The State of the Environment 1984

The environment in the dialogue between and among developed and developing countries

United Nations Environment Programme

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Contents

THE ENVIRONMENT IN THE DIALOGUE BETWEEN AND AMONG DEVELOPED AND DEVELOPING COUNTRIES

Report of the Executive Director

The intent of this report is to engender a better understanding of the central role of environmental issues in the broader economic and social context. It is meant to facilitate a more comprehensive approach by demonstrating that economic and social issues (until now the mainstays of the dialogue between developed and developing countries) on the one hand, and the environment on the other should involve a mutually beneficial influence of each upon the other. The report is intended to show that economic problems cause environmental despoliation which, in turn, makes economic and structural reform more difficult to achieve. The hope is that the agreement which exists on the environment will exercise a positive influence on the economic and social dialogue, help to build confidence, and further an understanding of the economic and social dimensions that will result in more concrete progress on environmental issues.

In chapter I, the report seeks to present the case for more concerted action on environmental issues to those dealing with economic and social matters. The aim has been to show how knowledge of relevant environmental considerations, and of the wide range of agreement and of perceived mutual interest in respect of environmental issues, might assist in improving economic and social welfare. In chapter II, several issues have been selected to illustrate the emerging aspects of socio-economic and ecological interdependence. Each selected issue offers a basis for more co-operation leading to concrete action between and among developed and developing countries. It therefore seeks to take the prevailing harmony in the UNEP Governing Council and other forums a step further in the direction of agreed commitment and specific actions.

Thus, what needs to emerge is (a) a set of agreed perceptions which constitute an airtight case for the inclusion of environmental considerations in the dialogue on broad economic and social matters, and (b) a set of agreed actions meant to lead to common benefits or to stop common disadvantages. To help achieve the latter in particular, the present document includes a set of recommended actions for consideration by the Governing Council. If these actions are adopted and applied, a new, more comprehensive commitment to the fate of human environment will undoubtedly be engendered.

Suggested action by the Governing Council

The suggested action appears in section IV of the report.

INTRODUCTION

1. This report is prepared in response to Governing Council decision 11/1 of Section II, paragraph 3 by which the Council decided that the single topic to be considered in the 1984 report on the state of the environment would be "The environment in the dialogue between and among developed and developing countries".

A. *Scope*

2. An important preliminary step in preparing the report was to define its scope and to be clear what is meant by "the dialogue". This report starts from the premise that the dialogue referred to takes place on a continuous basis within the forums of the United Nations system, and also in a number of outside forums, on a large number of subjects, and at a greater or lesser degree of specificity. The broad consideration of economic and social issues in the dialogue was considered highly relevant for the purpose of this report. In this regard, special significance was thought to attach to the launching of "global negotiations", a matter which is before the General Assembly of the United Nations, and to the review and appraisal of the International Development Strategy for the Third United Nations Development Decade, for which the General Assembly has established a process. That the broad consideration of economic and social matters was considered relevant stems from the belief that economic and social development:

(a) Affects the environment;

(b) Is affected by the environment;

(c) Is sustained only through the proper use of the environmental components, especially natural resources.

3. There is also, of course, a continuing dialogue on environment itself, and for this the Governing Council is the forum within the United Nations system. This aspect of the dialogue has proceeded successfully and harmoniously over many years.

B. *Intent of the report*

4. This report is designed to broaden the context of the dialogue, i.e. to ensure that the dialogue as it relates to broad economic and social issues on the one hand, and to environment on the other hand, takes more fully into account the mutual influence of each upon the other. Figure 1 shows in schematic form, and not necessarily exhaustively, the range of influences upon the environment, and hence illustrates by implication the lat-

ter's influence on the broader issues. The hope is that the harmony which prevails in consideration of the environment may exercise a positive influence on the broad economic and social dialogue, help to build confidence, and promote an understanding of the economic and social dimensions that will permit still more concrete progress to be achieved on environmental issues.

5. In chapter I, the report seeks to present the environmental argument to those dealing with broad economic and social issues, showing the environmental implications of those issues and conversely, how a knowledge of relevant environmental considerations, and of the wide range of agreement and of perceived mutual interest in that regard, might help in the consideration of the economic and social issues.

6. In chapter II the report, taking the material in chapter I as a context, illustrates in some selected areas the economic and social interdependences among and between groups of countries, as a basis for more concrete decision making in those areas. It therefore seeks to take the prevailing harmony in the UNEP Governing Council a step further in the direction of agreed commitment and specific actions.

7. Two approaches which the report does not follow are:

(a) To advocate the inclusion of an additional separate item on environment in the dialogue over economic and social issues, especially in any future "global negotiations". Rather, environment is seen as a dimension in all such discussions;

(b) To cover all the environmental issues which are dealt with by the Governing Council of UNEP; rather, it picks out some of those issues to illustrate the wider argument on interdependences.

8. Chapter III summarizes briefly the arguments put forward in the two preceding chapters and, through a concise statement of the challenges posed by those arguments leads into the suggestions for action contained in chapter IV.

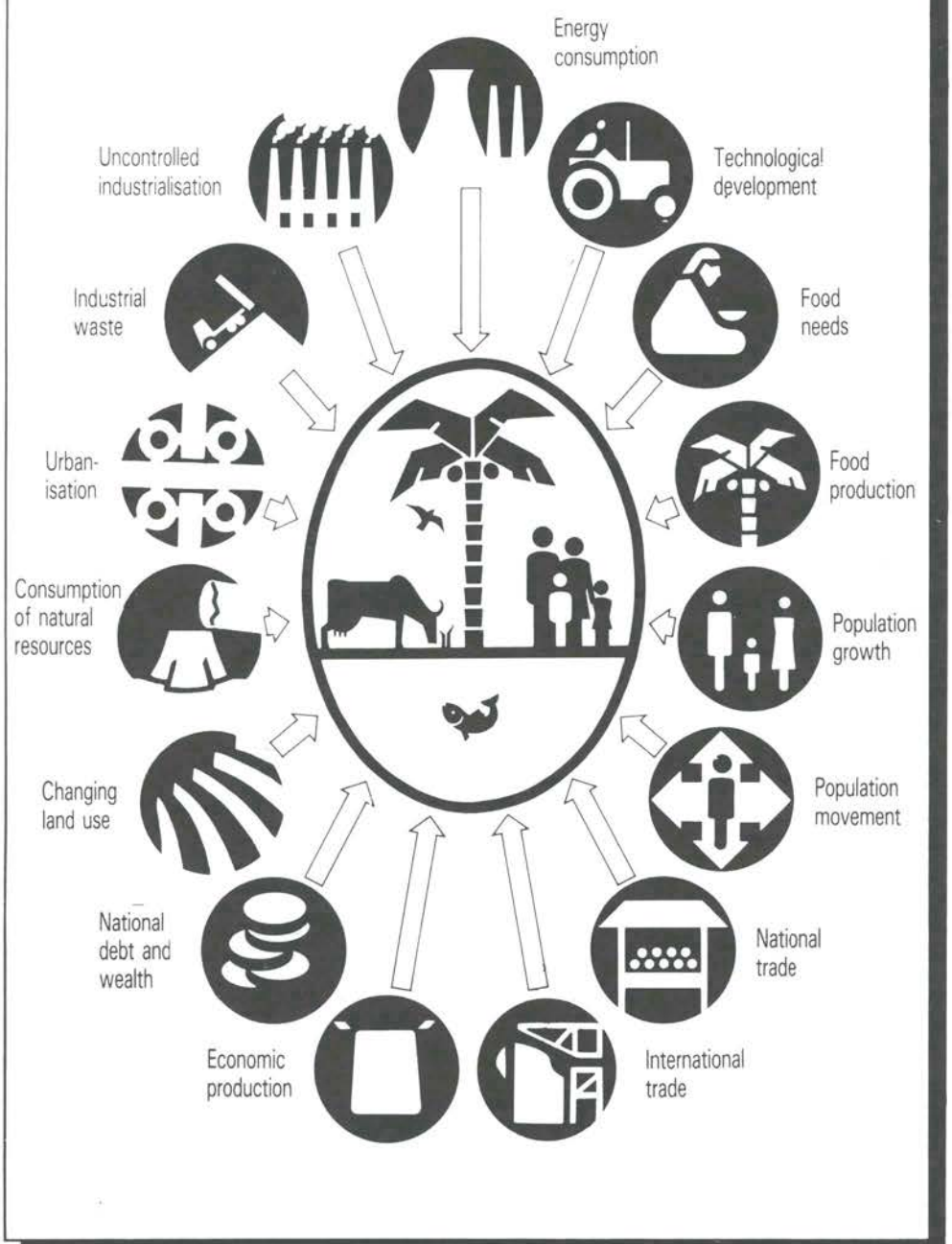
C. *Process of preparation*

9. In preparing the present report, the Executive Director discussed its proposed structure and main contents with the Permanent Representatives of Governments to UNEP in Nairobi. Having ascertained their favourable response to his prososals, the Executive Director then drew upon material from within the United Nations system and from outside consultants as the basis of a first draft. This draft was reviewed by a distinguished group of outside experts (see annex) and, together with their views, reviewed also by a high level group meeting held at Geneva from 25 to 30 November 1983. The present report of the Executive Director has been prepared in the light of the advice made available to him in the above extensive process of consultations.

D. *Background*

10. In the period between the 1972 United Nations Conference on the Human Environment and now, the environment has moved into the mainstream of issues that con-

1 Influences on the environment



cern the international community. To date, however, its role in the dialogue on economic and social matters has not been adequately defined or properly recognized. One aim of the report is therefore to show, in unequivocal terms, that environmental issues are central to the political, economic and social issues which constitute the mainstays of the dialogue.

11. The demonstration of that proposition starts from a position of strength. In the UNEP Governing Council, and in numerous other arenas, nations have found they could reach a broad consensus on the nature, magnitude and importance of environmental problems and on the measures needed to tackle them. The challenge facing nations —singly and collectively—is to extend that spirit of consensus to cover other areas of the dialogue. The goodwill so painstakingly built up in the Governing Council and elsewhere in the environmental field can be exported. Such an outcome may constitute a useful contribution towards an early start in the global negotiations aimed at addressing urgent world economic problems.

12. However, this desirable outcome will not be achieved unless, and until, nations recognize the crucial relationship between proper environmental management and world economic and social development. This report seeks to help bring that recognition about by showing that countries have a stake in each other's environmental welfare and stability. The report presents self-interest in its most benign form by demonstrating that all can benefit from a rational and fair management of natural resources. There is massive scope, without any impairment of sovereignty and countries' legitimate rights, for further co-operative action on sound management. The agreement that is already present between and among various groups of Governments on a wide range of environmental issues provides the starting point. The incentive for action rests firmly in perception of mutual benefits. UNEP's regional seas agreements, the World Soils Policy, the draft Convention on the Protection of the Ozone Layer, to mention only a few examples, are founded on such a concept.

13. The dialogue is now taking place in different forums and different organizations at sub-regional, regional, inter-regional and global levels. A further tier is the dialogue among governmental as well as non-governmental groups. New modalities such as the global negotiations now being considered offer fresh fields of opportunity. The exchange in these arenas could proceed in an improved spirit of understanding and harmony, stressing the mutuality of interest in dealing with environmental and natural resource management issues and identifying the specific areas where Governments could step up their co-operative efforts.

