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GLOBAL MINISTERIAL ENVIRONMENT FORUM

POLICY ISSUES: EMERGING POLICY ISSUES

Discussion paper presented by the Executive Director

The present document is a background paper intended to stimulate discussion and identify questions of concern to Governments that will be addressed by ministers and heads of delegation during their ministerial consultation at the twenty-first session of the Governing Council/Global Ministerial Environment Forum.

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A. Introduction

1. The Nairobi Declaration on the Role and Mandate of UNEP was adopted by the Governing Council at its the nineteenth session in February 1997 to enable UNEP to meet the major environmental challenges of the contemporary world. In May 1998, the Governing Council at its fifth special session further sharpened the focus of UNEP's activities by identifying five specific areas of concentration: (a) environmental monitoring, assessment, information and research, including early warning; (b) enhanced coordination of environmental conventions and development of environment policy instruments; (c) freshwater; (d) technology transfer and industry; and (e) support to Africa.

2. In 1999, the Governing Council and the General Assembly endorsed the report of the Secretary-General on Environment and Human Settlements, including the proposals aimed at an improved system of environmental governance. This led to the establishment of the Environmental Management Group and an annual ministerial-level Global Environmental Forum of the Governing Council.

3. The Malmö Ministerial Declaration, adopted by the Global Ministerial Environment Forum in May 2000, identified major environmental challenges of the twenty-first century and identified a number of issues and policy responses which need to be addressed by Governments, UNEP and other organizations, and all segments of civil society, including the private sector. The Declaration provided UNEP with additional strategic guidance in addressing various aspects of global environmental issues.

4. There is no doubt that implementation of the Nairobi Declaration and Malmö Ministerial Declaration would provide UNEP with a solid basis for its programme activities. However, resource and policy constraints still exist and the language of priorities needs to be articulated, hopefully at the 2001 forum. The purpose of the present paper is to set the scene for policy dialogue about priorities, focusing on four important policy issues: energy; Africa; UNEP's contribution to Rio +10; and global environmental governance.

B. Energy: A major challenge to the sustainability of human society and environmental integrity of the Earth

Progress and challenges

5. Energy differs markedly from most areas of UNEP's concern because of the number of ways our energy systems affect the environment. The extraction, transportation, and use of primary fuels (mainly fossil) and the generation and transmission of electricity can adversely affect the environment in a number of ways. Global climate change is the most prominent issue on the intergovernmental agenda at present. The increasing human need for energy underlies several other persistent environmental problems, including the disposal of nuclear waste, marine oil spills, damage to ecosystems from dams and deforestation from wood gathering. Energy is used each day by every human being on earth in one form or another. Access to reliable energy sources and, in particular, to electricity, is fundamental to support economic growth, reduce poverty through rural job creation, provide for education and improve health. Energy use lies at the core of modern industrial society: billions of dollars are spent each year on energy infrastructure and services. Developing countries, however, still need a substantial increase in energy services to provide for their basic needs.

Some Energy Indicators

- Global primary energy demand grew by almost 60 per cent between 1973 and 1997.
- Annual emissions of CO_2 from fuel combustion quadrupled between 1950 and 2000.
- The high-income countries, with 20 per cent of the world's population, account for 60 percent of commercial energy use.
- Demand for primary energy in Asia is expected to double every 12 years; globally, demand doubles every 28 years.
- Biomass fuels – firewood, agricultural residues, animal wastes, and charcoal – still provide 20-80 per cent of the primary energy in developing countries.
- An estimated $15 trillion of new investment in power sector infrastructure is required during the next two decades, both to meet new needs and replace obsolete equipment.
- The World Bank has designated indoor air pollution in developing countries as one of the four most critical global environmental problems.

Key Elements of UNEP's Existing Energy Programme

The main goal of UNEP's energy programme is to bring about a global shift to energy systems that are less disruptive to the environment. To this end UNEP:

- Promotes information exchange on energy-efficient technologies and renewable energy technologies through publications and an expanding network of information sources.

- Builds capabilities of government and industry decision-makers to respond to energy and environment (and transport) issues.

- Facilitates advisory services to financial institutions on energy investments.

- Is creating a network of regional and subregional centres of excellence, able to provide technical assistance to decision makers in governments and industry.

- Develops alliances and partnerships with the private sector (financial institutions, renewable energy industry, relevant industry associations) and other United Nations organizations (e.g., the World Solar Programme under the United Nations Educational, Scientific and Cultural Organization (UNESCO)).

Outlook for the future

6. The overarching priority is to move toward a "low- or zero-carbon economy" through action at the local, national and international levels. UNEP's energy programme must focus on encouraging the key actors to adopt energy options that have a low environmental impact – whenever generated from wind, water, solar, biomass or fossil [or nuclear/hydrogen] fuels. However, improved efficiency and reduced emissions are essential for all future energy systems. Sustainable and climate-friendly energy is likely to come from many different sources. A timely transition to a low-carbon, green economy will only take place if all countries select their energy policies from a menu which progressively reduces environmental impacts. The "menu" of policies includes:

(a) Harmonized economic approaches (pricing, economic and fiscal incentives) to ensure better energy demand management, while enabling the poor to have access to energy;

(b) A mix of regulation and voluntary action in high-energy industrial sectors in order to reduce energy consumption;

(c) Accelerating the commercial development of new, low-carbon energy technologies, since it takes time for new systems to displace a significant portion of the devices currently in use. To achieve any reasonable safe emissions trajectory, the market for fuel cells, photovoltaics, wind energy, and other critical technologies will need to be accelerated soon;

(d) Promoting the adoption and mainstreaming of "micropower" in order to provide economical and green power solutions in both developed and developing countries. In particular, market and regulatory frameworks at global and national level require urgent modification to benefit environmentally friendly micropower, rather than old-fashioned, centralized and polluting macropower producers;

(e) Mobilizing global awareness of public officials – and the public as a whole – on energy and environment issues;

(f) Development of partnerships with the private sector, non-governmental organizations, communities, local governments and other stakeholders to provide structural changes in energy systems;

(g) Catalysing research and development effort to develop and demonstrate cleaner and more efficient technologies for energy production and end-use. There is also a need for commitments to long-term investments in research and development, particularly to achieve further de-carbonization of the fuel mix, to promote CO_2 capture and storage, and to improve end-use energy efficiency;

(h) Exploiting the potential of the Clean Development Mechanism and other means of facilitating large-scale transfers to developing countries of energy-efficient and renewable energy technologies, thereby achieving both developmental and environmental objectives;

(i) Development of a strong focus on rural energy through an energy demand approach, instead of an energy supply approach.

Questions for Ministers

- How can consumers in the developed world be persuaded to demand policies supporting reduced energy generation and use? Is a "sea-change" in public opinion possible or likely? Will "micropower"provide a win-win technological solution? Or will policy changes only occur if events such as flooding, storms and drought begin to affect individuals' lives in sufficiently large numbers?

- How do we encourage developed countries and the private sector to transfer energy-efficient technologies to developing/transitional countries at low cost? What enabling conditions need to be fostered to promote more widespread and effective transfer?

- How can we give real and effective incentives for developing countries to adopt environmentally friendly energy systems, particularly when these involve paying an economic price? How can we build "environmental externalities" into energy pricing (directly and through goods/equipment) and other incentive systems in developing countries?

- What is the role of the private sector? How can governments create an enabling environment that is conducive to private sector efforts aimed at providing sustainable energy services? Given the current trend toward deregulation of energy companies, what steps should governments take to ensure that environmental goals are not lost or overlooked?

- How can the United Nations system, and in particular UNEP contribute to a transition to energy systems based on renewable energy? For example, should UNEP contribute to the establishment of a

network of centres of excellence, bringing synergies between centres such as UCCEE at Risø (Denmark), ENDA (West Africa), EDRC (Southern Africa), OLADE (Latin America), TERI (Asia), among others?

- What role should UNEP play in the energy sector in both developed and developing regions? What priorities and targets should UNEP select for its energy policies?

C. Africa: The need for the integration of policy responses to address poverty and the environment

Conditions and Trends

7. The United Nations Secretary-General's report on Africa drew the world's attention to the fact that, in many respects, the causes of conflict, the quest for durable peace and sustainable development have reinforced the recognition of the linkages among peace and human security, poverty alleviation, environmental protection and human rights. As a result, issues no longer divide easily into social or security issues, economic or environmental issues, domestic or global issues, public or private sector issues. Rather, they are all, in theory and in practice, multifaceted. UNEP recognizes the need to forge integrated approaches that take into account and consolidate ecological, social and economic conditions and goals in the Africa region.

8. Over the past decade or so, assessments undertaken or supported by UNEP, such as the Global Environment Outlook (GEO), have demonstrated that Africa's ecological base is fragile and under various threats. The region is experiencing an array of serious environmental challenges and problems. Unsustainable exploitation and degradation of forests, soils, wildlife, fresh water, and other natural resources threaten to undermine the region's economic development prospects. Most African economies are critically dependent on maintaining ecological integrity. Agriculture and other sectors of the economies, are both directly dependent on environmental goods and services. On the whole, the United Nations' understanding of Africa's environmental status has grown considerably as a result of new knowledge and information on sources of environmental degradation and their consequent socio-political, ecological and economic impacts.

9. Recent assessments have vividly shown that Africa is losing its natural resources at relatively rapid rates, compared to many other regions of the world. The causes of Africa's environmental problems are many, complex and interrelated. Consider the following:

(a) Africa is the only continent on which poverty is expected to rise during the next century;

(b) An estimated 500 million hectares of land have been affected by soil degradation since about 1950, including as much as 65 per cent of agricultural land;

(c) As a result of declining food security, the number of undernourished people in Africa nearly doubled from 100 million in the late 1960s to nearly 200 million in 1995;

(d) Africa lost 39 million hectares of tropical forest during the 1980s, and another 10 million hectares by 1995;

(e) Fourteen countries are subject to water stress or water scarcity, and a further 11 will join them by 2025;

(f) Africa emits only 3.5 per cent of the world's total carbon dioxide now and this is expected to increase to only 3.8 per cent by the year 2010;

(g) While the large external debts of many African countries are a major concern, many of the same countries also have growing "environmental debts" where the cost of remedial action will be far greater than preventive action.

10. The relatively poor economic performance manifested in the high and growing levels of poverty among the majority of African countries over the past 30 years or so remains a priority concern. African economies have seen a considerable decline, and in some cases near collapse, in quantitative and qualitative terms. The rate of economic growth in at least half of the region has stayed below 2 percent per year measured in gross domestic product, while the human population has grown by an average of 4 percent per year in the last two decades.

