of the working group on the international development strategy.
4. Report of the working group on trade, debt and finance.
5. Report of the working group on water resources management.
6. Eligibility criteria for designation as a Least Developed Country.
7. Other business.
8. Organization of work for the twenty-sixth session.
9. Adoption of the report of the Committee.

Annex II

LIST OF THE LEAST DEVELOPED AMONG THE DEVELOPING COUNTRIES

| <u>Country</u>                       | <u>Date of inclusion on the list</u> |
|--------------------------------------|--------------------------------------|
| 1. Afghanistan                       | 1971                                 |
| 2. Benin                             | "                                    |
| 3. Bhutan                            | "                                    |
| 4. Botswana                          | "                                    |
| 5. Burundi                           | "                                    |
| 6. Chad                              | "                                    |
| 7. Ethiopia                          | "                                    |
| 8. Guinea                            | "                                    |
| 9. Haiti                             | "                                    |
| 10. Lao People's Democratic Republic | "                                    |
| 11. Lesotho                          | "                                    |
| 12. Malawi                           | "                                    |
| 13. Maldives                         | "                                    |
| 14. Mali                             | "                                    |
| 15. Nepal                            | "                                    |
| 16. Niger                            | "                                    |
| 17. Rwanda                           | "                                    |
| 18. Samoa                            | "                                    |
| 19. Somalia                          | "                                    |
| 20. Sudan                            | "                                    |
| 21. Uganda                           | "                                    |
| 22. United Republic of Tanzania      | "                                    |
| 23. Burkina Faso                     | "                                    |
| 24. Yemen                            | "                                    |
| 25. Bangladesh                       | 1975                                 |
| 26. Central African Republic         | "                                    |
| 27. Democratic Yemen                 | "                                    |
| 28. Gambia                           | "                                    |
| 29. Cape Verde                       | 1977                                 |
| 30. Comoros                          | "                                    |
| 31. Guinea Bissau                    | 1981                                 |
| 32. Djibouti                         | 1982                                 |
| 33. Equatorial Guinea                | "                                    |
| 34. Sao Tome and Principe            | "                                    |
| 35. Sierra Leone                     | "                                    |
| 36. Togo                             | "                                    |
| 37. Vanuatu                          | 1985                                 |
| 38. Tuvalu                           | 1986                                 |
| 39. Kiribati                         | "                                    |
| 40. Mauritania                       | "                                    |
| 41. Burma                            | 1987                                 |
| 42. Mozambique                       | 1988                                 |