I. ENVIRONMENT AND THE ECONOMIC DIALOGUE—A GENERAL DISCUSSION

A. SOME RELEVANT TRENDS IN THE WORLD ECONOMY[1]

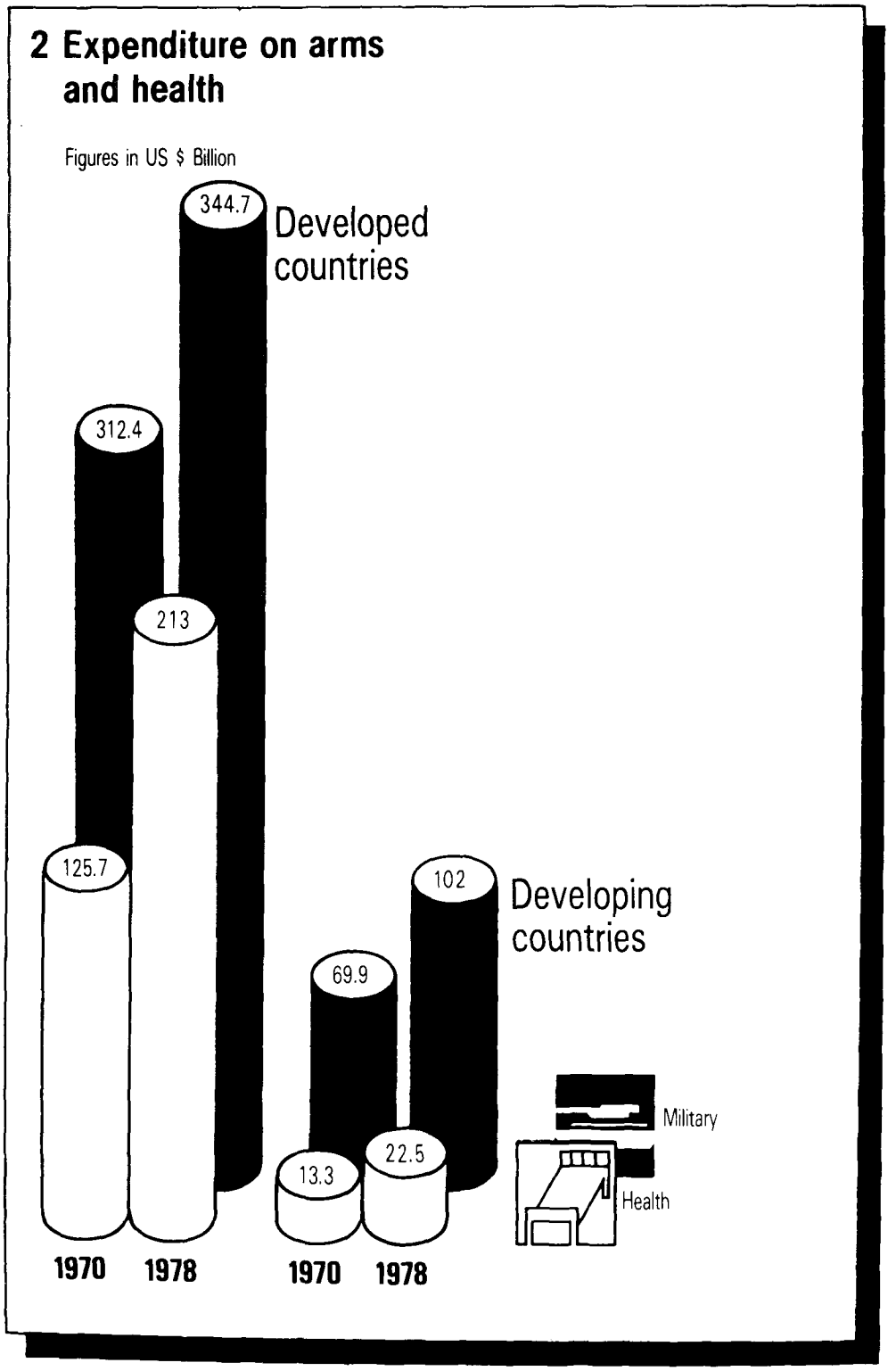
14. At the time of preparation of this report, a consensus had yet to emerge on whether or not the world is emerging from its most serious post-war recession. Certainly, in a number of countries in North America, South and East Asia and Eastern Europe there are indications of a revival in economic performance. In some of the developed countries, the inflation rate has fallen, but—according to some economists—at the expense of continued high levels of unemployment. In 1982, 32 million people, some 8.5 per cent of the total civilian labour force in the developed market economies, were jobless —a post-war record [2] and output fell, led by a sharp 2 per cent drop in North America. Gross fixed investment by industrialized countries, which had fallen each year since 1972, dropped by over 3 per cent in 1982.[2]

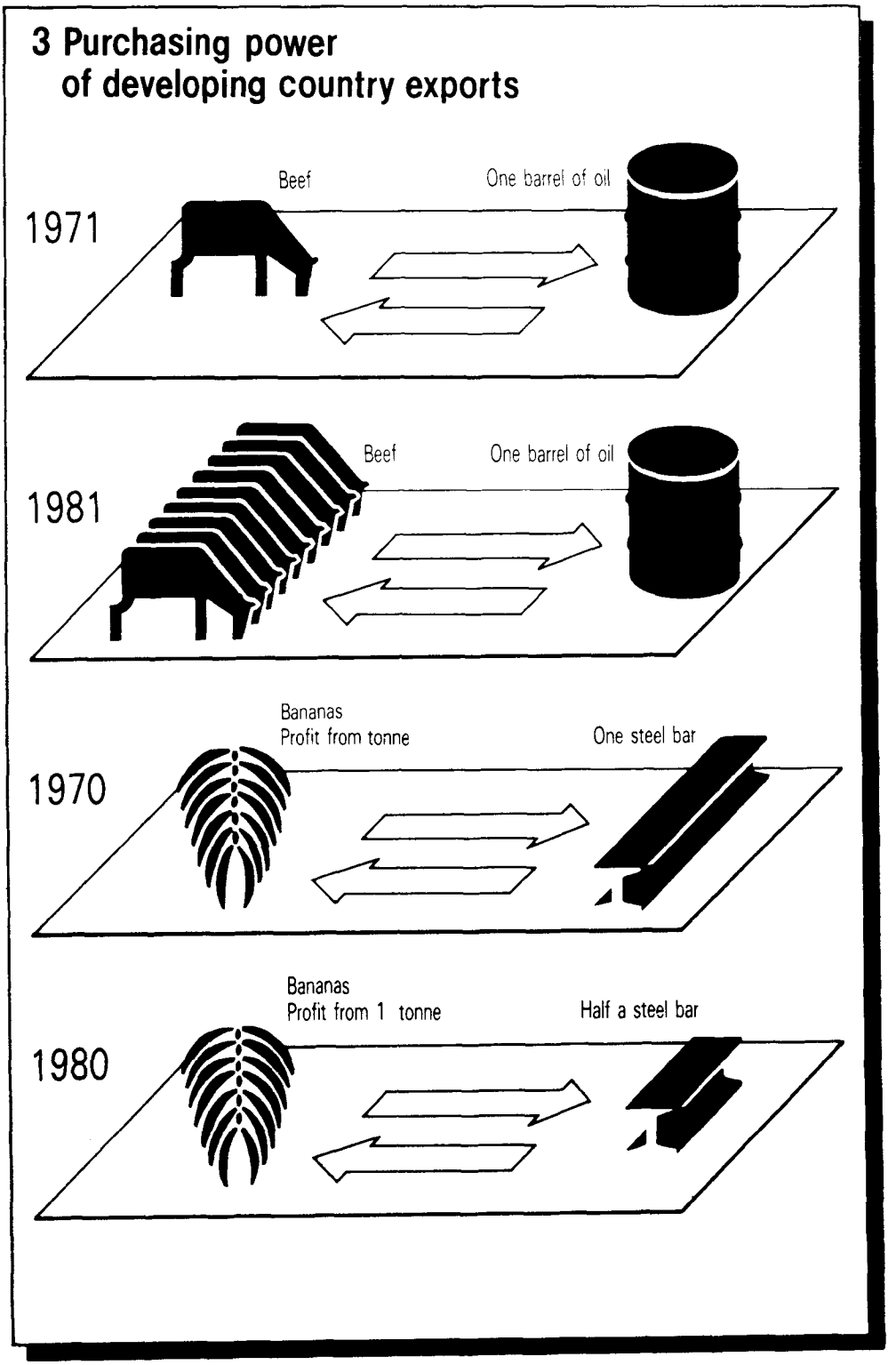
15. There are signs of economic recovery in some developed nations, but while the possible extent of the impact of such recovery on the developing countries is not clear, there is little evidence that this improvement is having a beneficial impact on them. For example, 1983 is expected to be the sixth consecutive year of falling *per capita* income for the African group of countries.[1] Taking all the developing countries together, the final figures for 1983 were expected to show almost no growth in total output for the third year in a row and to result in an actual decline of *per capita* income in the majority of these countries. Further, deteriorating foreign balances compelled them to make drastic cuts in their imports from the developed world as well as from among themselves. The uncertainty surrounding the indications of economic recovery appears to indicate that the underlying causes of the global recession have not been overcome. In any case, what is needed is not only the recovery of a limited number of countries, but rather the resumption of a healthy, balanced sustainable development process in all parts of the globe.

16. While the state of the world environment is not directly dependent on short-term economic fluctuations, it cannot be considered to be isolated from them. Owing to the financial strains to which the developed countries have been exposed during the years of recession, there has evidently been less readiness and capacity on their part to deal with the problems of environmental improvement in the developing countries—or indeed in the developed countries themselves: the concern over foreign trade balances has led many developed countries to accelerate the shift from gas and oil towards coal, thus potentially aggravating acid rain and other forms of air pollution.

17. As this report will demonstrate, the world community is confronted by a closed cycle: economic problems cause environmental despoliation which, in turn, makes economic and structural reform more difficult to achieve. Breaking the cycle requires a new earnestness from nations in their approach to environmental co-operation. Two major causes of environmental destruction should be tackled now. First, the arms race, with its insatiable demands on global financial, material and intellectual resources, must be slowed. To indicate the magnitude, both absolute and relative, of the sums involved, Figure 2 compares the expenditures of developed and developing countries on arms and health. If arms expenditures could be reduced, those resources could then be liberated to deal with furthering human welfare. The starting point must be an easing of tensions between East and West. The second requirement is alleviating the appalling debt burden of many developing countries. The debt burden and regressive terms of trade therefore place pressure not only on the economic surplus produced by developing countries, but also, and increasingly on resources, which have to be over-exploited to ease the debt burden. For instance, for one Latin American Country it took 9.8 times as much beef to buy a barrel of oil in 1981 as it did in 1973. Similarly, at the end of the 1970s, profits from the export of one ton of bananas were enough to purchase only half the steel they would have bought 10 years earlier.[6] These strikings fact are illustrated in Figure 3. The total debt service payments for all developing countries in 1982 came to $93 billion.[5] This transfer of funds represents a major obstacle to economic revival. The fall in prices of cash crops and primary products relative to the cost of oil and manufactured goods has added to the burden.

2 Expenditure on arms and health




3 Purchasing power of developing country exports
1971
Beef
One barrel of oil
1981
Beef
One barrel of oil
1970
Bananas
Profit from tonne
One steel bar
1980
Bananas
Profit from 1 tonne
Half a steel bar

B. THE STATE OF THE DIALOGUE

18. The Secretary-General of the United Nations observed in his report on the work of the Organization (A/38/1) that recent trends and events have made a clear retreat from the degree of multilateral co-operation which the United Nations has helped to bring about and develop. The Secretary-General pointed to the dangerous erosion of the historic effort to build an international system designed to provide peace, security, stability and justice for everyone and said that "Although in the short term the world may get by without such an effort, in the long term such a system, evolving through a conscious political effort by all States, is indispensable if we are to avoid chaos and disaster on a scale hitherto unknown."

19. The expectations raised by the Cancun Summit have so far not been realized, although the emphasis by some participants on the need to attack the problem of increasing agricultural productivity indirectly and implicitly brought environmental issues to the forefront of attention and concern. The call for an immediate launching of global negotiations (General Assembly resolution 34/138) remains unrealized. The results of the sixth United Nations Conference on Trade and Development have been disappointing for many, particularly developing countries. A similar disappointment has been felt over the failure to translate the prescriptions for global economic recovery expressed in the Williamsburg Summit Declaration into concrete action.

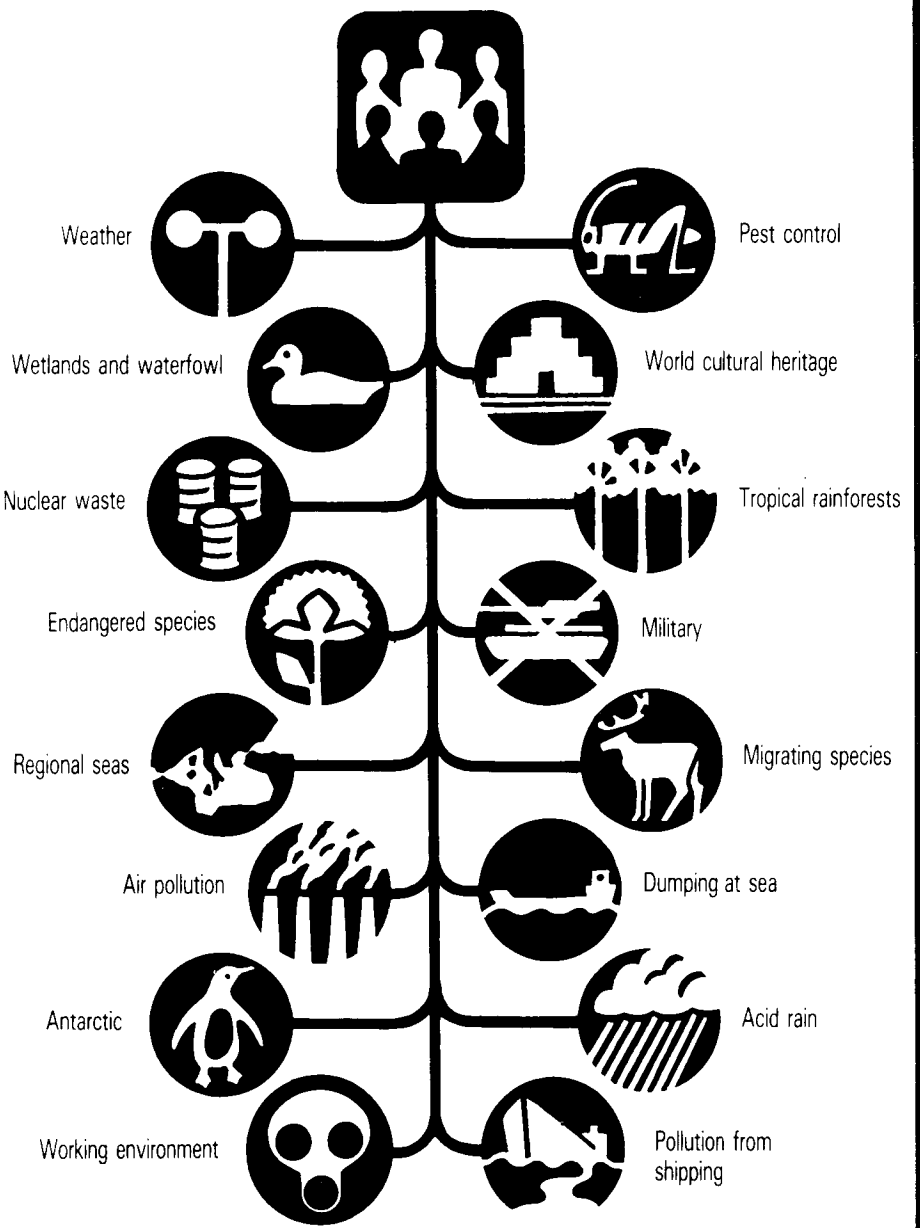
20. In the field of the environment, the preparedness of Governments to translate good intentions into action has been more positive. The trade in endangered species, wetlands and world heritage conventions have provided major instruments for co-operation between and among developed and developing countries. Figure 4 indicates the subject areas of a number of major environmental agreements concluded since 1970. The favourable international reception afforded the publication of the UNEP state of the environment reports, the World Conservation Strategy and the World Charter for Nature is a further illustration of international support for environmental protection. The conviction that environment can provide a fertile area for intergovernmental co-operation is borne out by experience.