11. Consequently, many African households have access to a very narrow range of economic goods and services. The rural ones, without appropriate technologies, satisfy their economic needs directly from natural resources and the fragile ecological systems. Their technological abilities to exploit or use natural resources sustainably are very limited.

12. These compelling factors show that reducing the poverty of the poor majority of Africans is the overriding priority. This poverty is a major cause and consequence of the environmental degradation and resource depletion which threaten economic growth. New approaches that put the poor at the top of the environment and development agenda could bring about development that is economically, socially and environmentally sustainable.

Constraints to the Achievement of Social, Economic and Environmental Sustainability in Africa

13. In addition to the limitations posed by poverty, another set of causes of environmental degradation is associated with the absence of institutional capacities to implement environmental policies, laws and agreements at national, subregional and regional levels. At national levels, a wide range of policy, administrative and legal instruments has been established to solve environmental problems. These instruments include national environmental action plans, and sectoral and umbrella environmental policies and laws. In addition, significant progress has been made towards greater awareness of the implications of environmental degradation and the need to link economic development with environmental sustainability. A good number of African countries are making efforts to integrate environmental considerations into their national economic development policies and plans. But the translation of these into concrete actions may have been hampered by the constraints of financial resources and limited institutional capacity.

14. Furthermore, the ability of African countries to invest in the search for and implementation of environmental sustainability programmes is largely influenced by their current economic environment. Most of these countries are preoccupied with short-term economic recovery measures. Although they appreciate the importance of environmental management, they are confronted with pressing and often short-term economic crises that undermine social and political stability. Under these conditions of low economic growth, it is not possible for countries to invest in or redirect resources to environmental management causes. The irony, however, is that these countries need to invest in environmental management activities in order to achieve long-term economic recovery. Thus, the search for Africa's environmental sustainability must be founded on those measures that will renew and enlarge the region's economies.

Questions for Ministers

- What should UNEP set as its new targets and goals for Africa? How can we mobilize world-wide political commitment and support for a new deal for Africa's environmentally sound development?

- How can we create a realistic and effective implementation of the key multilateral environmental agreements in Africa? What more can UNEP do, in particular, to link up the desertification, biodiversity-related, chemicals and climate conventions in the African context?

- Why has Agenda 21 not been effective in the special circumstances of Africa? Is a new agenda required to link environment and development objectives for the region? Should an "Agenda Africa 2002" be a priority for Rio + 10?

- How can we make the benefits of the Internet more easily available to assist environmental protection and development efforts in Africa? How could UNEP promote the improved access to environmental information by civil society in Africa?

- How can we reverse the historic tendency of private investors and developers to treat the environment as a "free good" in Africa? Does the answer lie in measures to reflect "environmental externalities" in prices, or is a tougher, regulatory approach required to encourage both investors and countries to treat the African terrestrial and marine environment with proper respect?

D. Consensus-building for international solidarity: Contribution of UNEP to the Rio + 10 process

15. Time is running out and the agenda for the Rio +10 meeting is still unclear. With the exception of the treaty on persistent organic pollutants (POPs), finalized in Johannesburg in December 2000, there are no major environmental instruments being negotiated that will be ready in time for Rio +10. There is no time before the 2002 conference to create any new mechanisms to address the myriad of environmental and social problems identified in Agenda 21.

16. The main objective being promoted for the 2002 conference is the review of the decade since UNCED. Preparations for the conference have begun in all regions, with UNEP taking a lead role in their organization. UNEP will cooperate with the United Nations Division on Economic and Social Affairs, the Economic Commission for Latin America and the Caribbean, the Economic Commission for Europe, the Economic and Social Commission for Asia and the Pacific, amongst other regional and subregional institutions, in the preparation of reports, background papers, assessments and organization of preparatory meetings at the subregional and regional levels. What will we find has been achieved? UNEP's own Global Environment Outlook (GEO 2000) report confirms that "the global system of environmental policy and management is moving in the right direction but much too slowly." The Malmö Ministerial Declaration seems to bring to light that political will is lacking to implement the actions necessary to address the social and environmental problems discussed in Agenda 21, and the funds to do so have not been forthcoming. Many of the goals and targets set 10 years ago have not been achieved and it is essential for governments at the 2002 conference to hold frank discussions and commit themselves to actions to revitalize Agenda 21, mobilize international and national resources and facilitate actions to build an enabling environment to meet the goals and targets, for example through technology transfer.

Questions for Ministers

- Should the Conference in 2002 focus on governance and resource issues as the main theme?

- Have the institutions and legal instruments created at UNCED been effective? And if not, will those ineffective institutions be eliminated?

- Will a concerted review of the funding since UNCED take place?

- How can actions to build an enabling environment to meet the goals and targets, such as technology transfer, be facilitated?

- How can it be ensured that results are honestly monitored and directly linked with the implementation strategy?

E. Global environmental governance: Quest for a coherent and effective system of environmental governance at all levels to ensure the sustainability of human society and the environmental integrity of the Earth

17. As we approach the thirtieth anniversary of the historic Stockholm Conference and the 10-year review of the Rio Conference, the "World Summit on Sustainable Development", environment having been

integrated into the concept of sustainable development continues to remain high on the international agenda and significant achievements have been made. Nevertheless, the challenge of environmental sustainability remains daunting as graphically outlined in UNEP's Global Environmental Outlook 2000 report. New and emerging issues need early attention and coordination in a globalized world.

18. The evolution of the various initiatives to address global environmental problems by the international community has led to a proliferation of new programmes and institutional arrangements designed to address specific concerns. Such new institutional mechanisms have often been created without due consideration of how they might interact with the overall system, or their coordination requirements. Given the number of bodies, including more than 200 multilateral environmental agreements and many with overlapping remits, resources are spread thinly and it is still the exception rather than the rule for major international environmental bodies to cooperate in delivering "joined-up" programmes.

19. The relentless destruction of the planet's natural resources base and the advent of life-threatening environmental problems on a planetary scale demand that the international community must begin to address, in a coherent manner, whether, in the context of global environmental threats, the institutions currently in place to manage the critical questions related to the environmental integrity and sustainability of the planet have the capacity to deal with those problems with any realistic chance of success.

20. An awareness that the international institutional architecture dealing with environmental issues must be strengthened is growing. The need for a strong, transparent and participatory international regime is increasingly seen as essential to ensuring a coherent and collaborative approach to achieving long-term environmental sustainability. The growing consensus around this point of view should take as its starting point an approach that builds on existing institutional arrangements, outlines clearly what the new requirements are and ensures that each step of reform and change is undertaken on the basis of a clear international consensus. In this context, the European Union made a significant contribution in a decision-targeted manner.

21. UNEP has the mandate to be the world's pre-eminent environmental authority. However, it is clearly recognized that, for this to become a reality, considerable more commitment and institutional development are required. A sufficient resource basis as a clear commitment by all member States is needed to fulfil the mandate.

22. Several attempts have been made at reform and have yielded some success. The Nairobi Declaration adopted by the UNEP Governing Council in 1997 came at a critical time in the organization's history and served to clarify its mandate. Subsequently, in the context of overall United Nations reform, the Secretary-General requested the Executive Director of UNEP to chair a Task Force to propose measures for strengthening the activities of the United Nations in the field of environment and human settlements. The General Assembly in the resulting resolution 53/242 decided on a number of measures that have had the impact of generating further gains in policy and inter-agency coordination in the field of the environment. These included the creation of the Global Ministerial Environment Forum as the pre-eminent policy forum for the environment. The first Global Ministerial Environment Forum in Malmö (May 2000) proved to be an excellent institution to strengthen the global environmental agenda and to promote the concrete actions, as integrated in the Malmö Declaration. The second main instrument is linked with the creation of the Environmental Management Group to enhance inter-agency coordination and strengthening of the monitoring, assessment and early warning capacities of UNEP to support global and regional conventions. With respect to conventions, the Assembly also endorsed the joint meetings of heads of convention secretariats under UNEP auspices and supported the view that the President of the UNEP Governing Council should consult with Presidents of conferences of the parties to conventions on cross-cutting issues. These measures indicate, in particular, the importance that governments increasingly attach to the implementation of the conventions.

23. The development of international environmental law has been one of the most rapid in the United Nations system. The progressive development of international environmental law related to sustainable development provides a new and innovative response by the international community in terms of building

and enhancing a process to address the most pressing global environmental challenges. In this context, it is especially important to develop market-oriented instruments in a globalized world, as a basis for integrating civil society, especially the private sector, into responses to such challenges.

24. This development has inspired new and innovative concepts, principles and ideas and resulted in facilitative and enabling mechanisms and procedures in areas such as implementation and compliance and evolving fields in international relations over the last decade. International environmental law is playing an increasingly important role in promoting the integration of environment and development and providing an effective legal and regulatory framework for underpinning the efforts of the international community to achieve sustainable development.

25. The total number of legal agreements dealing with environment and sustainable development is rising while the average time taken to negotiate each treaty is decreasing. Within the same time frame, the scale of problems to be addressed has widened – from the regional through the hemispheric to the global – while the total number of sovereign States that have to participate in the negotiation of such legal arrangements has gradually burgeoned. Environmental concerns and principles – precaution, inter- and intra-generational equity, scientific uncertainty, life-cycle economy, common but differentiated responsibility, and sustainable development – have also arisen in recent years and now need to be factored into the negotiation process. Clearly the definition, negotiation and creation of the various legally binding conventions and protocols on the environment represent an outstanding achievement of the international community. Binding international conventions now exist in areas as diverse as climate change, biological diversity and biosafety, desertification, prior informed consent for trade in hazardous chemicals and pesticides and now persistent organic pollutants. While this represents an impressive record of achievements of the international community, it also raises the issue of the need for continuing policy coherence among the various instruments that exist in this area, at both the inter-agency and intergovernmental levels.

26. It is especially underlined that compliance with and enforcement of environmental law are far from satisfactory and, where institutions are available for environmental matters, governance structures and functions do not exist or are too weak or uncoordinated. This is of specific relevance to other dimensions of globalization, especially trade.

The new international context

27. Governments are increasingly expressing concern that the current governance structure does not meet the needs of the environmental agenda. These concerns range from the proliferation of complex meetings that impose onerous demands on negotiators, particularly from developing countries, to the fragmentation of the agenda that prevents environmental issues from being dealt with in a comprehensive manner and does not allow the emergence of an approach that could underpin and support the implementation and monitoring of legally binding commitments under international law.

28. This growing concern was well articulated in the Malmö Ministerial Declaration adopted at the first UNEP Global Ministerial Environment Forum, which stated that the 2002 World Summit on Sustainable Development "would review the requirements for a greatly strengthened institutional structure for international environmental governance based on an assessment of future needs for an institutional architecture that has the capacity to effectively address wide-ranging environmental threats in a globalising world. UNEP's role in this regard should be strengthened and its financial base broadened and made more predictable."

29. In any model of reform in which the central importance of environmental compliance, enforcement and liability, as well as the observance of the Rio Principles, including the precautionary approach, are stressed, the particular circumstances of developing countries must be taken into account. Faced with declining terms of trade, tariff and non-tariff barriers to trade, debt, population growth and economic instability, developing countries require enhanced support to meet social and economic demands even as they attempt to meet their environmental obligations. The interrelation between poverty, health and the environment must be taken into account for the more enhanced implementation of the Rio Agenda.

30. A new model of governance must be predicated on the need for sustainable development that meets social, economic and environmental requirements. The environmental problems of today can no longer be dealt with in isolation. As the Global Environment Outlok 2000 made clear, the environmental problems of today are linked to social demands, demographic pressures and poverty in developing countries, counterposed against excessive and wasteful consumption in developed countries. In addition, any approach to strengthen international environmental governance must take into account that general recipes will no longer work and differentiated approaches, tailor-made solutions and specific answers corresponding to the unique situations we face today are needed. Such an approach would require universal commitment, as it entails enormous demands on policy design and implementation capacities at all levels.

Considerations in reform of governance structures

31. Any approach to strengthening and streamlining international governance would need to respond to the following considerations:

(a) Credibility: Reformed institutional structures must command the universal commitment of all member States based on transparency, fairness, and confidence in an independent substantive capacity to advise and adjudicate on environmental issues;

(b) Authority: Reform must address the development of an institutional mandate that is not challenged. This should provide the basis for a more effective exercise of authority in coordinating environmental activities within the United Nations;

(c) Financing: Adequate financial resources linked to broader development cooperation objectives must be provided. With regard to UNEP, despite several intergovernmental decisions to strengthen UNEP and provide it with "adequate, stable and predictable" financing, the level of the Environment Fund remains at approximately US $50 million per annum, despite increasing mandates. Such a situation is not sustainable in the long term;

(d) Participation of all actors: With the importance of the environmental consequences of the actions of major groups, civil society and the private sector, ways must be found to incorporate their views in decision making;

(e) Coordination and implementation: which are linked with enforcement, compliance and liability.

Conclusion

32. The majority of views expressed on reform in governance tend to support an incremental approach to strengthening and streamlining the current governance structure, with the starting point being the strengthening of the authority and mandate of UNEP to play effectively the role of the global environmental authority. A strengthened UNEP with an enhanced mandate and secure financial base could more realistically play a central role in improved coordination, develop authoritative assessments of options for policy solutions, and integrate environmental concerns into other international institutions, as well as advise on the environmental aspects of States' domestic policies. Consideration should also be given to whether UNEP requires a new mandate of a more operational nature.

33. The proliferation of legal instruments, including market-oriented instruments linked with all sectors of civil society, proposals for umbrella conventions and the costs of geographical dispersal must also be addressed. Such an approach would allow the currently diffuse institutional setting to evolve into a structure that has the capacity to support and monitor the implementation of international agreements, as well as identify areas for further development. A number of promising steps have been initiated with resolution 53/242 of the General Assembly on the report of the Secretary-General on Environment and Human Settlements. That momentum must be maintained.

34. It is appropriate that this discussion should start at the Global Ministerial Environment Forum to launch a process that would culminate in specific agreements at the World Summit on Sustainable Development in 2002.

Questions for Ministers

35. Which of the following broad options for future institutional architecture would Ministers wish to consider at the review of UNCED in 2002:

- The creation of a new World Environmental Organization or equivalent body, either additional to or subsuming UNEP?

- Strengthening UNEP by reclassifying it as a United Nations specialized agency, with assessed contributions and an increased budget?

- Retaining UNEP's present status, but increasing its budget and assessing its voluntary contributions according to the United Nations scale?

- Developing a strong jurisdictional instrument for the enforcement of international environmental law? In this context, there should be the interrelation between UNEP, conventions and financial mechanisms for sustainable development and environmental protection.

- Should a small group of independent experts be formed to review the issue of governance, the outcome of which is to be reported to a future session of the Governing Council/Global Ministerial Environment Forum?

II. POVERTY AND THE ENVIRONMENT

A. Introduction

36. Globalization has become a dominant force in the years since the June 1992 Rio "Earth Summit," as burgeoning trade and capital flows, coupled with the revolution in information technologies, have woven the world closer together than ever before. Opinions vary widely about the implications of globalization for efforts to combat poverty and ecological decline. Although many people around the world see globalization as a largely positive phenomenon, others worry that globalization is resulting in a "race to the bottom" in environmental and labor standards and exacerbating social and environmental disruptions. This latter view has increasingly come to define the terms of the public debate over globalization, as evidenced by the tens of thousands of protesters that have poured into the streets at international meetings such as the December 1999 World Trade Organization ministerial meeting in Seattle and the September 2000 annual meetings of the World Bank and the International Monetary Fund in Prague.

37. With these widespread concerns about the social and ecological implications of today's globalization trends in the background, the relationship between poverty and environmental decline is now coming under the international spotlight. The Malmö Ministerial Declaration produced by UNEP's Global Ministerial Environment Forum in May 2000 noted that "The 2002 conference should aim at addressing the major challenges to sustainable development, and in particular the pervasive effects of the burden of poverty on a large proportion of the Earth's inhabitants, counterposed against excessive and wasteful consumption and inefficient resource use that perpetuates the vicious circle of environmental degradation and increasing poverty." And 146 heads of State and government pledged in the United Nations Millennium Declaration of September to reduce by half by 2015 the number of people living on less than a dollar a day, as well as the ranks of the hungry and those without access to safe drinking water. The heads of State also promised to "spare no effort to free all of humanity, and above all our children and grandchildren, from the threat of living on a planet irredeemably spoilt by human activities, and whose resources would no longer be sufficient to meet their needs."

38. Poor people generally bear the brunt of the burden from environmental degradation and decline. They are less insulated than the rich from basic pollution problems such as dirty air and water and toxic chemicals, and problems such as degraded lands, forests, or fisheries directly threaten the livelihoods of hundreds of millions of people who depend upon these resources for sustenance. But just as ecological decline often deepens poverty, so can poverty exacerbate environmental degradation, with desperate people forced to over-till marginal lands or over-harvest depleted fisheries in a desperate struggle to survive.

39. Though poverty and environmental decline can be reinforcing, an array of innovative practices and policies exist that protect rather than decimate the natural wealth on which the health of the global economy itself ultimately depends. The upcoming "Rio + 10" conference offers an important opportunity to jumpstart these initiatives on a global scale.

B. Key issues and challenges

40. This sub-section is taken from the United Nations Secretary-General's millennium report "We the peoples: the role of the United Nations in the Twenty-first Century."

41. In the past half-century the world has made unprecedented economic gains. Countries that a mere generation ago were struggling with underdevelopment are now vibrant centres of global economic activity. In just two decades, 15 countries, whose combined population exceed 1.6 billion, have halved the proportion of their citizens living in extreme poverty. Asia has made a rapid recovery from the financial crisis of 1997-1998, demonstrating the staying power of its economies – though Asia's poor have not yet regained lost ground.

42. Chief among the human development success stories since the 1960s are an increase in life expectancy in developing countries, from 46 to 64 years, a reduction by half of infant mortality rates, an increase of

more than 80 per cent in the proportion of children enrolled in primary school, and a doubling of access to safe drinking water and basic sanitation.

43. While more people enjoy better standards of living than ever before, many others remain desperately poor. Nearly half the world's population still has to make do on less than $2 per day. Approximately 1.2 billion people – 500 million in South Asia and 300 million in Africa – struggle on less than $1. In Sub-Saharan Africa, there are 74 million more people living on less that $1 dollar per day today than there were twenty years ago. With that kind of deprivation comes pain, powerlessness, despair and lack of fundamental freedom – all of which, in turn, perpetuate poverty.

44. And the gap between the rich and the poor has widened in recent years. The 1 billion people living in developed countries earn 60 per cent of the world's income, while the 3.5 billion people in low-income countries earn less than 20 per cent. And the ratio between the income garnered by countries home to the richest fifth of the world's population compared to those of the world's poorest fifth has been widening, climbing to from 30 to 1 in 1960, to 60 to 1 in 1990, to 74 to 1 in 1997. Many countries have experienced growing internal inequality, including some of those in transition from communism. In the developing world, income gaps are most pronounced in Latin America, followed closely by sub-Saharan Africa.

45. Global income disparities are mirrored by enormous gaps in material consumption levels. UNDP estimates that the richest twenty percent of the world's population consumes 58 per cent of the world's energy, 65 per cent of electricity, 87 per cent of cars, 74 per cent of telephones, 46 per cent of all meat, and 84 per cent of paper, while the poorest fifth of the world's population consumes less than 10 per cent of all of these items.

46. There is also a pronounced gender gap in global poverty trends. UNDP estimates that 70 per cent of the more than a billion people living in extreme poverty are women. This inequity is reflected in a range of social indicators. For example, the number of illiterate women is twice that of men. And in many countries boys are far more likely than girls to receive a primary education. Women are often denied basic economic and political rights that are inextricably linked with poverty alleviation, including the right to own property, to access credit, and to tap into social welfare systems.

47. Extreme poverty is an affront to our common humanity. It also makes many other problems worse. For example, poor countries – especially those with significant inequality between ethnic and religious communities – are far more likely to be embroiled in conflicts than rich ones. While most of these conflicts are internal, they almost create spillover problems for neighboring countries or generate a need for humanitarian assistance. Poor countries also often lack the capacity and resources to implement environmentally sound policies.

48. Unless the international community redoubles and concentrates its efforts, poverty and inequality may get still worse. The latest poverty figures illustrate the challenge. Although the number of people living in absolute poverty has declined slightly over the last decade, a closer look reveals that this is due almost entirely to progress in East Asia, notably China, where poverty reduction is closely associated with strong rates of economic growth. Recent studies show a clear correlation between growth and poverty reduction in poor countries. But in societies plagued by large inequalities, economic growth does not benefit the poor nearly as much as in those where income is more equitably shared.

49. Population growth is an added challenge. The size of the world's population recently reached 6 billion. It took only 12 years to add the last billion, the shortest such span in history. By 2025, demographers project that an additional 2 billion people will populate the planet—almost all of them in developing countries.

C. The poverty-environment connection

50. Systems of environmental governance around the world are not coping well with the challenges to the integrity of the natural environment posed by our current development path. As a discussion paper prepared by the Executive Director of UNEP for the Global Ministerial Environment Forum in 2000 argued, "gradual

improvements to the environment are increasingly regarded as insufficient to meet the commitments made in Rio de Janeiro eight years ago."