21. In building on that record, an important responsibility devolves to UNEP's Governing Council. The Council has a solid record of achievement in this respect. Under the auspices and policy guidance of the Governing Council, UNEP's regional seas accords, for example, have provided a forum where countries experiencing wide political and social differences could come together to implement co-operative environmental action.

22. In a variety of other world forums, too, there have been signs of a new preparedness to accommodate the environment, as in the International Whaling Commission, in the recent International Tropical Timber Agreement and in the International Undertaking on Plant Genetic Resources. In all these instances, a balance of interest between developed and developing countries proved decisive.

23. The principal focus for the dialogue on environment among developing nations has been the meetings of the non-aligned countries and the Group

4 International agreements on the environment



113 conventions and protocols are currently listed in the UNEP register of international treaties and other agreements in the field of the environment

of 77. Agreement has emerged on the overriding need for strengthening and broadening the Caracas Programme of Action on Economic Co-operation among Developing Countries. The Group of 77 is currently exploring ways and means in which such co-operation can be furthered. That effort is being focused by the sectoral review meetings as recommended by the second meeting of the Inter-Governmental Follow-up and Co-ordination Committee held in Tunis. Particular emphasis has been placed on the need for greater co-ordination between the Group of 77 and the organizations directly involved in the work of applying the Caracas Programme of Action. The UNEP Governing Council itself has provided a major forum for co-operation among the members of the Group of 77. Typical of the Governing Council's prevailing spirit of co-operation is the provision of US $1 million by the Government of Argentina—to be used through UNEP's catalytic role—for technical assistance to help developing nations address serious environmental problems. Outside the Governing Council, the South Asian Co-operative Environment Programme provides another example of mutual assistance among developing countries.

24. Such efforts have been parallelled by related developments—for example, the inclusion of environment in the high-level discussions on Security and Co-operation in Europe—among industrialized countries. For a significant part of the last decade, the dialogue among these countries focused largely on environmental pollution problems, and on the curative approach. A series of strict European Community directives on pollution control provide an example. But in recent years there has been a marked shift to adopting preventive policies and taking preventive measures. The new emphasis is now characterized by a concern with: (a) anticipatory policies, (b) global environmental policies that originated within or even outside the region and (c) national and international resource management issues. Notable achievements have included the adoption of the Convention on Long-Range Transboundary Air Pollution and OECD's guiding principles concerning International Aspects of Environmental Policies and recommendations and decisions concerning the export and import of banned or severely restricted chemicals.

25. The decade since Stockholm has also witnessed an increase in environmental co-operation among the nations of the Council for Mutual Economic Assistance (CMEA). This has been accompanied by an increasing emphasis on environmental protection in the co-operation between CMEA member States and developing countries, which has included such topics as hydropower, water and land management and assistance with the installation of environmentally sound new plant and machinery.

26. A notable contribution to the dialogue has also been made by non-governmental organizations from the developed and, in the period after Stockholm, developing countries. Less constrained by political and economic considerations, such organizations have proved effective agents for increasing public awareness of environmental issues and mobilizing popular support.

27. It can be seen, then, that environmental problems have been present in the overall dialogue between and among developed and developing countries. But it must be stressed that relative to the preoccupation with apparently more pressing economic, financial and fiscal questions, the environmental dimension has not been afforded the priority it merits. It may be argued, indeed, that the present economic crisis cannot be

overcome without establishing new less wasteful and environmentally sound resource use patterns. There is, thus, an urgency now for the dialogue, implicitly and explicitly, to take proper account of the close relationship between economic activity and the state of the environment. Indeed, the point has now been reached where the dialogue must be followed by appropriate action.

28. In this context, the nature and time perspective of some environmental issues also need to be taken into account. Some important environmental issues, with pronounced implications for the international and national economies (for example climatic change, soil degradation, desertification and forest depletion), tend to be longer-term, and in terms of both their causes and their manifestations are not easy to fit into the standard frame of reference of international economic negotiation. Indeed, the whole negotiating process, as presently conceived, is often ill-suited to dealing with such prospects as threats to the health and genetic heritage of future generations, the degradation of ecosystems, the projected disappearance of some tropical forests in 25 years time, or the long-range transport and synergistic interactions of pollutants. Such environmental issues are often inconspicuous, are not felt immediately, are difficult to quantify, and like issues such as health, education and social benefits are not easily reducible to the standard cost-benefit equations, methods and objectives that guide countries, negotiators and decision-makers in how they think and what they do. And they often involve foregoing today's tangible economic benefits for tomorrow's intangibles. Yet, difficult though it may be to deal with short-term and long-term issues in the same process with the same sense of urgency, many issues with long-term consequences do require short-term actions.

29. Furthermore, environmental issues may need to be dealt with on different geographical scales, as well as on different time-scales. In other words, they may arise, and/or require action, at the global, regional, subregional or other levels. Problems of global concern, including those of the joint management of the global commons and of environmental interdependence, can be dealt with in the overall setting of multilateral international negotiations. A case in point is the law of the sea. There are also clearly identifiable issues characteristic of given geographical settings and countries, which are best dealt with regionally, sub-regionally or nationally, even though many of these have a broader significance. The overall frameworks and economic and political environments at the international level do affect, and should be supportive of, the actions required at the regional, subregional, or national levels.

C. RELEVANCE OF ISSUES IN THE ECONOMIC DIALOGUE TO THE ENVIRONMENT

30. The dialogue is intended to bring about the equitable economic and social development of all countries, with the linkages between the welfare of the developed and developing countries being explicitly recognized and used to support the achievement of this objective. There are aspects of the present situation which have negative consequences on the environment, and these negative consequences, in turn, make equitable economic and social development more difficult to achieve. This results in destructive, self-reinforcing cycles. The issue of interdependence, which has considered in economic terms in various forums in recent years, should also be seen in terms of environmental

31. Poverty is by far the most important cause of environmental destruction. It degrades the human environment and in so doing obstructs development. For instance, the lack of safe drinking water for over 1300 million people and of sanitation for over 1700 million is the most severe form of pollution caused by poverty—responsible, according to WHO, for 25,000 deaths a day and for 80 per cent of world disease.[7] Figure 5 shows these figures in graphic form, giving for comparison also the world population and that of Europe and the United States of America. The death, debilitation and disease caused by contaminated water have been a severe brake on development: a survey carried out by a South American Government showed that the provision of clean rural water can recoup costs five to seven times over by the number of working days it continues to save.[8]

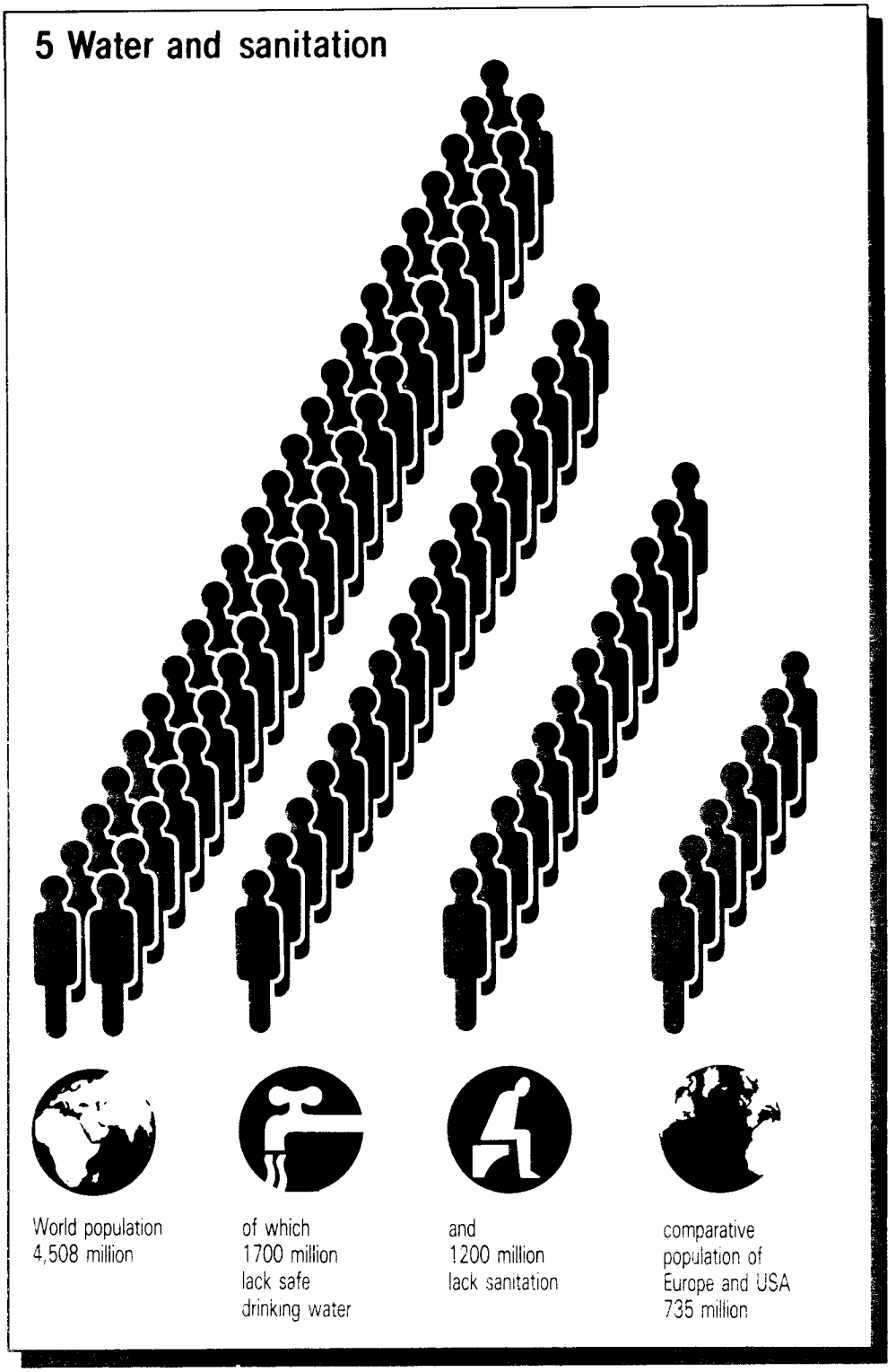
32. Poverty has contributed, too, to human population pressures. A recent survey by UNICEF has shown that high mortality rates act as an encouragement for larger families.[9] Poor villagers and town dwellers see in the largest possible family a chance of security in old age. Lowered mortality seems to increase the incentive to reduce family size. Mortality rates have dropped through the impact of global technological change, but birth rates have continued to follow a traditional pattern because of a lack of economic development that is sustainable. If the rate of population increase is to be slowed significantly, the poor must be given reason to have confidence in their future by ensuring that they have a major stake in the development process and an equitable share in the benefits of development.

33. The many other ways in which poverty contributes to the cycle of destruction are equally far-reaching. Lack of adequate shelter increases vulnerability to natural disasters, and the marginal settlements in the rapidly expanding urban areas of the developing world are prime examples of degraded environments. Desertification, deforestation, soil erosion and salinization result as inappropriate agricultural practices are used to meet the desperate need for food.

34. In this situation, absolute poverty and malnutrition increase among people living at or near the subsistence level. According to FAO nearly half the rural population of the developing countries now live below the official poverty line.[10] No development which does not tackle the main causative agent of environmental impoverishment is worthy of the name. If the dialogue is to achieve much, it will have to provide for the establishment of the economic means needed to deal with the water, nutritional, human settlements and other poverty-related issues of the developing world.