51. The paper highlighted some of the social and economic repercussions of environmental deterioration:

- Unsafe water and poor sanitation cause an estimated 80 per cent of all diseases in the developing world; the annual death toll exceeds five million, of which more than one-half are children;

- World-wide, more than one billion urban residents are exposed to health-threatening levels of pollution; in eleven East Asian cities alone, air pollution causes more than 50,000 premature deaths and 400,000 new cases of chronic bronchitis per year;

- In 1998, an estimated 25 million "environmental refugees" emerged as a result of weather-related disasters;

- Global damage from natural disasters was estimated at US $120 billion for the two years 1997 and 1998;

- Desertification and drought affect more than 900 million people in 100 countries.

D. Issues for discussion

52. Evidence shows that the transition to environmental sustainability, if it is happening at all, is taking place very slowly. Even where there is clear evidence that changes are required, action lags behind. The processes of adjustment need to be speeded up at all levels, from the local to the national to the international. Environment ministers may wish to identify and discuss the key features of an effective system of global environmental governance in light of the constraints and challenges imposed by pervasive poverty.

1. Poverty amidst plenty: multi-dimensional phenomenon

53. Although poverty has traditionally been defined by income, a growing consensus is emerging that poverty is best viewed as a multi-dimensional phenomenon encompassing a range of deprivations, including lack of access to health care and education, an inability to participate in political processes, and vulnerability to catastrophe in the face of unexpected economic dislocations or natural disasters. As UNDP describes it, poverty includes not only a lack of material means, but also the "the denial of opportunities and choices most basic to human development – to lead a long, healthy, creative life and to enjoy a decent standard of living, freedom, dignity, self-esteem and the respect of others."

54. Poverty is also often characterized by environmental decline. Many of the freedoms highlighted above require a sound natural environment, including access to clean air and clean water. And as Indian ecologist Anil Agarwal notes, rural people often suffer from "ecological poverty" due to the degradation of their natural resource base. As Agarwal explains it, "The trees and grasses have gone, the land has eroded and the hydrological cycle has been disturbed. As a result, the basics of their economy have disappeared."

- How does the international economic environment effect environmental prospects, including linkages between trade, debt, international financial flows, and environmental quality?

- How can environmental Ministers best contribute to the preparations for the third United Nations Conference on Least Developed Countries in May 2001, and to the preparations for the high-level Financing for Development event to be held in early 2002?

- How can environmental costs be better integrated into economic decision-making? How can broader use of environmental accounting techniques be encouraged both within companies and countries?

2. Human health at risk

55. One particularly sobering dimension of poverty is ill-health, which drastically forecloses options and limits peoples' hopes for a better future. Environmental degradation is a powerful contributor to many of today's most pressing global health threats. The World Health Organization (WHO) estimates that nearly a quarter of the global burden of disease and injury is related to environmental disruption and. decline. High on this list are polluted air, dirty water, poor sanitation, and insect-transmitted diseases such as malaria. Tragically, children are the victims in as many as two-thirds of all environmentally-related deaths.

56. Some 90 per cent of diarrhoea diseases such as cholera, which kill 3 million people a year altogether, result from contaminated water. And 90 per cent of the 1.5 to 2.7 million deaths caused by malaria annually are linked with underlying environmental disruptions, such as the colonization of rainforests and the construction of large open-water irrigation schemes, both of which increase human exposure to disease-carrying mosquitoes.

57. Air pollution is a major environmentally induced killer, causing respiratory ailments, heart and lung disease, and cancer. It claims some 3 million lives per year, more than 90 per cent of which result from contaminants caused by indoor air pollution from burning both traditional biomass-based fuels and coal for cooking and heating in poorly ventilated settings. Women and children are most often the victims of indoor air pollution.

58. Production and use of toxic chemicals pose another major threat to both human and ecological health. Synthetic chemicals were virtually unknown at the turn of the last century, but there are now between 50,000 and 100,000 of them being produced commercially, often with unknown effects on human and ecological health.

59. Global environmental threats such as ozone depletion and climate change, also have major implications for human health. Scientists believe that today's record levels of ozone depletion will cause elevated skin cancer rates and impaired immune systems in populations exposed to excessive ultraviolet radiation.

- What roles do environmental conventions such as the Rotterdam Convention, the POPs treaty, the Kyoto Protocol and the Biosafety Protocol play in reducing environmental health threats? Can their implementation be both accelerated and focused more concretely on these linkages?

- How should WHO, UNICEF and UNEP work together on environmental health issues?

- The Third Ministerial Conference on Environment and Health organized by WHO Europe led to a number of significant measures, including a legally binding Protocol on Water and Health and a Charter on Transport., Environment and Health. Is this a possible mode for similar initiatives in other regions?

- How can poor people expand their access to solar power and other forms of renewable energy, in order to gain needed access to electricity and energy, while reducing the adverse health and environmental impacts associated with fossil-fuel and biomass combustion?

- What can be achieved on energy and transportation issues at the ninth session of the Commission on Sustainable Development that will promote positive synergies between environmental protection and poverty alleviation?

3. Degraded lands, impoverished peoples

60. Historically, most deeply impoverished people have lived in rural areas, where they are highly dependent on agriculture for both their sustenance and their livelihoods. But land degradation and water

shortages in many parts of the world pose a severe and growing threat to the ability of poor farmers to eke out a living from the land.

61. Worldwide, more than 1 billion hectares of land is moderately to severely degraded, an area larger than all of China. The consequences of **land degradation** are particularly severe in the world's drylands, where desertification can causes malnutrition, migration, and civil strife. More than 250 million people live in areas that are currently undergoing desertification, while some 1 billion people live in places that put them at risk. In Africa, a region of special concentration for UNEP, over a million hectares of drylands are moderately or severely affected by desertification, 73 per cent of all drylands. One in six people in some severely-affected African countries have been uprooted from their homes as a result.

62. **Water scarcity** is another looming threat. Already, one-third of the world's population lives in countries facing moderate to high water stress, and water tables are falling on every inhabited continent. If present trends continue, two out of three people on Earth will live in water-stressed conditions by 2025. As more countries are forced to turn to world grain markets to feed their populations due to land and water shortages, growing demand could cause world grain prices to spike, exacerbating social pressures in urban areas of impoverished food-importing nations.

63. **Deforestation** is also closely linked with poverty. Poor people are sometimes unwitting agents of forest destruction, as they migrate into previously pristine forests in search of land to grow food. But deforestation also often deepens poverty, as forest-dwelling people are displaced from their lands and severed from the important services that intact forests provide, including providing a rich source of food, fibres, medicines, and fuel.

64. **Overfishing and the degradation of coastal ecosystems** pose yet another grave hazard to the wellbeing of poor people around the world, many of whom depend on healthy fisheries for both their livelihoods and as a key source of protein. But the world's fisheries are under siege as a result of habitat destruction, pollution and over-exploitation – 70 per cent of the primary fish species are now either fully or over-exploited.

65. **Climate change** threatens to greatly worsen the plight of impoverished peoples living close to the land. The Intergovernmental Panel on Climate Change (IPCC) predicts that global warming will exacerbate water scarcity in arid regions such as the Middle East, and increase droughts and diminish agricultural productivity in many of the world's poorest countries.

- How can poor people obtain more secure land tenure and water rights, thereby promoting environmental sustainability?

- Are there promising models of shared natural resource management, and how can they be replicated?

- What is the role of women in sound natural resource management and poverty alleviation?

- How can environmental issues be mainstreamed into national development plans and poverty alleviation strategies? Is there a role for more collaboration between UNEP. UNDP, and the World Bank - all committed to poverty alleviation?

- Can the Millennium Assessment of Global Ecosystems be used to promote better understanding of the linkages between healthy ecosystems and poverty alleviation?

- What steps are needed to help developing countries adapt to damaging environmental and social effects of climate change?

4. Poverty and the urban environment

66. Poverty is by no means only a rural phenomenon. The ranks of the urban poor are growing steadily as rural to urban migration brings more and more impoverished peoples into the exploding cities of the developing world. Nearly half of the 6 billion people who currently inhabit the planet are urban dwellers, up from 30 per cent in 1950. This share is expected to climb as high as 60 per cent by 2030. Seven of the world's ten largest cities are now located in the developing world, including Mexico City, Bombay, and São Paulo. The number of urban dwellers worldwide is expected to double by 2025, reaching 5 billion. Ninety percent of this increase is expected to occur in the developing world, with the most explosive urban growth expected in Africa and Asia.

67. As migrants pour into the exploding cities of the developing world, they often wind up in squalid and sprawling shantytowns where environmental health threats abound. At least 220 million people in the cities of the developing world lack access to clean drinking water, 420 million have no access to even simple latrines, and more than 1.1 billion breathe unhealthy air. As the ranks of the urban poor continue to grow, municipal governments are struggling to keep up by providing adequate public services such as clean water, waste treatment, energy and transportation.

- How can UNEP strengthen its role in addressing critical issues related to the urban environment?

- How can public-private partnerships be formed that provide basic infrastructure to the poor, such as water supply and waste management?

5. Greening the economy

68. As the new millennium dawns, it is indefensible that more than half of the world's population is living on less than two dollars a day. At the same time, the carrying capacity of the planet is being pushed beyond its limits by the exploding scale and the unsustainable structure of the global economy. Drastically reducing poverty while at the same time protecting the planet's ecological systems will require creating a new economic model that is based on nurturing rather than decimating natural wealth.

69. One priority is to generate income and employment through sustainable livelihoods. When polluting factories are shut down, the resulting job losses are often highly publicized. But it is often overlooked that millions of jobs are being created in the transition to an environmentally sustainable economy in sectors such as waste management, renewable energy, and recycling.

70. Policy reforms are needed to make these environmentally sound enterprises economically competitive. One approach is to internalize environmental costs by increasing taxes on environmentally harmful activities while reducing other taxes, particularly those that discourage employment. Another important priority is to reduce government subsidies to environmentally damaging industries. Fossil fuel subsidies, for instance, currently cost national treasuries some US $100 billion annually, while imposing significant environmental costs. Innovative approaches to pollution control, such as emissions trading, also hold promise for delivering the maximum environmental benefit for the minimum cost.

71. Many new technologies offer great promise, but they also often entail significant risks. Biotechnology, for example, could make dramatic breakthroughs in food production possible, while reducing environmental pressures. But new technologies must not be rushed to the market with insufficient understanding of their possible effects on human and ecological health.

72. An effective global environmental governance structure needs to enable, support and encourage innovative environmental policy and decision-making worldwide. Such a structure must not only respond to environmental threats, but also put in place the environmental management structures needed to prevent environmental degradation in the first place. Mechanisms are also needed to ensure that the public is able to participate effectively in environmental policymaking. Toward this end, the public must have access both to environmental information as well as to judicial remedies.

73. As the world becomes steadily more integrated through globalization, it is a moral imperative that more than a billion people not remained mired in extreme poverty. It is also a practical reality that problems in one part of the world will not remain isolated for long. The potent combination of growing poverty and environmental decline is creating grave insecurities that threaten all people everywhere. Only by working together to combat shared threats will it be possible for nations to provide for the ecological and social security of their citizens for whom they have primary responsibility.

- What measures are needed to promote the internalization of environmental costs by both the public and private sectors?

- How can governments introduce national accounting systems which take into account environmental costs?

- How can the Precautionary Principle be put into practice at both the national and the global level?

- Is the Biosafety Protocol a good model for how to minimize the risks associated with introducing new technologies?

- How can full public participation in environmental decisionmaking be ensured, including from the poor and powerless? How can Principle 10 of the Rio Declaration be put more fully into practice around the world?

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III. POVERTY AND THE ENVIRONMENT: ENVIRONMENTAL VULNERABILITY TO NATURAL AND MAN-MADE DISASTERS

74. Disasters are growing in frequency worldwide, often exacerbated by environmental decline and human settlement patterns. Impoverished people are particularly vulnerable when disaster strikes, as they normally lack insurance or other safety nets to help them weather hard luck and difficult times. And climate

change looms as a menacing force: scientists project that warming global temperatures will translate into both more frequent and more deadly storms, flooding, and other disasters in the years ahead.

A. The rising toll of "natural" disasters

75. Epic natural disasters have occurred throughout human history, including earthquakes, cyclones, typhoons, floods, and droughts. These catastrophes have in past centuries often claimed tens of thousands and in some cases hundreds of thousands of lives. The death toll of natural disasters has declined over the last century, as early warning systems and disaster preparedness has improved and as progress in basic health and sanitation in many parts of the world has reduced the outbreak of massive epidemics in the aftermath of disasters. But the number of large natural catastrophes as well as their economic toll has risen steadily in recent decades.

76. The German reinsurance company Munich Re calculates that there were 250 "great" natural catastrophes in the second half of the twentieth century, meaning those that required significant outside assistance because of people killed or left homeless or the magnitude of the economic losses. These disasters claimed some 1.4 million lives. Between them, the associated economic losses added up to US $960 billion, 35 per cent of which were attributable to earthquakes, 30 per cent to floods, 28 per cent to windstorms, and 7 per cent to other events and to other types of catastrophes, such as droughts and forest fires. Both the number of these "great" catastrophes and the economic losses associated with them climbed steadily over the half-century.

77. Although natural disasters occur in all parts of the world, developing countries are far more vulnerable to suffering catastrophic effects from them, including severe loss of life and economic harm. According to Munich Re, developing countries were the site of 65 per cent of all natural catastrophes between 1985 and 1999, but a staggering 96 per cent of all associated fatalities. In straight economic terms, industrial countries saw greater economic losses – 57 per cent of the total of US $984 billion over this period. But as a percentage of GNP, developing countries paid the greater price, with losses of more than 13 per cent of GNP in the world's poorest countries, compared with only some 2.5 percent of GNP in rich nations.

78. A number of factors have contributed to the increasing severity of catastrophic natural disasters in recent decades. One important cause is growing vulnerability to disasters because of demographic changes such as growing human populations in cities and along coastlines, two areas that are particularly exposed to nature's fury. Nearly half of the 6 billion people who currently inhabit the planet are urban dwellers, up from 30 percent in 1950. This share is expected to climb to over 60 percent by 2025. And thirteen of the world's fifteen largest urban areas are along coasts, which are particularly vulnerable to flooding and damage from hurricanes.

79. The degradation of ecological systems is another major force behind the growing toll of many "natural" disasters, particularly flooding. As Janet Abramovitz of Worldwatch Institute puts it: "Dunes, barrier islands, mangrove forests, and coastal wetlands are natural shock absorbers that protect against coastal storms. Wetlands, floodplains, and forests are sponges that absorb floodwaters." The destruction of these valuable ecosystems can pave the way to catastrophic damage. Recent history tells the story:

(a) In Indonesia, 60 people were killed and scores missing in late November 2000 after heavy rains, flooding, and landslides in the north and west of the island of Sumatra. The landslides occurred in areas that have been heavily deforested.

(b) South and South-east Asia experienced extensive flooding in 2000, affecting more than 35 million people, displacing hundreds of thousands, killing over 2000, and causing extensive damage to agriculture, infrastructure, and personal property. The flooding is reported to be the worst in 75 years in Viet Nam's delta region, the worst in 40 years in Cambodia, and the worst in a century in western Bangladesh and West Bengal, India.

(c) In December 1999, landslides and flooding triggered by torrential rains in Greater Caracas, Venezuela, claimed 20,000 lives and cost US $15 billion in economic losses. The landslides and flooding were exacerbated by uncontrolled logging and human settlements in the surrounding mountains.

(d) Catastrophic flooding of the Yangtze River in China in 1998 killed 4,000 people, displaced 223 million people, and swamped 25 million hectares of cropland. Although flooding of the Yangtze is a natural phenomenon that has occurred for centuries, deforestation and other land-use changes in the basin in recent decades have greatly increased the potential for catastrophic damage such as that experienced in 1998. Over the last few decades, 85 per cent of the forests in the Yangtze basin have been cleared for logging and agriculture.

(e) When Hurricane Mitch slammed into Central America in 1998, it caused an estimated 11,000 deaths, destroyed 95 per cent of the crops in some nations, displaced half of the population of Honduras, and caused US $4 billion in economic damage in that country – one-third of its GDP. Deforestation was an important contributing factor to the disastrous losses, as denuded hillsides washed away in mudslides and floods, destroying homes, farms, roads, and bridges. Countries in the region are losing some 2 to 4 per cent of their remaining forest cover each year – some of the highest rates of deforestation in the world.

(f) The period between the summer of 1997 and the summer of 1998 has been called "the year the world caught fire." Wildfires raged on several continents, including in Brazil, the United States state of Florida, Indonesia, Mexico, and New Guinea. The effects of the Indonesian fires were particularly widespread and intensive, causing a health-threatening haze across much of South-east Asia that sent thousands of people to hospitals and shut down schools and businesses, costing billions of dollars. The strong El Niño weather phenomenon of that period was one factor behind the fires, as was logging and poor forest management practices that made the forests in the region susceptible to catching fire, even though healthy tropical forests do not usually burn.

- How can reforestation and other forms of environmental restoration be promoted as part of disaster prevention strategies?

- How can environmental vulnerability assessments be used to improve disaster mitigation?

- What types of early warning systems are needed to better predict environmentally-linked disasters and to mitigate their most harmful effects?

B. Coping with climate change

80. The Third Assessment Report of the United Nations Intergovernmental Panel on Climate Change (IPCC), to be officially released in early 2001, estimates that atmospheric concentrations of the greenhouse gas carbon dioxide (CO_2) will climb to double or triple pre-industrial levels by the end of this century, increasing the average temperature at Earth's surface by 1.0–6.0 degrees Celsius. Scientists project that this level of warming could greatly exacerbate a range of "natural" disasters, from flooding, to droughts, to hurricanes.

81. The IPCC projects that sea levels will rise by between 14 and 80 centimeters by 2100, due to the expansion of warming waters and the melting of polar icecaps and other glaciers. Rising seas are expected to produce deadly flooding in many low-lying areas, as higher tides and storm surges displace millions of people from their homes. Highly populated river deltas such as those of the Brahmaputra and Ganges in Bangladesh and the Nile in Egypt, are likely to suffer particularly catastrophic effects, as are small island nations such as Kiribati and the Marshall Islands in the Pacific, Anguilla in the Caribbean, and the Maldives in the Indian Ocean. "Rising sea levels could annihilate our islands as effectively as an atomic bomb," warned the foreign minister of the Marshall Islands at the 1994 United Nations Conference on Small Islands States.

82. Scientists project that the effects of rising waters may be compounded by more frequent and intense storms, including torrential rains, ice-storms, tornadoes, and hurricanes due to changes in both atmospheric and oceanic currents. Some of these same factors may cause El Niño and La Niña-like weather conditions to occur more frequently and with growing force. The disastrous El Niño year of 1997-1998 may have been just a harbinger of things to come. The massive storms, fires, floods, frosts and droughts linked with El Niño in those years claimed thousands of lives and caused economic losses of US $32-96 billion, according to a recent report by UNEP and four other institutions.

83. Deadly heatwaves and droughts are also expected to occur more often in a warming world, exacerbating water scarcity in arid regions such as the Middle East, and diminishing agricultural productivity in many of the world's poorest countries. A 1998 study by the Hadley Center for Climate Prediction and Research, based in the United Kingdom, found that climate change–induced drought could increase the share of Africa's population at risk of hunger by as much as 18 per cent by the 2050s.

84. Weather-related economic losses have climbed steadily in recent years, striking fear in the hearts of the insurance industry. Total weather-related losses over the nineties added up to US $430 billion, more than five times those in the eighties, according to Munich Re data. Of these losses, US $112 billion were insured, mainly in industrial countries. It is not yet clear to what extent these increased losses reflect more frequent storms, floods, and extreme weather events versus other phenomenon such as the growing numbers of people inhabiting vulnerable coastlines.

85. The insurance industry is worried about the likelihood of rapidly rising claims in the years ahead due to climate change. Munich Re has warned that large areas of the world, including the southeastern United States and Indonesia, could become uninsurable. And an executive with CGNU, the largest insurance company in the United Kingdom, told delegates gathered at the Hague in November for the sixth Conference of the Parties to the UNFCCC that if current trends continue, property damage from disasters will exceed the entire value of the global economy by 2065. He noted that at that point, "wealth destruction will have overtaken wealth creation," and warned delegates that that the insurance industry was in danger of "running out of money" to pay these costs.

- What steps are needed to help countries and communities prepare for future El Niños?

- How can UNEP's insurance industry initiative be strengthened?

- How can the stalled negotiations on the Kyoto Protocol be revitalized?