35. Over-consumption and wasteful use of resources by the developed nations and the privileged strata in the developing world pose a threat to the environment comparable with poverty. The build-up of carbon dioxide in the atmosphere and industrial pollution are only a few manifestations among many. However, the global problems created by inequitable development go far deeper. The demands of the developed countries for resources from the developing nations add to the pressures on their environment. The commitment of increasing amounts of the most fertile land in the developing countries to grow cash crops for consumption in the industrial countries provides an instance. Unsustainable demands on fish resources and tropical forest cover are two more.

36. Thus, the effect of population increases and people's patterns of consumption and


5 Water and sanitation
World population
4,508 million
of which
1700 million
lack safe
drinking water
and
1200 million
lack sanitation
comparative
population of
Europe and USA
735 million

production has been to upset the balance between people and resources, hence leading to deterioration of the environment. The economic future of developed and developing countries is not dependent only on the laws of trade and finance, but on environmentally sound development co-operation. To be beneficial, such co-operation should deal not only with the relations among man, but also with the relations between man and nature.

37. Food production and trade are becoming major global issues due to the growing food deficit of a large number of developing countries. While the world as a whole is producing enough food to sustain the present level of the world's population, the inequality in food distribution leaves millions of people under-nourished. The current situation in which exportable surpluses are produced in high-cost developed regions while developing nations have no means to pay for such surpluses works to the benefit of neither the industrialized nor the developing countries. It is therefore important that agricultural production and subsidizing policies in the developed countries do not discourage agricultural development in the developing countries.

38. Agricultural development in the developing countries should not be seen exclusively as a basic economic activity which provides the food for human sustenance, or as an activity to provide employment for growing populations, but should be considered from the point of view of maintaining sustainable production. Inappropriate methods of land cultivation as well as backward land tenure systems have not only produced less than optimal yields, but have also contributed to increasing land exhaustion, as well as to salinization, erosion and desertification. Increased use of fertilizers and pesticides combined with large-scale irrigation will greatly affect the environment, and care is needed if the overall impact is to be positive. Efforts directed towards modernizing world agriculture should take fully into account the environmental connections of this basic human activity, so that the objectives of producing food and providing employment may be reached in the short term, and the achievement sustained in the long term.

39. The world commodity issue and the demand for rationalization and control of commodity markets might look at first sight to be an almost exclusively economic, and only derivatively social, one. The often stated objective is to stabilize the markets in such a way as to obtain remunerative prices and higher incomes for primary producers. But the issue has important environmental aspects, which have not entered directly into the negotiations. The instability of commodity markets leads to irrational and wasteful allocation of resources; periods of high prices and demand lead to an expansion of the area under cultivation for a particular crop, which is then in oversupply during the periods of falling prices and demand. And as the environment cannot adjust as quickly as the markets change, the environmental damage persists.

40. Energy is a major item in the global dialogue. The dependence of the world economy on petroleum, a non-renewable source of energy, became clear in the last decade of rapidly rising oil prices, as did the importance of conservation and of diversification and substitution in sources of energy. Today, the average manufactured product in the industrialized countries is being produced with twenty per cent less energy input than a decade ago.[11] As regards diversification and substitution, there is increased reliance on coal and on nuclear energy, with new actual and potential impacts on the environment. Other contraints of substitution appear when, for instance, the effects of increased ethanol consumption are considered in the light of its impact on food production and on tropical for-

ests. Clearly, any energy transition must be achieved in full knowledge of the environmental impacts of various forms of energy production and use, and must be based on rational decisions on the desired energy mix. The current depressed demand for oil has provided a breathing space that should be used to achieve a transition based on careful choices. Assisting developing countries in making the transition successfully must be seen as serving the interests of the global environment.

41. Major environmental problems also occur because of the unchecked use of often environmentally imprudent technologies, or of the use of technology in a manner inappropriate in the light of current knowledge. Examples of such problems are toxic wastes, threats to the ozone layer and to coastal areas, effluents from feeding lots, possible climate change, etc. The economic effects—worldwide—of such environmental problems could be severe. Indeed, technology is crucial in terms of the impacts, positive and negative, its use has on the environment. In the industrialized countries, the capacity to ascertain and evaluate these impacts is growing. However, only a small percentage of the world's scientific and research capacity is found in the developing countries. The current pattern of technology use has therefore been elaborated in the economic, social and environmental conditions of the developed countries. The environmental soundness of any particular technology in the local conditions for which it is intended should be a fundamental element in deciding upon its appropriateness.

42. Careful consideration is also needed of other economic issues which enter into international economic relations. Almost all these issues have important environmental aspects which, if taken appropriately into account, can only reinforce the possibility of achieving the general intent. Some instances are given below.

43. Developing countries are facing increasing difficulty in their efforts to find adequate resources, particularly foreign exchange, to step up their pace of development. This has often compelled them to focus on shorter-term aspects without giving adequate weight to longer-term considerations. The high real interest rates prevailing in the last few years have tended to reinforce these effects, since high interest rates tend to skew cost/benefit assessments unduly towards short-term benefits. Environmental issues, the impact of which is felt over a longer period, are discounted by this forced short-term perspective.

44. A one per cent increase in interest rates adds approximately $5 billion [12] to the debt burden of developing countries. To have increased its export earnings (not profits) by one billion dollars in 1981, South America as a whole would have had to increase its banana exports threefold, Ecuador fivefold and Colombia ninefold, while leading cotton exporters like Egypt and Turkey would have had to double and triple their cotton exports.[13] This would have meant bringing millions of additional hectares into production to grow these export crops.

45. Where programmes of "adjustment" are imposed that require sharp falls in living standards, increased exports and reductions in domestic investment, it is proving increasingly difficult to give adequate attention to longer-term concerns. In many countries, the distortion towards the short-term leads to a balancing of accounts in which the rate of return on investment has to be unrealistically high and measures of environmen-

tal protection are seen as diminishing such returns.

46. The current economic situation, which would appear to call for more co-operation amongst developing countries, in fact makes it more difficult to achieve as the lead which ties developing countries' economies to developed countries' economies is tightened, giving developing countries less room to manoeuvre.

47. Another factor is that the world is undergoing a period of rapid technological evolution owing, among other things, to a growing understanding of the energy and resource use and environmental impacts of current technologies. Thus, many new technologies, developed with such understanding, tend to be environmentally more benign than those they supplanted, while a number of others, for example in electronics, are inherently less resource intensive. The extent to which developed countries apply such new technologies is affected on the one hand by their commitment to existing industrial patterns, and on the other by their greater economic capacity to invest in them; developing countries, on the other hand, are less committed to existing industrial patterns, but lack the economic capacity to invest in new technologies or to adequately evaluate technologies. For developing countries to be tied to environmentally inappropriate technologies is ultimately counter-productive not only for their environments and for the global environment, but also for their economies. Increased transfer of technology to developing countries should be accompanied by the provision of data which would permit informed choice in the light of local conditions, and the capacity of these countries to evolve suitable technologies should be strengthened.

48. In concluding this section, it can be said that traditional economic and industrial approaches are often incompatible with sustainable environmental development. As a result, resources have often been wasted. There are many examples of devastation of both renewable and non-renewable resources (forests, minerals including underground fuels, soils, etc.) which can be shown to have their causes in false political and economic assumptions, often based on short-term calculations. The cost of overexploitation is not carried by the exploiting enterprise and its immediate region alone, but is often spread widely and over several generations. And the environmental side effects are "internalized" by the national economies of the countries concerned through deterioration of income, national wealth, or conditions of life.

49. Where a commitment to conservation is generated, for instance in energy consumption in many parts of the world, it is clear that higher levels of production per unit of energy use can be achieved. There is a lesson here for the use of other natural resources. While productivity in terms of output per person/hour is an important economic yardstick, thought given to output per unit of resource use would possibly prove illuminating. A basic question is whether equitable development for all could be achieved on a sustainable basis were resource-intensive patterns of production and consumption to be generalized.

50. The central question today, therefore is not whether to choose between development/industrialization and environment. It is how to select patterns of development that not only minimize adverse impacts, but are actually designed to stabilize and improve environmental, and hence economic, conditions. International economic co-operation

is vital in this context. What is required is a more integrated approach towards evolving an international economic system which responds adequately to the financial and other development needs of developing countries in the context of an equitable and efficient adjustment process.

51. At the beginning of this section, it was pointed out that negative environment and development cycles undermine the achievement of the intent of the dialogue. The argument which follows in the next section points in directions where the possibility of positive reinforcing cycles exists when actions are taken in the light of knowledge of the interrelationships between people, resources, environment and development.

D. RELEVANCE OF ENVIRONMENTAL ISSUES TO THE ECONOMIC DIALOGUE

52. While the previous section examined the implications for the environment of broadly economic issues, the present section presents the converse argument, by examining the relevance of some specifically environmental issues to the economic dialogue. Before doing so, however, a brief reiteration of the overall relevance of the environmental debate to the broader dialogue is in order.

53. The systems nature of the global environment is highly relevant to a set of issues such as depletion of stratospheric ozone, long range transport of pollutants, climatic change resulting from carbon dioxide accumulation, marine pollution, the movement of hazardous products in international trade, and disposal of toxic waste. Such problems are now seen as likely to have significant consequences for the development and well-being of the developing countries, which have not in the past, for historical or other reasons, taken a sufficient interest in their resolution, although they are now increasingly aware of the implications. Developed countries, in turn, domestically and within their own regional groupings, have been engaged in an intensive search for solutions, and for ways of resolving the potential or actual differences arising among them on account of these new phenomena. Their actions in turn also have significant effects on the developing countries. The global environmental system, therefore, is not self-contained: environmental issues are closely linked to the effort to bring about the equitable economic and social development of all countries.

54. It must indeed be recognized that environmental problems have global, as well as regional and local dimensions. Environmental problem-solving has created its own natural selection process. Some problems—threats to the ozone layer, carbon dioxide build-up—can only be tackled by way of co-ordinated multilateral and worldwide action. A separate category can be more effectively treated at the regional level—protecting enclosed seas, managing river basins. Other problems lend themselves to the various forms of national action. Examples are: tree planting, urban renewal programmes, national environmental protection laws. At none of these levels, however, can actions be effectively applied if environment is considered to be a separate item. Acceptance of this fact will add a new dimension to the proposal for a global negotiation within the United Nations and the review and appraisal—now under way—of the International Development Strategy.

55. Returning now to specific environmental topics, the maintenance of genetic resources and diversity is an important environmental issue, but it is seldom realized just how important it is to economic development. The rapid shift to intensive agriculture and monocultures has created a vulnerability that requires the maintenance of natural stocks. The economic value of these genetic reserves—located for the most part in the developing world—is difficult to quantify in strict monetary terms, but certainly it amounts to billions of dollars each year.

56. Much thought is being given in developed countries to re-industrialization, moving to a post-industrial economy with industries like micro-electronics and biotechnology coming to the fore. However, now and for the foreseeable future, a number, if not most, of the industrialized countries will continue to be reliant in part upon the developing world for food, energy and industrial raw materials. The industrialized countries will continue to rely for their industrial processes on a wide range of natural products such as dyes, resins, pectins, tannins, fats, waxes, pyrethrum and other natural pesticides. For the most part, these come from the developing countries, as do a number of foodstuffs like sugar, coffee and tea.

57. Similar arguments regarding the economic advantage to one part of the world resulting from sound environmental management in another can be adduced in other areas. The dependence of the pulp, paper and furniture industries on sustained exploitation of tropical forests, and of the tourism industry on national parks and wildlife and on unpolluted natural scenic attractions and coastlines, are other such examples.

58. A particular environmental issue is that of environmental standards for industry and their possible impact on world trade. Agreement upon such environmental principles or guidelines among developing countries might encourage the developed countries, because of the systems nature of the global environment, to take account of their increasing stake in supporting and assisting developing countries in their efforts achieve better natural resource management. Such a possibility opens up a fruitful subject for consideration and negotiation where the enlightened self-interest of developed and developing countries coincides.

59. The expansion of technical co-operation between developed and developing countries and among developing countries themselves, to help in the application of environmental principles or guidelines, could also be a valuable subject for consideration. The growing interest of developing countries in pollution abatement and control as an aspect of their co-operation with each other is now recognized. Recent examples of problems which would benefit from such co-operation include the impact of coal slurries from one African country on neighbouring countries and the impacts of intensive pesticide use beyond frontiers.

60. Environmental degradation in regions such as the Sahel, the Himalayan foothills, the Caribbean and the Indus Basin has had a demonstrable impact on the economies of the countries concerned. Such macro-environmental problems have caused macro-economic problems in the affected regions and, taken together, the world economy. For instance, they diminish purchasing power and hence world trade, and raise issues of food self-sufficiency, of the diversion of resources to deal with environmental catastrophes,

of the inflationary effect of lowered economic productivity, of lowered rates of investment, of population growth in fragile ecosystems and of environmental refugees.

61. Very significant opportunities for economic advance would be opened up by efforts to deal with these macro-environmental problems. A context for such efforts is provided by UNEP's work on the interrelationships between people, resources, environment and development, which seeks to apply a systems approach to environmental and developmental problems by aiming actions at points of leverage. Opportunities are afforded, for instance, by transnational projects to combat desertification and by the reforestation of the Himalayan foothills. The generation of employment in efforts to combat environmental problems and the consequent reduction in poverty levels may set in train positive developmental cycles. Such efforts afford augmented possibilities of co-operation among developing countries, as appears from the SACEP and ASEAN environmental programmes.

62. A co-operative spirit among developing countries themselves, and between developed and developing countries, should also help in dealing with some specific problems which presently cause bad feelings on one side or the other. Included are the issues of:

(a) Location of highly polluting industries in the developing countries without any precautions being taken to protect the local environment and the affected populations;

(b) Employment of local people in hazardous working environments, without either undertaking precautionary measures or fully informing the workers and national authorities of the hazards involved;

(c) Export of dangerous and toxic products, such as some types of pesticides which are prohibited for use or closely regulated in the producing countries, without warning to the importing developing countries;

(d) Export and dumping of toxic wastes.

63. There is a need to create a code or codes of environmental conduct, through which the mutuality of interests and the urge towards co-operation would find expression, and which would provide a framework also for the activities of transnational corporations.

64. The possibilities for co-operation mentioned above are opportunities for all countries to work together to their mutual benefit. However, resource constraints make it difficult for developing countries to participate fully in efforts directed towards this end. The recent trend is for levels of official development assistance to developing countries to fall in real terms. Against this background, the emphasis that should be placed on the environmental protection programmes of developing countries becomes difficult to achieve. The interrelationship between environmental and economic issues is a strong argument for higher levels of development assistance and concessional aid.

II. THE INTERDEPENDENCE OF ENVIRONMENTAL CONCERNS

65. Over the past decade the metaphors used to describe mankind's shared life on "Only One Earth" have dramatically changed from the concept of a spaceship to that of a lifeboat,[14] from choosing to work together to achieve a common purpose on "Spaceship Earth"[15] to being increasingly forced by circumstances to work together to avoid common problems.

66. Halting and reversing ecological degradation has been identified as a major priority in a growing volume of major national and international studies and reports, including many where the principal concern was national and international economic development. For example, the recent report of the Independent Commission on International Development Issues entitled "Common Crisis North-South: Co-operation for World Recovery" stated:

> "Growing pressure on land, increasing use of chemicals, desertification and deforestation are reducing the productivity of soils in many parts of the world. The removal of forest cover, incautious use of chemicals and fertilizers, and soil erosion are destroying the soils and agricultural potential of scarce land resources and causing severe environmental damage... We emphasize the need for resources to halt and reverse these processes of ecological degradation, which now assume emergency proportions."[16]

67. Such reports[17] have contributed to a much greater awareness and understanding of the interdependence among species and among nations. They have drawn on a fast-expanding knowledge of the interrelatedness of the environment. Advances in environmental monitoring and biological sciences combined with harsh experience in national economic development have given an insight into the nature and workings of environmental linkages. This new understanding has helped to bring into sharper focus the two-sided reality of interdependence. In many areas there are opportunities for improved international co-operation by all members of the international community; equally, there are also increasingly severe disadvantages for all if international co-operation is not strengthened.

68. The selected problems briefly described in this chapter occur largely in developing countries. As a result, they have too often been previously considered by many in developed countries as problems exclusively affecting developing countries. On the other hand, in developing countries some of those same problems are considered in part as caused directly or indirectly by past or present policies and actions originating in developed countries. But there is now increasing recognition that effective responses to these

environmental problems will require new approaches and action in, between and among developing and developed countries, with different but at least some positive advantages for all.

69. Discussions in UNEP's Governing Council over the years have led to the identification of a number of serious environmental problems of relevance to both developed and developing countries. The list is long. It includes, for example, monitoring and assessment of major pollutants; CO_2 build-up in the atmosphere; possible depletion of the ozone layer; acid rains; hazardous waste; toxic chemicals; water management problems, loss of forests and genetic resources; desertification; coastal area management; protection of the marine environment in enclosed and semi-enclosed seas, etc.

70. For the purposes of this part of the report, it was necessary to be selective. The following issues have been chosen to illustrate the emerging aspects of economic and ecological interdependence: loss of species; loss of tropical forests; desertificaton; differing environmental standards and their relation to international investment and trade; and, in a summary section on other issues of global significance, CO_2 build-up and harmful chemicals.

A. *Loss of species* [18]

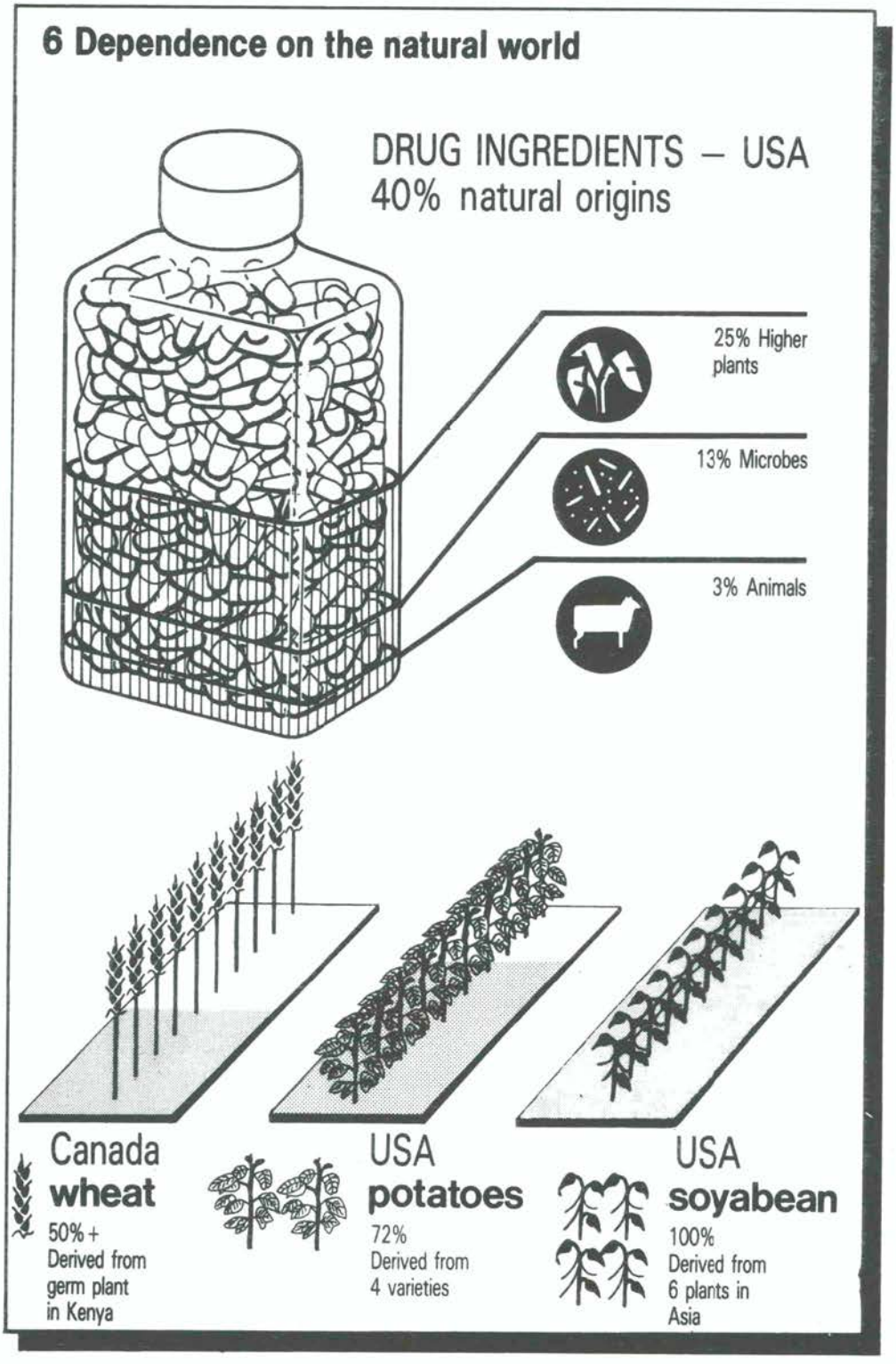
71. Some 25,000 plant species and more than 1,000 vertebrate species and sub-species are now estimated to be threatened with extinction, yet these two categories of organisms represent only a small proportion of the terrestrial species on the planet. According to some estimates as much as from half a million to a million species could be extinguished over the next two decades. Extinction of species on this compressed scale would be without precedent in human history.

72. As much as two-thirds of all terrestrial species and the majority of endangered species are located in developing countries. A significant loss of species in developing countries would have a world-wide effect on future agriculture, industry and science, and on human health and welfare generally. The most serious threat to many species is the disruption and destruction of their habitat by man, especially in the tropical forests which alone harbour as much as 40 per cent of all terrestrial species.

73. Significant species loss could directly affect human health and welfare locally, and even nationally, in many developing countries, where wild plants and animals are a source of fodder, traditional medicines and income, especially for the poor in rural areas. In some countries, tourism based largely on wildlife is a major source of foreign exchange.

74. In many developed countries over one-third of the gain in the productivity of many major agricultural crops over the last few decades has been attributed to breeding programmes using genetic materials from related wild plant varieties, many of which are found in developing countries.

75. Moreover, many of the major crops in developed countries now have a limited genetic base. For example, more than half the Canadian prairie wheatlands are devoted


6 Dependence on the natural world
DRUG INGREDIENTS – USA
40% natural origins
25% Higher plants
13% Microbes
3% Animals
Canada
wheat
50% +
Derived from germ plant in Kenya
USA
potatoes
72%
Derived from 4 varieties
USA
soyabean
100%
Derived from 6 plants in Asia

to a single variety, Neepawa, which was developed with germplasm from Kenya; 72 per cent of United States potato production depends on only four varieties; and the entire United States soybean industry is derived from a mere six plants from Asia. Figure 6 illustrates these dependences in graphic form. A significant loss of relevant wild species could limit the possibilities for maintaining or increasing the yields of major crops, such as wheat, maize, rice, potatoes and for combating new strains of diseases or pests which threaten them.

76. As is apparent from the above examples, genetic stocks from one part of the world frequently make an enormous contribution to another. For instance, the "Green Revolution" relied heavily and continues to rely on such genetic stocks, and the contribution of a weevil from the United Republic of Cameroon to raising palm oil production in Malaysia is estimated to be worth $150 million a year. There is no reason to assume that such contributions will not be needed in the future. Current research shows that enormous opportunities lie ahead, such as the utilization of Asian blue-green algae to fix nitrogen for crop fertilization, which may constitute a gain of hundreds of millions of dollars a year to the economies of developed countries alone.

77. Major medicines and other pharmaceutical products in developed countries are also often dependent on plant and animal species. For the United States of America it has been estimated that more than 40 per cent of the prescriptions written each year contain a drug of natural origin—from higher plants (25 per cent), microbes (13 per cent) or animals (3 per cent)—as the sole active ingredient or as one of the main ones. These percentages are also illustrated in Figure 6.

78. As present medicines and pharmaceuticals derived from the relatively small number of higher plants screened to date have already an annual sales value of billions of dollars, a significant loss of other potentially useful plant species from among the many yet to be screened could represent an annual sales value loss many times higher. The commercial sales in developed countries of drugs and pharmaceuticals derived in some form from plants have recently been estimated to amount to around $40 billion a year. Based on that figure, it has been further estimated that among the 10 per cent of species that might be extinguished by the year 2000 there could be many plants with potential for use in new plant-based drugs and pharmaceuticals with a combined worldwide commercial sales value of as much as $200 billion annually.[19]

79. Biomedical research in developed countries is also vitally dependent on wild species, many of which are threatened with extinction. The innovative capacity and future of the rapidly expanding field of bio-technology, practised largely in developed countries, relies considerably on genetic patterns and resources from many wild plants and animals. As only about 10 per cent of the world's plant species and 1 per cent of the animal species have so far been subjected to even a preliminary screening for potential medical or commercial applications, a significant loss of species could also represent a permanent loss of sources for more effective chemicals, medicines and other useful products.

80. In spite of this interdependent relationship, species loss continues to accelerate.

Developing countries often lack the capacity and economic incentive for extensive species protection. They have derived little or no economic benefit from the development and use of genetic materials in developed countries, where the scientific and technical expertise to exploit species and their genetic resources predominantly resides. Moreover, the imperatives of their own national economic development have usually created even greater pressures on the habitats of many species. Nevertheless, developing countries are and will remain the principal sources of genetic materials from wild plants and animals, as together they contain as much as two-thirds of all terrestrial species on this planet.