C. Man-made disasters

86. Although natural disasters such as typhoons and floods have been with us for millennia, the modern era has given rise to new types of man-made disasters, such as industrial accidents, oil spills, and environmental damage from high-tech warfare. Impoverished peoples and nations are often particularly vulnerable to these catastrophes of the industrial age. Several deadly accidents in the 1980s helped focus international attention on the threat of man-made disasters:

(a) On the night of 2 December 1984, a storage tank at a pesticide plant in Bhopal, India, owned in part by the United States-based Union Carbide corporation, burst open, sending a cloud of poisonous methyl isocyanate gas toward the Jayaprakash Nagar shantytown that bordered the plant, and from there on to the rest of the city. The accident would claim more than 6,000 lives within a week and over 16,000 to date, going down in history as one of the world's worst environmental disasters;

(b) In April 1986, an explosion and fire at the Chernobyl nuclear power plant in what was then the Soviet Ukraine caused a partial meltdown of the reactor's core, releasing 7 tons of radioactive material into the atmosphere and contaminating land, food, and water throughout much of Europe. More than ten years later, hundreds of thousands of people are thought to be at risk of thyroid cancer and other harmful health effects because of exposure to radiation as a result of the accident;

(c) In November 1986, a fire at a Sandoz chemical storehouse near Basel, Switzerland led to the release of 13-30 tonnes of hazardous chemicals into the River Rhine, killing fish and harming aquatic life for several hundred kilometers downstream.

87. Recent years have seen industrial accidents happening with growing frequency around the world. To cite but a few examples, an explosion at an explosives storage facility in Shaoyang, China, in January 1996 claimed 125 lives and caused 400 injuries; a year later a transport accident in Lahore, Pakistan, released deadly chlorine gas, killing 32 people, injuring 900, and requiring the evacuation of 1,000; and in February 1998 a transport accident in Yaounde, Cameroon, involving petroleum products killed 220 people and injured 130.

88. A number of mining accidents in recent years have caused serious harm to both ecological and human health. In January 2000, 50-100 tons of cyanide and heavy metals spilled into the Tisza River from a joint Australian-Romanian-owned gold-mining operation in northern Romania, killing all aquatic life along some 400 kilometers of the Tisza. After leaving Romania, the Tisza flows into Hungary, before reaching Yugoslavia, where it spills into the Danube. Hundred of tons of dead fish were pulled out of the river, thousands of fishermen were put out of work for years and possibly even for decades, and the drinking water of some 2 million people was temporarily contaminated. UNEP responded to an emergency request from the governments of Romania, Hungary, and the Federal Government of Yugoslavia to undertake a scientific assessment of the damage from the spill.

89. The Romanian mining disaster was only the latest in a string of catastrophic mining accidents. In 1992, large quantities of cyanide spilled from the Summitville mine in the United States state of Colorado, killing all life along 27 kilometers of the Alamosa River. In mid-1995, a dam burst near a gold-mining operation in Guyana, causing a 72 kilometer-long red toxic plume to spread in the Essequibo River, which provides fish and drinking water to people living in the region. And in April 1998 a storage dam broke at the Los Frailes mine in Spain, releasing tens of thousands of litres a day of toxic sludge into the River Guadiamar, posing a grave ecological threat to the downstream Doñana National Park, a Ramsar and World Heritage Site and one of the largest protected wetlands in Europe.

90. Warfare is yet another type of societal emergency which often brings with it large environmental disruptions on top of its incalculable human costs. The recent upheavals in the Balkans are a case in point. An October 1999 UNEP/UNCHS report on the environmental implications of the Kosovo crisis concluded that the NATO bombing had caused significant damage at some sites. The report called for international assistance with environmental clean-up at four "hotspots" – the Pancevo industrial complex, the Zastava car plant, the Novi Sad oil refinery, and the Bor ore smelting complex. More recently, the UNEP/UNCHS Balkans Task Force has confirmed radioactive contamination problems at several sites where depleted uranium was used during the war.

- How can UNEP's Awareness and Preparedness for Emergencies at the Local Level (APELL) programme be strengthened?

- How can the public's "right to know" about health threats from chemical accidents be ensured?

- Is the United Nations Economic Commission for Europe Convention on the Transboundary Effects of Industrial Accidents a useful model for other regions? How can provisions for liability and compensation be integrated into this convention and in other policy arenas?

- How can the work of the joint UNEP and Office for the Coordination of Humanitarian Affairs (OCHA) environmental unit be enhanced?.

- How can UNEP better cooperate with other international agencies active in disaster preparedness and response? In particular, how can UNEP best contribute to the International Strategy for Disaster Reduction (ISDR)?

- What role can the military play in helping to prevent or respond to environmental disasters?

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IV. THE ENVIRONMENTAL DIMENSION OF THE DIALOGUE AMONG CIVILIZATIONS

A. Background

91. The year 2001 has been proclaimed the United Nations Year of Dialogue among Civilizations in order to emphasize that the current globalization process encompasses not only economic, financial and technological aspects but also human, cultural and spiritual dimensions and the interdependence of humankind and its rich diversity.

92. The seminal report Global Environment Outlook 2000, recently issued by UNEP, concludes that as we enter the new millennium, globalization has become the dominating influence and that advances in technology and communication are shrinking geographical distances and dissolving political boundaries. The phenomenon of globalization is also aggravating threats to ancestral cultures and indigenous communities.

93. Of the estimated 6,000 cultures in the world, about 4,500 are indigenous. There are about 6,000 languages spoken in the world today. Some 2,500 of those are in immediate danger of extinction, and a still greater number are losing the ecological context that keeps them alive as functional languages. It has been established that there is close correlation between areas of biological and cultural diversity and that most indigenous peoples live in areas of megadiversity. These species-diverse environments in which indigenous peoples live are deeply tied to productive activities and spiritual values. While indigenous peoples have utilized resources, they have, nonetheless, conserved the vast diversity of animals, plants and ecosystems.

94. The notion of environmental conservation is an element of ancient cultures throughout the world. From the perspective of indigenous peoples, nature is holistic with the human being at the centre of the natural world. From that perspective, all creation is sacred and the sacred and secular are inseparable. Spirituality is the highest form of consciousness. The international community needs to redouble its efforts to protect the rich heritage of indigenous peoples.

95. While there are still approximately 300 indigenous peoples to be found across the world among our many civilizations, a number of peoples and their civilizations have disappeared in the past as a result of military conflict, foreign invasion or domination. Re-examination of human history and prehistory from an ecological perspective reveals patterns of anthropogenic environmental degradation.

96. Together, the nine major faiths of the world represent billions of people. All faiths share a common ethic based on harmony with nature, although a wide gap often exists between religious texts and the current practices of the adherents of those religions. Religion has had major positive influences on the natural environment. By promoting inter-religious dialogue, the United Nations Year of Dialogue among Civilizations can bring together this common element among the world's faiths. Promotion of dialogue is central to the purpose of this proclamation. The recent UNEP publication Earth and Faith: A Book of Reflection for Action is a product of UNEP's collaboration with the Interfaith Partnership for the Environment. The international seminar on the environment, religion and culture to be held in Tehran in April 2001 in collaboration with UNEP could provide a unique opportunity for further promotion of the interfaith dialogue from an environmental perspective.

97. Without an understanding and tolerance for one another's cultural and spiritual dimensions, the peoples of the world will never achieve peace. In turn, the natural world upon which we depend will also suffer irreparably, given the intricate linkage between the environment and peace. The ecological crisis facing humanity is deeply rooted in a complex assortment of economic, social and cultural factors, including belief systems, social attitudes and popular perceptions. Both the prevailing unsustainable pattern of production and consumption and certain patterns of economic growth promoted by modern society are closely linked to belief systems and social attitudes. The Global Environmental Outlook 2000 report clearly demonstrates that if present trends in population growth, economic growth and consumption patterns continue, the natural environment will be placed under increasing stress. In the United Nations Millennium Declaration, adopted in September 2000, the more than 110 signatory heads of State agreed on the

fundamental values essential to international relations in the twenty-first century. They asserted: "Differences within and between societies should be neither feared nor repressed, but cherished as a precious asset of humanity. A culture of peace and dialogue among all civilizations should be actively promoted." It is in this context that a new environmental ethic based on universally shared environmental values is urgently required.

98. A dialogue among civilizations is certainly not a new idea. Indeed, the new mandate of UNEP is to promote a dialogue among civilizations catalysing consultation and cooperation among countries for the benefit of the global environment. The Malmö Declaration adopted by the first Global Ministerial Environment Forum, held in Sweden in May 2000 with the participation of more than 100 ministers, calls for special attention to threats posed by globalization to cultural diversity and traditional knowledge, in particular the cultures of indigenous and local communities.

99. The celebration of the United Nations Year of Dialogue among Civilizations provides an opportunity to promote a common understanding of the environmental challenges facing the civilizations that make up today's world. UNEP stands ready to take the lead in spearheading the efforts of the international community to bring into being a new environmental ethic for the twenty-first century.

100. The following background document is submitted by the Executive Director to assist participants at the twenty-first session of the Governing Council/Global Ministerial Environment Forum in celebrating the International Year of Dialogue among Civilizations from an environmental perspective.

B. Introduction

> "Diversity is not only the basis for the dialogue among civilizations
> but also the reality that makes dialogue necessary."
> Kofi Annan, Secretary-General of the United Nations

101. By its resolution 53/22 of 4 November 1998, the General Assembly recognized "the diverse civilizational achievements of mankind, crystallizing cultural pluralism and creative human diversity", and reaffirmed "that civilizational achievements constitute the collective heritage of mankind, providing a source of inspiration and progress for humanity at large". It welcomed "the collective endeavour of the international community to enhance understanding through constructive dialogue among civilizations on the threshold of the new millennium". In addition, it decided to proclaim 2001 as the United Nations Year of Dialogue among Civilizations. The General Assembly invited "Governments, the United Nations system, including the United Nations Educational, Scientific and Cultural Organization, and other relevant international and non-governmental organizations, to plan and implement appropriate cultural, educational and social programmes to promote the concept of dialogue among civilizations, including through organizing conferences and seminars and disseminating information and scholarly material on the subject, and to inform the Secretary-General of their activities".

102. The United Nations Year of Dialogue among Civilizations is intended to provide an opportunity to emphasize that the present globalization process does not only encompass economic, financial and technological aspects but must also focus on human cultural, spiritual dimensions and on the interdependence of humankind and its rich diversity. While it is recognized that globalization and the resulting free movement of ideas and human beings allow unprecedented encounters between individuals, societies and cultures, it also profoundly affects lifestyles and patterns of behaviour, decision-making processes, methods of governance, creativity and forms of expression. This initiative is also based on the recognition that there is a need for a renewed commitment to promote and develop international cooperation and understanding on the basis of the recognition of the equal dignity of individuals and of societies and the uniqueness of their contributions to human advancement.