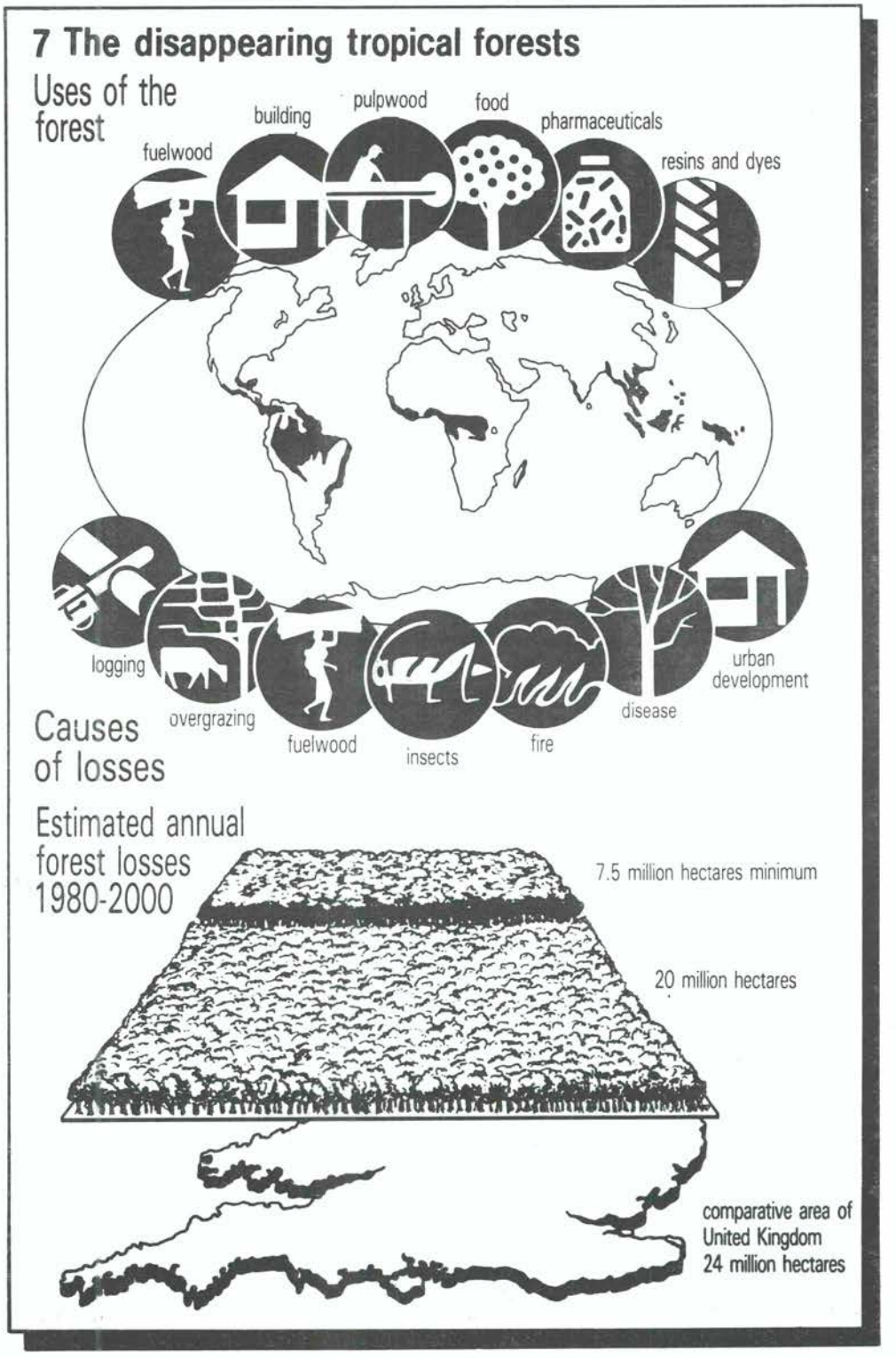
81. The preceding analysis clearly shows that there is a common incentive for developed and developing nations to prevent a potentially catastrophic loss of species. The mutual advantages of a comprehensive joint effort could result in new medicines and other useful products that would contribute to improved levels of human health and welfare in all countries.

B. LOSS OF TROPICAL FORESTS[20]

82. Although tropical forests are found in nearly half of all United Nations Member States, most are in twenty countries and nearly half their total area in three countries alone (Brazil, Indonesia and Zaire). The tropical forests are the world's richest biological zones, and are estimated to contain as much as 40 per cent of all terrestrial species on the planet. In addition, tropical forests provide a wide range of useful products (e.g. fuelwood, building materials, pulpwood, food, pharmaceuticals, resins, gums, dyes) of economic significance for both developing and developed countries. Undisturbed tropical forests are also home to millions of the world's tribal peoples.

83. Many experts contend that tropical forests are being exploited at a rate and in a way that is ecologically destructive and economically unsustainable. There are varying estimates of how much of the tropical forests will be lost by the year 2000 through complete conversion to other uses and by severe degradation. The results of the tropical forest resource assessment project conducted by FAO and UNEP indicate an estimated minimum loss of closed tropical forests of 12.5 per cent by the year 2000 (an average of 7.5 million hectares annually between 1980-2000 through complete conversion to other uses alone. Other studies which not only consider complete conversion but also include severe degradation (caused, for example, by logging operations, by over-grazing, by over-exploitation for fuelwood, or by natural causes such as fires, insects and diseases) have estimated losses of tropical forests as up to 20 million hectares or more a year. Figure 7 compares these areas graphically with that of the United Kingdom of Great Britain and Northern Ireland, and also shows the location of the tropical forests, their uses and the causes of forest loss. The FAO/UNEP study estimates that tree planting on industrial and non-industrial plantations accounts for only 10 per cent of the area of tropical forests cleared annually.

84. Even for an estimated minimum loss of 12.5 per cent of the closed tropical forests by the year 2000, the economic, ecological, social and other costs have yet to be fully assessed and compared with the immediate economic benefits. Such an assessment is needed to ensure that present agricultural, forestry, industrial, trade, development assis-


7 The disappearing tropical forests
Uses of the forest
fuelwood
building
pulpwood
food
pharmaceuticals
resins and dyes
logging
overgrazing
fuelwood
insects
fire
disease
urban development
Causes of losses
Estimated annual forest losses 1980-2000
7.5 million hectares minimum
20 million hectares
comparative area of United Kingdom 24 million hectares

tance and other policies actually support, or at least do not undermine, sustainable economic recovery, development and resource use.

85. The major causes of deforestation differ by region. According to the FAO/UNEP report, in Latin America the two major causes are shifting cultivation and the conversion to pastureland for cattle ranching. In Asia and Africa, shifting cultivation by subsistence farmers and removals for fuelwood are major causes. The extraction of timber from tropical forests for industrial purposes is not considered by the FAO/UNEP report as a major factor in deforestation. On a world-wide basis, the FAO/UNEP report estimates that fuelwood and charcoal removals from tropical forests are as much as eight times greater than for industrial wood.

86. Nevertheless, there are acute local and even national shortages of fuelwood in many developing countries in Asia and Africa. Other serious problems follow, "as the imperatives for survival lead to actions like cutting the last wood on slopes prone to erosion to secure warmth and cooking for the present, even though it means crops and fuelwood for the future are at risk."[21]

87. Serious degradation or loss of watershed forests in particular has a wide range of major ecological and economic effects through increased erosion, floods, landslides, and silting of hydro-electric facilities, irrigation systems, reservoirs and harbours. The lives and livelihoods of half the world's population depend directly on the wise management of watershed forests and ecosystems.

88. Deforestation, by reducing a potential source of export products, will exacerbate the already serious balance of payment and external indebtedness problems of many developing countries. In 1978-1980, five developing countries earned more than $100 million a year each from the export of tropical forest products and two countries, Indonesia and Malaysia, earned more than $1,500 million annually. However, several countries such as Thailand and Nigeria changed over those three years from being net exporters to net importers of tropical forest products.

89. Deforestation also influences local, regional and possibly even global climatic conditions by altering hydrological regimes, reducing vegetation cover and causing more heat and light to be reflected back to the atmosphere (the albedo effect), and through accelerated burning of the forest biomass, which contributes to carbon dioxide build-up in the atmosphere and a global warming trend. The economic, social and political implications of possible regional and global climate changes have only begun to be assessed.

90. In sum, developed and developing countries have mutual interests in, but different reasons for more rational use of tropical forests. Though the main causes and immediate effects of deforestation are in the developing countries, there are significant environmental and economic effects which are of increasing concern for developed countries also. Major concerns include the availability of genetic resources for agricultural improvements, for medical research, and for the pharmaceutical and bio-technology industries; the effect on international trade in forest and agricultural products; and the possible impact of deforestation on global climate conditions.

91. The disadvantages of a significant loss of tropical forests are thus potentially high for both developed and developing countries. Some of the consequences of doing too little or acting too late will be irreversible. Joint priority action now among developing countries and between and among developed and developing countries would not only help avoid the many disadvantages but could also yield important advantages for human health and welfare in all parts of the world.

C. DESERTIFICATION[22]

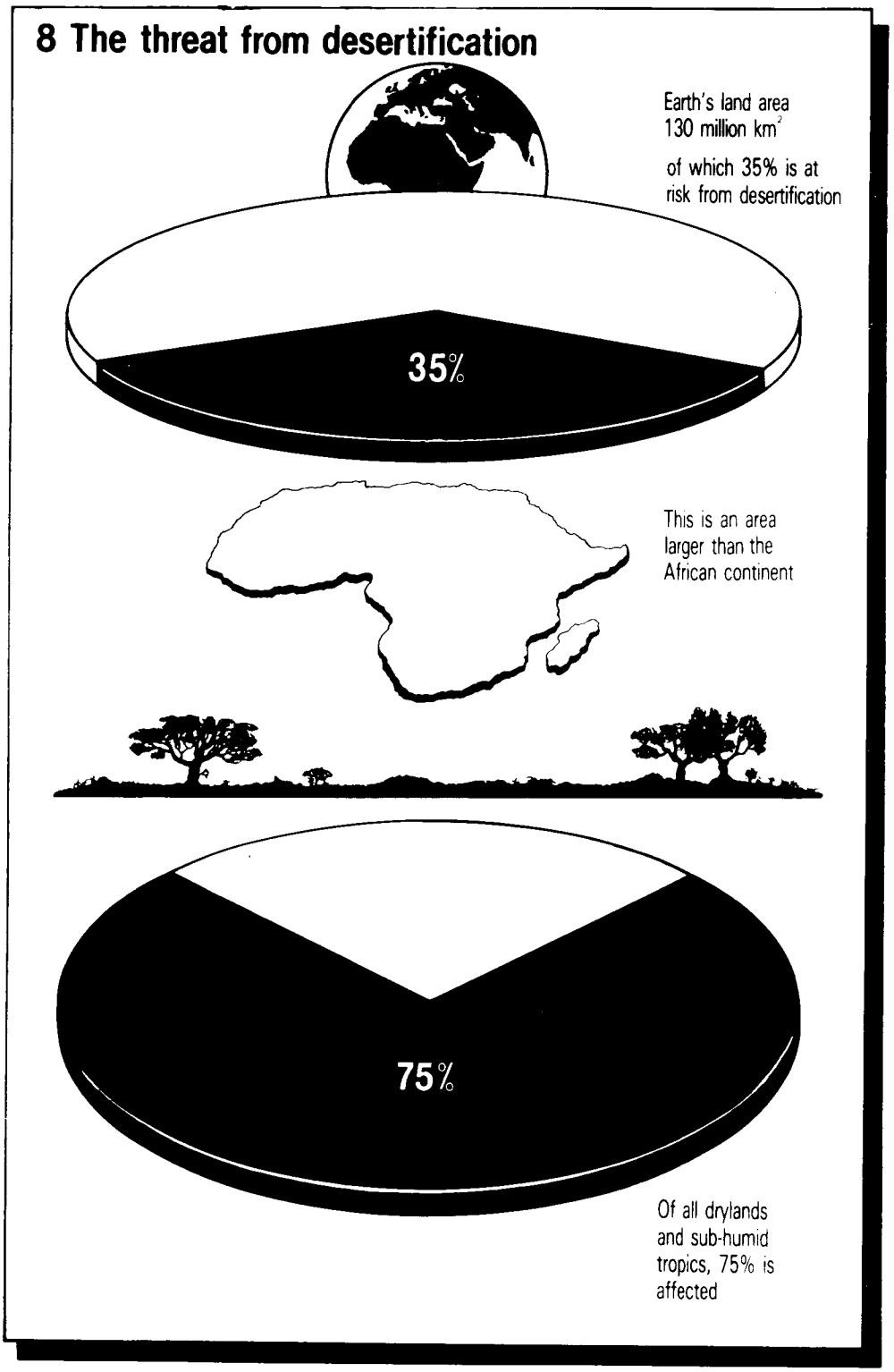
92. Desertification is now perceived as an intensifying world-wide threat which, to varying degrees, affects over 100 States Members of the United Nations. More than 20 per cent of the world's population (850 million people) live in the 35 per cent of the Earth's land surface (45 million km^2) which consists of the arid, semi-arid and subhumid zones at risk of desertification. Three quarters of this area is already at least moderately desertified. These figures for the areas involved are illustrated in figure 8. Each year an additional 21 million hectares of agricultural land deteriorates through desertification to a point at which it is no longer economically productive. The lost production has been valued at $26 billion annually (1980 dollars).

93. Although desertification is exacerbated by severe drought, its principal cause is human over-exploitation of drylands through over-cultivation, overgrazing, poor irrigation practices and deforestation. When drought strikes the overtaxed livelihood systems, desertification results.

94. The most devastating environmental and economic effects of desertification are in developing countries in the drylands. National balance of payments problems and local rural poverty lead to over-exploitation of lands and forests for food, fuel, cash crops and meat for export. As these and other pressures increase to unsustainable levels, agricultural productivity and soil fertility decline, creating in turn new pressures which lead to further degradation. Recovery of land for agricultural purposes becomes costly and often economically unfeasible, thereby reducing the economic potential of the affected countries. In many of these countries, agricultural land is also being reduced by salinization, urban sprawl and sand-dune encroachment. The results are increased hunger and starvation locally, loss of present and potential export earnings, and increased food imports and need for development assistance.

95. Increased desertification in one part of the world can indirectly induce desertification elsewhere, as loss of agricultural land and increased food demand raise prices and intensify pressures on marginal drylands in other food exporting and importing countries alike. There are also other impacts on international trade, to the extent that developing countries affected by rapid desertification will have a reduced capacity to import goods and services from developed countries and from other developing countries. Other globally shared impacts include loss of valuable genetic resources, disruption of hydrological cycles and increase of atmospheric dust.

96. Moreover, there are several important indirect linkages influenced by desertification. For example, in recent years increasing numbers of "ecological refugees" have been fleeing from accelerating desertification processes and situations to already over-


8 The threat from desertification
Earth's land area
130 million km²
of which 35% is at
risk from desertification
35%
This is an area
larger than the
African continent
75%
Of all drylands
and sub-humid
tropics, 75% is
affected

crowded urban slums in their own and other countries, where they pose threats to political and economic stability. These threats in turn negatively influence national development activities and international co-operation. This leads to more pressure on resources, more desertification and still more economic difficulties.

97. A great deal is already known about the causes and effects of desertification and about the measures needed to halt or combat it. Moreover, there is a fairly clear and overwhelmingly favourable cost/benefit ratio to justify preventive action. The 1980 estimate for implementing the 1977 Plan of Action to Combat Desertification was $2.4 billion annually over 20 years, which is only a fraction of the estimated value of agricultural production lost each year through desertification.

98. It is therefore in the interests of all countries to establish some concrete co-operative actions between groups of developed and developing countries to halt further desertification, a goal which can be achieved, given a sufficient allocation of resources, on the basis of currently available knowledge.

D. ENVIRONMENTAL STANDARDS AND THEIR RELATION TO INTERNATIONAL INVESTMENT AND TRADE[23]

99. Foreign investment and trade play a major role in global economic development, and in the national economic development of both developing and developed countries. In developing countries during the past decade, 60 per cent of industrial investment originated from outside, much of it coming from multinational enterprises. A large proportion of the foreign investment in developing countries went into the exploitation of natural resources such as fuels, minerals, timber and fish largely for use in developed countries.

100. Recent studies by OECD and UNCTAD indicate some evidence of a trend to site primary industries in developing countries in order to take advantage of lower labour and other costs of production, including lower costs for meeting pollution abatement and environmental protection standards. This seems particularly applicable to certain traditionally heavily polluting industries such as steel, non-ferrous metals, asbestos and some toxic chemicals. Very few non-ferrous smelters, for example, have been built in developed countries in the last decade.

101. Nevertheless, differences in environmental standards between developed and developing countries do not generally appear to have been a major factor in locational decisions so far. On the one hand, for multinational enterprises the principal considerations motivating investment in a particular country have included the characteristics of the resource, the size of the internal market, and labour, energy and transportation costs. On the other hand, for developing countries negotiating agreements with multinational enterprises, environmental protection has not been as high a priority concern as such issues as taxation, foreign exchange earnings and the employment of host country nationals.

102. As a consequence of these and other factors, agreements between developing countries and multinational enterprises often ignore, or contain only limited references to, environmental concerns. In one survey completed in 1977 of 21 mining agreements,

nine lacked any reference at all to environmental protection. The provisions in the other 12 agreements were fairly general, and none contained unambiguous statements of positive obligations on the part of the enterprise to prevent environmental damage or to repair any damage that might occur. As to international texts, the present draft of the proposed United Nations Code of Conduct for Transnational Corporations includes some guidelines regarding environmental protection, but there are none in the existing OECD Guidelines for Multinational Enterprises, although consideration is now being given to including environmental aspects.

103. Nor have differing environmental standards apparently been a major competitive concern in international trade between developed and developing countries. There does not seem to have been any significant pressure to date from developed countries to reduce the possible trade advantage of the generally lower environmental standards in developing countries. However, if differing environmental standards become a more significant factor than at present in international industrial location and investment decisions, the subject is likely to emerge first as a competitive concern among developing countries, before becoming an issue between developed and developing countries.

104. Consequently, to avoid or at least reduce the negative impact this issue could have on the natural resources, environment and economies of many developing countries, as well as on other areas of co-operation among them, it would seem timely and prudent now for developing countries to attempt to develop together at least some basic common principles and guidelines for resources use and environmental protection.

105. Guiding Principles concerning International Economic Aspects of Environmental Policies, including the polluter pays principle, were adopted a decade ago by OECD countries to reduce the potential for conflicts among themselves while at the same time respecting the need for environmental protection. That principle reflects their conviction that economic efficiency would be promoted and distortions of trade avoided if the pollution control policies of OECD countries required polluters to internalize the external costs. There are exceptions to the principle, or special arrangements for implementing it, in some OECD countries, but these are permitted only as long as they do not lead to significant distortions in international trade and investment.

106. In addition to the development of common basic principles and guidelines by and for themselves, developing countries also have alternative courses of action open to them. The following comments and suggestions are made in the concluding chapter of the recent report sponsored by UNCTAD and UNEP "Resources, Environment and Foreign Trade": "Until recent years the environmental cost component was, by and large, neglected in resource exploitation ventures in developing countries. The studies under this project emphasize that more concern should be devoted to this issue. Environmental damage is a social cost, and a disregard of this cost results in a distortion detrimental to social cost, and a disregard of this cost results in a distortion detrimental to social welfare. Several policy approaches are possible. For instance, the governments of resource endowed countries could introduce general environmental legislation. Alternatively, greater emphasis could be given to environmental provisions in resource exploitation contracts. A third way would be for the government to increase taxation of the resource sector, and use the revenue for 'cleaning-up' purposes. This is not to say that

developing resource-producing countries should slavishly follow industrial nations' environmental goals. Each country usually faces a trade-off between environmental standards and income growth. In countries at low-income levels, maximization of welfare may imply lower standards than in rich countries."[24]

107. In sum, foreign investment and trade have played a major and often crucial role in the economic development of many developing countries, but have also been increasingly associated with heavy inroads on both exhaustible and renewable resources, with avoidable and sometimes even irreversible damage to the environment and the essential ecological basis for sustainable economic development. Consequently, there are many disadvantages to avoid and mutual advantages to be secured through timely joint action and co-operation among developing countries on, for example, basic common environmental principles and guidelines regarding international investment and trade. Complementary steps could be taken with or by developed countries to strengthen the existing codes and guidelines for multinational enterprises, as developed countries also have a responsibility for, and an increasing stake in, supporting and assisting developing countries in their efforts towards better natural resources management and environmental protection.

E. OTHER ISSUES OF GLOBAL SIGNIFICANCE[25]

108. Three of the four issues briefly examined above—the loss of genetic resources, of tropical forests, and desertification—are resource management issues which, while occurring largely in developing countries, are of global significance. However, there are a range of environmental pollution issues originating largely in developed countries which are also of global significance.

109. Carbon dioxide (CO_2) build-up leading to climate change is one of those key issues. Recent research indicates that increasing concentrations of CO_2 in the atmosphere, due mainly to the burning of fossil fuels, could cause a warming trend leading to climate change in the next century. While there is still scientific uncertainty about the pace and impacts of such a change, it could be of sufficient magnitude to produce major physical, economic and social dislocations on a global scale. A special challenge posed by the issue is that if preventive actions are postponed until some effects are perceived, it may be too late to avoid appreciable climate change. It is therefore in the interests of all nations to support international efforts to understand the phenomenon at an early enough stage for action to be taken to reduce or avoid major economic, social and environmental disruptions around the world.

However, as developed countries are currently responsible for over two thirds of total world emissions of CO_2 by fossil fuel combustion, they have a special responsibility for supporting and contributing to accelerated efforts to assess more precisely the nature of the problem, and the alternatives for action to reduce or avoid any serious risks.

110. Another issue is the world-wide distribution and use of harmful or potentially harmful chemicals. There are now some 70,000 chemicals on the commercial market, and many are currently used and released into the environment with little or no knowledge of their potential long-term effects. It is estimated that another 1,000 new chemicals

enter the market each year. Chemicals cross national boundaries in a variety of ways: they are traded in bulk, they are included in many internationally traded products and they are transported by winds and water. As the primary producers of most chemicals in international trade, developed countries have a special responsibility for helping to develop internationally harmonized strategies to control existing as well as new chemicals. Such strategies will need to take into account the interests of importing as well as producing countries. Standardized testing procedures and guidelines, and access by all countries to crucial data required for timely and informed decision-making prior to importing harmful or potentially harmful chemicals, are particularly needed. Industry itself should be heavily involved in ensuring that these needs are met.

111. Other issues originating in developed countries which are presently or potentially of global significance include: the international movement of hazardous wastes, including ocean dumping; the contribution of chlorofluorocarbons (especially CFC-11 and CFC-12) and certain other substances to depletion of the ozone layer; and, more positively, the greater diffusion world-wide of environmentally sound technology, possibly even on concessional terms.

III. CONCLUDING REMARKS

112. Since 1972, it has been realized that all aspects of international relations (trade, investment, transport, technology and cultural transfers, communications and information) affect the enviroments of both developed and developing countries, as well as the global commons. This understanding has created a host of new opportunities, but these have lain for the most part unseized. The rewards for taking them would be increased prosperity and a more secure world. The penalties for failing to take those opportunities could be dire.

113. In bringing the issues discussed in this report to the attention of the world community, the Governing Council would be performing a crucial function. What is required is a broad understanding of the economic and social context, one in which the environment is seen to play an all-pervading role. To this end, a set of perceptions must emerge which constitute an airtight case for the inclusion of environmental considerations in the dialogue on broad economic and social issues. Together, the environmental and resource management issues highlighted in this report have several major features in common:

(a) They occur in many countries and transcend national boundaries;

(b) Their causes and effects are complex and in many cases are not yet fully understood, but are nevertheless now perceived as ultimately affecting all countries;

(c) No nation or even major groups of nations can effectively deal with them alone, as effective action will require extensive international co-operation and mutual assistance among almost all nations;

(d) The interests of all nations are engaged not only in avoiding disadvantages for all but, more positively, in securing mutual advantages for all.

114. A major dimension of these issues which deserves far more attention than it has previously received is their effect on political and economic stability and security within and even among nations. The Independent Commission on International Development Issues made several strong references to this concern. More recently, the United Nations Group of Governmental Experts on the Relationship between Disarmament and Develoment stated in its final report[26] that:

> "There can no longer be the slightest doubt that resource scarcities and ecological stresses constitute real and imminent threats to the future well-being of all peoples

and nations. These challenges are fundamentally non-military and it is imperative that they be addressed accordingly. If this is not recognized, if the international community fails to accept and persevere in the view that these challenges can only be addressed through voluntary and co-operative measures, there is a grave risk that the situation will deteriorate to the point of crisis where, even with a low probability of success, the use of force could be seen as a way to produce results quickly enough. This is far from being a remote possibility. In recent years there has been a marked tendency in international relations to use or to threaten the use of military force in response to the non-military challenges to security."

115. Recent studies have shown that even a very limited nuclear exchange could effectively destroy this planet's closely linked life-support systems. But it must be realized that the processes of environmental despoliation discussed in this report constitute a threat no less real to the future of humankind—slower, less palpable perhaps than the results of nuclear conflagration, but no less insidious in the long term. At present this threat lies hidden—obscured by a pre-occupation with an economic, social and political analysis that pays little or no heed to the environmental destabilizer.

116. In sum, these issues pose at least two major challenges: first, to intensify efforts and international co-operation to close the gap between what is presently known and what Governments need to know individually and collectively for informed and timely decision-making; and, secondly, to strengthen international co-operation and institutions to close the gap between growing recognition of economic and ecological interdependence and the present modest collective capacity to respond to the new problems and to the new opportunities they bring with them.

117. The developing countries highly appreciate the efforts to increase official development assistance. At the same time, they feel such assistance should be viewed in the light of the need for co-operation and for a recognition of mutual long-term interdependences, rather than as handouts. They argue that raising standards of living through such co-operation, while alleviating absolute poverty, will also, by raising levels of employment and economic activity, enable them to participate more constructively in the global economy, thus benefiting developed countries also. Recent opinion polls have shown that the public in developed countries is prepared, as recent concern with acid rain has demonstrated, to pay some of the costs of environmental protection, presumably because the benefits of doing so are perceived. Contributing to the costs in the developing countries on the basis of mutual benefit would not only help relieve the stress on the natural resource base in those countries in such manner as to foster their economic growth, but will also raise the level of economic activity in a manner similar to the overall objective of development assistance, with the consequent benefits mentioned here. In this way, the world community could be translating the principle of interdependence, particularly in the environmental field, into realistic concrete actions.