103. In August 1999, the Secretary-General appointed Mr. Giandomenico Picco as his Personal Representative for the United Nations Year of Dialogue among Civilizations to assist him in this task. In his report to the fifty-fourth session of the General Assembly contained in the annex to the report of the Secretary-General on the United Nations Year of Dialogue among Civilizations (A/54/546), Mr. Picco

elaborates on the conceptual basis, the allowance for reality and the goals of this initiative. He states "The membership of the United Nations shares a set of common values, as reflected in the Charter. The expansion of that common denominator of values would, by definition, facilitate dialogue, as Member States would share more and more common principles. … In this regard, the United Nations can play a significant role by seeking to ensure that, in the process of expansion, identities are preserved. … The message of diversity, as it relates to the United Nations system, can serve as a tool to protect distinct identities, as the common denominator of values which bring us all together expands. The greater the appreciation of diversity, the deeper the sense of identity and the sounder the enlargement of the common denominator of values. These developments will, in turn, strengthen the United Nations system." Mr. Picco goes on to suggest: "It would be fitting, therefore, if the spirit of dialogue among civilizations could open the door to a major process of reconciliation in one or more parts of the world. Just as, during the 1990s, many who went to war used the threat of diversity as a justification for conflict, perhaps in the future those who seek peace will use the spirit of dialogue among civilizations as a means to move forward."

104. In its resolution 54/113 of 10 December 1999, the General Assembly welcomed the decision of the Secretary-General to appoint a personal representative for the United Nations Year of Dialogue among Civilizations. It invited all parties concerned to continue and intensify planning and to organize appropriate cultural, educational and social programmes to promote the concept of dialogue among civilizations. At its twenty-sixth session, held in Geneva from 11 to 13 July 2000, the Joint United Nations Information Committee, in reviewing the plan for the dialogue (JUNIC/2000/6), suggested the slogan "Diversity is not a threat".

105. To launch the United Nations Year of Dialogue among Civilizations, the United Nations Educational, Scientific and Cultural Organization (UNESCO), in cooperation with the United Nations, convened a round table on the eve of the United Nations Millennium Summit, held in New York from 6 to 8 September 2000. The round table was held with the support of the President of the Islamic Republic of Iran and was chaired by the Director-General of UNESCO. The Secretary-General, 12 heads of State (Afghanistan, Algeria, Georgia, Indonesia, the Islamic Republic of Iran, Latvia, Mali, Mozambique, Namibia, Nigeria, Qatar and the Sudan), the Secretary of State of the United States of America and the Ministers for Foreign Affairs of Azerbaijan, Costa Rica, Egypt, India and Iraq were among the participants, together with a number of other public figures, scholars, writers and artists.

106. On the same day, the Secretary-General announced the formation of a group of 16 distinguished personalities to work with his personal representative to prepare a report to be submitted to him by late summer 2001, before submission to the fifty-sixth session of the General Assembly. In making the announcement, the Secretary-General said with reference to the expected report: "Those reflections will start from the realization that we have to use diversity as an asset in an increasingly interconnected world. Indeed, the perception of diversity as a threat is the very seed of war. Diversity is not only the basis for the dialogue among civilizations, but also the reality that makes dialogue necessary."

107. In his report to the fifty-fifth session of the General Assembly (A/55/492/Rev.1), the Secretary-General suggested: "In striving towards those objectives, the conceptual journey may be articulated along the following lines: the indignities of the 1990s; diversity and the United Nations; diversity as the human face of globalization; and dialogue as a seed for a new paradigm of international relations". Since examples are the best means of conveying a message in a convincing manner, the Secretary-General also suggested that the faces, names and stories of 12 individuals from a spectrum of societies, who have reached across the "divide" to the "other," will be shown in short television spots. The 12 spots of 30 seconds each will be offered to all television stations in the world for broadcasting as many times as possible during 2001.

108. Promoting dialogue among civilizations and cultures is key to the mission and programmes of UNESCO. According to its constitution, UNESCO was established with the objective of "advancing, through the educational and scientific and cultural relations of the peoples of the world, the objectives of international peace and of the common welfare of mankind for which the United Nations Organization was

established and which its Charter proclaims". Based on such recognition, UNESCO has been assigned a special responsibility for the commemoration of the United Nations Year of Dialogue among Civilizations.

109. The promotion of international cooperation in the field of environment is central to the mission of UNEP. As emphasized in General Assembly resolution 2997 (XXVII) of 15 December 1972 establishing UNEP, "problems of the environment constitute a new and important area for international cooperation, and … the complexity and interdependence of such problems require new approaches". Addressing the thirtieth session of the General Conference of UNESCO on 29 October 2000, the President of the Islamic Republic of Iran, Mohammad Khatami, said that the dialogue among civilizations and cultures should naturally examine the issues that are vital and urgent for mankind; and the foremost of these concerns is the relationship between man and nature.

110. Indeed, celebration of the United Nations Year of Dialogue among Civilizations provides a unique opportunity to enhance international efforts under way to overcome the environmental challenges facing mankind. The relation between man and nature is an important feature of the diverse cultures of the world, and the spiritual and ethical dimensions of environmental problem-solving cannot be underestimated. It was precisely with this end in mind that the Malmö ministerial meeting was held. It brought together more than 100 ministers, who welcomed the proclamation by the General Assembly of the year 2001 as the United Nations Year of Dialogue among Civilizations. As stated in the World Charter for Nature, adopted by the General Assembly in 1982 on the initiative of the Governing Council of UNEP: "Civilization is rooted in nature, which has shaped human culture and influenced all artistic and scientific achievements, and living in harmony with nature gives man the best opportunities for the development of his creativity, and for rest and recreation".

111. The present report is being submitted to assist the Global Ministerial Environment Forum/twenty-first session of the Governing Council in planning the event to be held in Nairobi on 8 February 2001 as a high point of the celebration of the United Nations Year of Dialogue among Civilizations from an environmental perspective. This event is being organized as the response of UNEP and the Global Ministerial Environment Forum to the decision adopted by the fifty-fifth session of the General Assembly, which encouraged "all Member States, regional and international organizations, civil society and non-governmental organizations to continue to develop appropriate initiatives at all levels to promote dialogue in all fields with a view to fostering mutual recognition and understanding among and within civilizations".

C. Culture for peace

112. In his report to the fifty-fourth session of the General Assembly, the Secretary-General's personal representative recalled: "Dialogue among civilizations is not an entirely new concept within the United Nations. Other concepts with similar and complementary purposes and values have preceded it, such as the recent General Assembly resolutions on the culture of tolerance and the culture for peace." UNESCO considers the United Nations Year of Dialogue among Civilizations as a logical sequel to the celebration, in 2000, of the International Year for the Culture of Peace and, by a decision adopted by its Executive Board at its 156th session on 16 March 2000, underlined the conceptual interrelation between the two years.

113. The concept of culture embraces all capacities and habits acquired by people as members of society. In his statement at the opening of the international meeting on culture and the environment held from 6 to 28 October 2000 in Branska Stiavnica, Slovakia, the Executive Director of UNEP stated: "Culture is the complex whole of solutions which the human community inherits, adopts or invents in order to meet the challenges of its natural and social environment." In the same vein, article 1 of the Declaration on a Culture of Peace adopted by the General Assembly at its fifty-third session, notes: "A culture of peace is a set of values, attitudes, traditions and modes of behaviour and ways of life based … on efforts to meet the developmental and environmental needs of present and future generations." Article 3 of that Declaration provides that the fuller development of a culture of peace is integrally linked to promoting sustainable development.

114. By its resolution 53/25 of 10 November 1998, the General Assembly proclaimed the period 2001–2010 as the International Decade for a Culture of Peace and Non-Violence for the Children of the World. The Programme of Action on a Culture of Peace adopted as a basis for the International Decade for a Culture of Peace contains a section on actions to promote sustainable economic and social development, and calls for "capacity-building in development strategies and projects to ensure environmental sustainability, including preservation and regeneration of the natural resource base."

115. The right to live in a peaceful and secure environment free from war and military conflict is fundamental to human well-being. It is also fundamental to the protection of the environment. Principle 26 of the Stockholm Declaration provides that "man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction", and Principle 25 of the Rio Declaration states that "peace, development and environmental protection are interdependent and indivisible". The hazards of wars do not end with the coming of peace, as documented by UNEP in a number of cases, notably the Gulf War of 1991. This has also been confirmed more recently by the report on the environmental consequences of the Kosovo conflict prepared by the Joint Task Force on the Balkans, organized by UNEP and the United Nations Centre for Human Settlements (UNCHS) (Habitat) and chaired by Mr. Pekka Haavisto.

116. The end of the cold war saw a sharp increase in the number of internal armed conflicts, in particular in Africa. In his report on the causes of conflict and the promotion of durable peace and sustainable development in Africa (A/52/871–S/1998/318), the Secretary-General identified competition for scarce land, water resources and other natural resources and minerals among the causes of the increased number of armed conflicts in Africa. This situation is at the origin of the ever-growing number of refugees in the world. According to the Office of the United Nations High Commissioner for Refugees (UNHCR), there are more than 21.5 million refugees in the world. A report on the environmental impact of refugees in Guinea, prepared in March 2000 by UNEP in collaboration with UNCHS (Habitat) and UNHCR, provides ample evidence on the devastating effects of refugees on the environment. Unless current trends are reversed, it is likely that the predicted aggravation of the scarcity of natural resources, in particular water resources, will led to a further escalation of conflicts.

117. In his statement to the General Conference of UNESCO at its thirty-sixth session, on 29 October 1999, the President of the Islamic Republic of Iran stated: "Since regression in the intellectual development process is almost impossible, the result is a lasting and broad-reaching peace, encompassing peace between cultures, religions, civilizations and also peace between man and nature. I believe that, today, this peace between man and nature is paramount."

118. The environment is an integral component of the concept of peace and international security. Over the past few decades, it has become increasingly clear that the concept of peace and security is much wider than its military dimension. It has been realized that the security of nations depends at least as much on economic well-being, social justice and ecological stability. Environmental problems transcend political and geographical frontiers and ignore the North-South divide. The threats to the environment arise, inter alia, from possible global warming and associated sea level rise, drought, desertification, extreme weather events, man-made natural disasters, the scarcity and pollution of water, loss of biological diversity, over-exploitation of natural resources, including forests, and the emergence of new diseases. These all pose major threats to peace and security worldwide.

119. In this context, the Secretary-General's report to the General Assembly at its fifty-second session on the causes of conflict and the promotion of durable peace and sustainable development in Africa (A/52/871-S/1998/318) identified the achievement of sustainable development as a major contribution to peace and security for Africa. In his report to the General Assembly at its fifty-first session entitled "Renewing the United Nations: a programme for reform" (A/51/950), the Secretary-General noted: "Of the challenges facing the world community in the next century, none will be more formidable or pervasive [than] the attainment of a sustainable equilibrium between economic growth, poverty reduction, social equity and the protection of the Earth's resources, commons and life support systems."