118. Broadly speaking, environmental issues do generate a common understanding between developed and developing countries, although in some cases there are apparent differences of interest. Though common goals are agreed in principle, and seem to point towards co-operation and joint action, the question is how to secure the required implementation. The actions proposed in this report are a starting point. They are suggestions

only, but ones which have been conceived to merge with the wider demands of economic and social development. In their final form, they must show clearly what benefits accrue from taking the environmental opportunities that are available to the world community. It cannot be too much or too often emphasized how crucial the dialogue between and amongst the developed and developing countries is for the appropriate solutions of environmental problems. Since environmental problems directly affect the basis of human existence, it is evident that progress in co-operation for the solution of environmental problems engenders greater confidence among peoples and nations. Many environmental problems tend to be technical and politically neutral. Working for their solution can have a unifying impact. A recognition of the common concern can overcome the different economic impacts on individual countries. Such agreements in the field of the environment should also help to create a propitious background and favourable climate for attacking more difficult and more controversial problems.

IV. SUGGESTED ACTION BY THE GOVERNING COUNCIL

119. The Governing Council may wish to transmit the present document, together with its views thereupon, to relevant forums where the issues pertaining to economic and social development are under consideration. The General Assembly of the United Nations, and its Committee of Universal Membership on the Review and Appraisal of the International Development Srategy, the fourth General Conference of UNIDO, the second World Population Conference and the Special Commission on Environmental Perspectives would appear to be among the forums which should be addressed.

120. The Governing Council may also wish to decide upon the issues which it would most appropriately address itself, either at sessions of the Council or through interested groups of Governments established by the Council and reporting to it, with a view to reaching agreement on concrete co-operative activities.

121. Some prerequisites for potential success in such negotiations are:

(a) Respect for the sovereignty of States over their own natural resources;

(b) Reaffirmation of a concept of development which acknowledges social elements in addition to pure economic growth, and which depends on the rational use of natural resources. This does not mean under-utilization or no utilization at all—rather, it means finding the best ways of exploitation that do not destroy the resource base itself in the process;

(c) Recognition that availability of resources is a function of technology and education—hence the essential need for co-operation in the training and in the transfer of technology;

(d) Acceptance of the fact that environmental concerns are not only long-term considerations and even where they are, require to be dealt with through actions needed in the short term. Conversely, the ways in which short-term problems are solved have many implications for environment now and in the years to come.

122. Issues for such negotiations may include:

(a) *For co-operation among developed countries*

(i) Control of acid rains;

(ii) Control of pollution of shared rivers;

(b) *For co-operation among developing countries*

(i) Development of appropriate renewable energy technologies;

(ii) Management of large dams in tropical and arid regions;

(iii) Management of river basins and shared fresh-water lakes;

(iv) Integrated pest control;

(v) Environmental problems of large cities;

(vi) Efficient use of fertilizers;

(vii) Development of common basic principles and guidelines for resource use and environmental protection.

(c) *For co-operation between developed and developing countries*

(i) *Monitoring and assessment*

The ever increasing and diversifying observation capabilities have a myriad of possible applications, and are of special importance to developing countries in the monitoring and assessment of environmental indicators particulary changes in natural resources. An internationally designed and managed observation platform, taking fully into account the special needs and wishes of the users in the developing countries, would represent an important qualitative breakthrough in the co-operation between developed and developing countries, in addition of course to providing an operational tool useful for the attainment of many environment objectives;

(ii) *Rational use of tropical forests*

Countries importing tropical forest products could agree with exporting countries in the following areas:

a. Carrying out of co-operative studies on the least damaging ways of harvesting tropical forest products;

b. Support of fuelwood plantations to minimize pressure on tropical forests and

hence attendant environmental hazards;

(iii) *Loss of genetic resources*

The loss of genetic resources may be remedied, at least partially, through the leasing by developing countries of natural areas considered to be of actual or potential importance for genetic material to other States or bodies with a view to generating the resources needed for environmental protection in the economic and social context of the leasing country;

(iv) *Environment-related diseases*

The use of the scientific and technological potential of developed countries to deal with environment-related diseases, particularly water-borne diseases, in the developing countries;

(d) *Drought and desertification*

a. Establishment in the countries most hard hit by drought of development plans which take account of its inevitable recurrence;

b. Establishment of a network of institutes which would specialize in the application of new scientific knowledge to locally developed techniques and technologies in agriculture, silviculture, range management and use of water resources;

c. Establishment of a mechanism to support regional training centres or networks for training the large body of skilled professionals and technicians needed by the developing countries in various fields of desertification control;

(e) *Climatic change*

Establishment of a network of institutions dealing with possible climatic change, especially that induced by CO_2 build-up, to allow qualified institutions in developing countries to participate meaningfully in the study of this global problem, particularly its possible socio-economic impacts;

(f) *Pool of experts*

Establishment of a pool of experts from both developed and developing countries in the various aspects of environmental impact assessment and environmental cost-benefit analysis, to be financed from a special fund run by an international body to which all countries in a position to do so should contribute and on which any country could draw for study of the environmental aspects of its major development activities;

(g) *Relations between non-governmental organizations*

Establishment and support of mechanisms for furthering practical co-operative

efforts between environmental non-governmental organizations in developed and developing countries;

(h) *Some unresolved or emerging environmental issues*

Establishment of an intergovernmental expert group (with balanced representation of developed and developing countries), in which representatives of industry and parliamentary bodies should participate, to discuss some of the unresolved or emerging environmental issues. This expert group should make concrete recommendations to the Governing Council on how to reach solutions to these issues in a co-operative rather than a confrontational manner. Such issues may include:

a. Trade in toxic or severely restricted chemicals;

b. Conditions of transfer of environment-protection technologies;

c. Internalization of adverse external environmental costs in the cost/benefit and profit/loss calculations of national development projects and programmes;

d. Establishment of a code or codes of environmental conduct or an international ecological order.

123. If these proposals are accepted by the Governing Council, the role of UNEP should remain catalytic. However, this catalytic role would require a good deal of preparatory work which would need a small high-level unit, within the secretariat, to deal with the co-ordination and follow-up of the negotiations referred to above.

Notes

1. This section is based on estimates and forecasts prepared by the United Nations Department of International Economic and Social Affairs, September 1983.
2. International Monetary Fund, *Annual report* 1983
3. *World Economic Survey*, 1983 (United Nations Publication, Sales No. E.83.II.c.1) pp. 11-14, 48-54, 59-61.
4. See "Recent experience in economic co-operation among developing countries and possibilities for progress in the 1980's", Supplement to *World Economic Survey*, 1983, pp. 1-20.
5. *World Bank External Debt Tables*, 1983-1984 edition. World Bank External Debt Division.
6. Norman and Dorothy Myers, "How the Global Community can Respond to International Environmental Problems" *Ambio* Vol. XII, 1982.
7. *Water and Sanitation for All*, (quoting WHO figures), (London, IIED (Earthscan publication), 1981)).
8. Barbara Ward, *Home of Man*, (New York, W.W. Norton, 1976): Venezuelan Government survey quoted on p. 216.
9. *State of the World's Children Report*, UNICEF 1984.
10. "The agricultural sector: recent developments and main policy issues for the rest of the decade", paper submitted by the FAO Secretariat to the ACC Task Force on Long-term Development Objectives, New York, 10-13 October 1983.
11. ACC Task Force on Long-term Development Objectives, Fall meeting 1983, New York. Report of the Technical Energy Group (fourth session, New York, 13-15 December 1982);
    ECE, "An Efficient Energy Future", by United Nations Economic Commission for Europe (Butterworths).
12. *World Development Report 1983*, World Bank.
13. *FAO Trade Yearbook*, (1981).
14. Barbara Ward and Rene Dubos, *Only One Earth: The Care and Maintenance of a Small Planet* (London, Penguin Books, 1972).
15. The concept of "Spaceship Earth" was first introduced at the United Nations by Ambassador Adlai Stevenson in the discussions of the Economic and Social Council on 9 July 1965. *See Official Records of the Economic and Social Council, Thirty-ninth Session* (E/SR. 1375), New York, United Nations, 1965, page 90.
16. *Common Crisis North-South*: Co-operation for World Recovery, the Second Report of the Independent Commission on International Development Issues, (London, Pan Books Ltd., 1983) p. 126.
17. The major and most recent reports are listed below. They have all been used as principal sources of information and data for chapter III of this report. When other sources have also been used extensively for particular sections, they are cited separately.
    — *The World Conservation strategy* prepared by IUCN with the advice, co-operation and financial assistance of UNEP and WWF, 1980.
    — *The State of the World Environment, 1972-1982*, Report to the UNEP Governing Council at its session of a special character (UNEP/GC/(SSC)/INF.2).
    — *The World Environment, 1972-1982: A Report by the United Nations Environment Programme*, M. Holdgate, M. Kassas and G. White, eds. (Dublin, Tycooly International Publishing, 1982).
    — *Economic and Ecological Interdependence* (Paris, OECD, 1982).
    — *World Economic Interdependence and the Evolving North-South Relationship*, (Paris, OECD, 1983).
    — "Environmental Research and Management Priorities for the 1980's", Report of the Rattvik Conference sponsored by the Royal Swedish Academy of Sciences, *Ambio*, vol. XII, No. 2, 1983.
18. Additional sources used for *Loss of Species* include:
    —N. Myers, *A Wealth of Wild Species: Storehouse for Human Welfare*, (Colorado, Westview Press, 1983).
    —W. Harrington and A.C. Fisher, "Endangered Species", *Current Issues in Natural Resource Policy*, P.R. Portney, ed. (Washington: Resources for the Future, Inc., 1982).
19. N. Myers, *A Wealth of Wild Species: Storehouse for Human Welfare*, (Colorado, Westview Press, 1983).
20. Additional sources for *Loss of Tropical Forests* include:
    — *Tropical Forest Resources Assessment Project*, Report prepared by FAO in co-operation with UNEP, Rome, FAO, 1981.
    —C. Caulfield, *Tropical Moist Forests: The Resource, The People, The Threat* (London, International Institute for Environment and Development, 1982).
    — *Tropical Forest Resources*, Forestry Paper No. 30 (FAO, Rome 1982).
21. UNEP/GC (SSC) INF.2, para. 167.

22. Report of the Executive Director on the general assessment of progress in the implementation of the Plan of Action to Combat Desertification (1977-1983) (UNEP/GC.12/9).
23. Additional sources for this section include:
—P. Dasgupta and M. Radetski, *Resources, Environment and Foreign Trade*, the Final Report on a series of UNCTAD/UNEP research projects (United Nations, 1982).
T.N. Gladwin, *Environment, Planning and the Multinational Corporation*, (Greenwich, Conn, JAI Press, 1977).
24. Dasgupta and Radetski, p. 30.
25. The information on the issues briefly presented below is largely drawn from the OECD report on "*Economic and Ecological Interdependence*" (1982).
26. Report of the Secretary General on the study on the *Relationship Between Disarmament and Development*, New York, United Nations, (document A/36/356, Annex), 1981, p. 30, para. 72.

Annex

A. LIST OF REVIEWERS WHO SENT COMMENTS ON THE PRELIMINARY DRAFT OF "THE ENVIRONMENT IN THE DIALOGUE BETWEEN AND AMONG DEVELOPED AND DEVELOPING COUNTRIES"

Mr. R. Bhandari
Secretary
Ministry of External Affairs
New Delhi

Mr. Delmar Blasco
Executive Officer
Environment Liaison Centre
Nairobi

Dr. Martin Holdgate
Chief Scientist and Deputy Secretary
Department of the Environment
London

Mr. Jim MacNeil
Director
Environment Directorate
OECD, Paris

Mr. Philip Ndegwa
Governor
Central Bank of Kenya
Nairobi

Mr. Russel W. Peterson
President
National Audubon Society
New York

Mr. Ignacy Sachs
International Research Centre on Environment and Development
Paris

Mr. Gus Speth
President
World Resources Institute
Washington

B. LIST OF PARTICIPANTS

HIGH-LEVEL GROUP MEETING TO REVIEW DRAFT OF "THE ENVIRONMENT IN THE DIALOGUE BETWEEN AND AMONG DEVELOPED AND DEVELOPING COUNTRIES"

GENEVA, 25-30 NOVEMBER 1983

Chairman: Dr. Mostafa K. Tolba
Executive Director,
UNEP

Mr. Anil Agarwal
Director
Centre for Science and Environment
India

Mr. Arthur Brown
Deputy Administrator
United Nations Development Programme

Mr. Delmar Blasco
Executive Officer
Environment Liaison Centre
Nairobi

Mr. Vinod Grover
High Commissioner of India
to Kenya

Mr. Zdzislaw Kaczmarcek
Chairman
State Council for Environmental
Protection
Secretary-General
Polish Academy of Sciences

Mr. Nuhu Mohammed
High Commissioner of Nigeria
to Kenya

Mr. Robert Munro
Managing Director,
The Agesta Group AB
Agesta Gammelgard

Mr. Renat Perelet
Member of the USSR Commission
for UNEP

Mr. Jean Ripert
Director-General for Development
and International Economic
Co-operation
United Nations

Mr. Enrique Buj-Flores
Ambassador of Mexico to Kenya

Mr. Klaus Sahlgren
Executive Secretary
Economic Commission for Europe

Mr. Egon Seidel
Centre for Protection and
Improvement of Environment
German Democratic Republic

Mr. Janez Stanovnik
Professor
Ljubljana University,
Yugoslavia

Mr. Oswaldo Sunkel
Co-ordinator
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Economic Commission for Latin
America

Mr. Shuaib Uthman Yolah
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