120. In his report to the Millennium Assembly entitled "We, the peoples: the role of the United Nations in the twenty-first century" (A/54/2000), the Secretary-General commented: "The founders of the United Nations set out, in the words of the Charter, to promote social progress and better standards of life in larger freedom – above all, freedom from want and freedom from fear. In 1945, they could not have anticipated, however, the urgent need we face today to realize yet a third: the freedom of future generations to sustain their lives on this planet. We are failing to provide that freedom. On the contrary, we have been plundering our children's future … to pay for environmentally unsustainable practices in the present." In adopting the United Nations Millennium Declaration, contained in General Assembly resolution 55/2 of 8 September 2000, the heads of State and government attending the United Nations Millennium Assembly in New York proclaimed, "We must spare no effort to free all of humanity, and above all our children and grandchildren, from the threat of living on a planet irredeemably spoilt by human activities, and whose resources would no longer be sufficient for their needs."

121. The report World Resources 2000-2001, prepared in collaboration with UNEP, states: "In every respect, human development and human security are closely linked to the productivity of ecosystems. Our future rests squarely on their continued viability." It might almost be said that sustainable development is synonymous with peace and security in the twenty-first century. In the context of its emerging enhanced collaboration with UNESCO, as evidenced by the memorandum of understanding between the two organizations, UNEP intends to work closely with UNESCO on the implementation of the environmental dimensions of the action plan for the International for a Culture Decade of Peace and Non-Violence for the Children of the World.

D. Culture, development and civilizations

122. Human civilization is a mosaic of different cultures resulting in a cultural diversity of immense magnitude across the globe. One of the goals of the dialogue among civilizations is to spread knowledge and appreciation of the historical and cultural background of peoples living in different circumstances and areas of the world. The relation between culture and economic development is embedded in all cultures of the world. It is widely recognized that development divorced from its human or cultural context—in other words, economic development without a human face—is growth without a soul. If economic development has been always part of people's culture, sustainable development should be the seed for the emergence of a renewed universal culture of mankind in the new millennium.

123. The Mexico City Declaration on Cultural Policies, adopted on 6 August 1982 by the World Conference on Cultural Policies, stressed that "in its widest sense, culture may … be said to be the whole complex of distinctive spiritual, material, intellectual and emotional features that characterize a society or a social group. It includes not only the arts and letters, but also modes of life, the fundamental rights of the human being, value systems, traditions and beliefs." In proclaiming the World Decade for Cultural Development for the period 1988-1997, the United Nations stressed the importance of acknowledging the cultural dimension of development. In 1992, an independent World Commission on Culture and Development was established by the Secretary-General to prepare a policy-oriented report on the interactions between culture and development.

124. This report, Our Creative Diversity, submitted to the General Assembly in November 1995, stressed that development embraces not only access to goods and services, but also the opportunity to choose a full satisfying, valuable and valued way of living together, thus encouraging the flourishing of human existence in all its forms and as a whole. It argued that culture could help to promote or hinder rapid economic growth. In its chapter on culture and environment, the report noted that sustainable development must be seen as an integral part of an ongoing process of culture where the needs of the present generation can be met without compromising the ability of future generations to meet their needs. Recognizing that sustainable development is a multi-faceted concept, the report noted that any approach which does no more than simply address strictly biophysical exchanges between societies and the environment—the impact of the environment on man and vice versa — is incomplete. The report called for a culturally diversified approach which takes account of different attitudes to culture, the environment and development.

125. The programme of action adopted on 2 April 1998 by the Intergovernmental Conference on Cultural Policies for Development in Stockholm, Sweden, recognized among its guiding principles that sustainable development and the flourishing of culture are interdependent. It affirmed that cultural diversity as one of the main components of endogenous and sustainable development policy should be implemented in coordination with policies in other social areas, on the basis of an integrated approach, and that any policy for development must be profoundly sensitive to cultural diversity.

126. In the context of the dialogue among civilizations, it is important to promote an exchange of experience on the ways in which the world's different cultures have integrated the environmental dimension of the relation between culture and development. Even more important, this must be done with a view to learning from past mistakes and re-evaluating how environmental degradation has contributed to the disappearance and collapse of past civilizations. In this context, Wole Soyinka, the Nigerian writer and 1986 Nobel laureate for literature, was asked at the round table held in New York on 5 September 2000 to launch the United Nations Year of Dialogue among Civilizations what it meant to examine the past for answers to human progress. He expressed his firm belief that the exhumation of the past could not be avoided if one were to understand the present.

127. It is well known that past civilizations have disappeared as a result of military conflict, foreign invasion or domination. A re-examination of human history and prehistory from an ecological perspective reveals certain patterns of anthropogenic environmental degradation. Thus, Palaeolithic hunter-gatherers may have caused local extinctions of major species and may have contributed to the global extinction of species. Indeed, neolithic, ancient and medieval civilizations may have caused erosion, deforestation, salinization of arable lands and desertification similar to—but on a smaller scale than—that generated by modern agricultural practices. Recent advances in the techniques of historical reconstruction have provided ample evidence of how ancient civilizations collapsed as a result of unsustainable economic and environmental practices. The report World Resources 2000-2001 provides a number of historical examples of the proper use and the abuse of ecosystems. It explains how the North African provinces of the Roman empire (50 B.C.-450 A.D.), once highly productive granaries, gradually declined as Roman demands for grain pushed cultivation onto marginal lands prone to erosion. In his book God's Last Offer: Negotiating for a Sustainable Future, Ed Ayres provides the following documented examples:

(a) The civilizations of ancient Sumer prospered for more than two millennia, during which eight of the world's first cities arose in the region known today as Iraq. By the third millennium B.C., the population of the city of Uruk, numbering some 50,000, developed a system of intensive irrigation from the Tigris and Euphrates rivers. But the hot climate caused heavy evaporation, generating widespread salinization of the soil. By 1700 B.C., the Sumerians could no longer feed themselves and fell to invasion. The civilization collapsed and the eight cities returned to dust. Similar factors may explain the disappearance around 1750 B.C. of the Harappan civilizations, which arose around 2300 B.C. along the Indus River in what is now Pakistan;

(b) The Tehuacan Valley society arose 7000 years ago in the south-central region of what is modern-day Mexico. It was one of the first neolithic societies to make the transition from hunting to farming. By 2000 B.C., its crops were about 50 per cent irrigation-dependent, and by 1000 B.C. they were about 80 per cent irrigation-dependent. Exactly what happened to the Tehuacanos' sophisticated agricultural society is not certain. But a few centuries later, their crop yields declined dramatically and their civilization came to an end;

(c) Deforestation may be the main reason for the disappearance of the Mayan civilization after three millennia of prosperity in parts of what is now southern Mexico and Central America;

(d) It is also most likely that when its population outgrew the island's natural carrying capacity the civilization of the Easter Islands collapsed, after a thousand years of prosperity.

128. A re-examination of human history also reveals the existence of culturally integrated environmental ethics that served to minimize the impact of human activities on the environment. The very origin of

environmental conservation and sustainable use of biological resources is found in ancient cultures existing throughout the world and in particular in those of indigenous peoples, local and traditional communities. Learning from those cultures whose values are rooted in nature may help to make sustainable development a reality. If we are to bring such a vision to reality, we must devote greater attention to the interaction between culture and the environment. The celebration of the United Nations Year of Dialogue among Civilizations provides an exceptional opportunity for us all to learn more about the sustainable environmental practices of indigenous peoples and, most important, to step up international efforts aimed at preserving and maintaining this unique wealth of mankind.

E. Cultural diversity, biodiversity and indigenous peoples

129. There are 350 million indigenous people in the world, living in over 70 countries. According to the World Wide Fund for Nature (WWF), nearly 20 per cent of the world's surface area and 85 per cent of its protected areas are inhabited by indigenous peoples. Half of these live in tropical rain forests, which are known to harbour 80 per cent of our planet's biological diversity. Of the 6,000 estimated cultures in the world, 4,500 are indigenous. According to UNESCO, about 6,000 languages are spoken in the world today, but some 2,500 of those are in immediate danger of extinction and an even greater number are losing the environmental context that keeps them as functional languages. The impact of the disappearance of each language has been compared to that of a bomb dropped on a museum. According to a WWF study, of the nine countries that account for 60 per cent of all human languages, six are also centres of high biological diversity. Of the 12 megacentres for biological diversity, 10 can be found among the 25 countries containing the largest number of endemic languages. Indeed, cultural diversity and biological diversity are intimately and inextricably interrelated. There is, therefore, a close correlation between biological diversity, cultural diversity and indigenous peoples.

130. Over the course of their history, indigenous peoples have developed lifestyles and cultures which are intricately tied to nature. Their value and belief systems have evolved to enable them to respect nature and to live in harmony with nature, conserving the diversity of life upon which they depend. The species-diverse environments in which indigenous peoples live are deeply embedded in their productive activities and spiritual values. Indigenous peoples have utilized and conserved the vast diversity of genes, species and ecosystems since the very dawn of Homo sapiens. The following characteristics of natural resource management by indigenous peoples have been identified: ancestral attachment to lands and resources; management of large territories or areas; collective rights over resources; traditional systems for the control, use and management of land resources; traditional institutions and leadership structures for self-governance and decision-making; systems for benefit-sharing; traditional ecological knowledge; and subsistence economies that are largely self-sufficient and rely on resource diversity rather than monoculture or simplified ecosystems.

131. The way of life of most indigenous peoples depends directly on biological diversity. Cultural and religious beliefs and traditional spiritual values are often used to prevent overexploitation of resources and to sustain the systems in which indigenous societies live for their own benefit and for the benefit of generations to come. The concept of the sustainable use of biological diversity, one of the three objectives of the Convention on Biological Diversity, is inherent in the value systems of indigenous and traditional societies. From many indigenous peoples' perspective, nature is seen as a whole, and the human being is at the centre of such a holistic approach.

132. According to the writer Graham Baines, this holistic approach is well captured by the Fijian word "vanua", a widespread concept among Pacific island communities. To Fijians, the land, all that grows upon it and the people who draw their sustenance from that land are one and indivisible. Many indigenous peoples use the symbol of the circle. It is the symbol of the inclusive caring community in which individuals are respected and interdependence is recognized within a holistic vision of creation. Human beings were thought to be part of nature, and a good human life was, therefore, understood to be in harmony with it.

133. In the belief systems of indigenous peoples, Earth is the "spiritual mother" providing life, nourishment and sustenance, and forming their cultural and spiritual identity. The land has been inherited from a long

line of ancestors. It is a sacred asset held in common for the benefit of future generations. For example, the Iroquois tribe in North America would plan for the seventh generation when making their decisions. According to Jeff McNeely of the World Conservation Union (IUCN), this time-frame coincides with the lifespan of the dominant tree in their region.

134. From that perspective, all creation is sacred, and the sacred and the secular are inseparable. Nature is represented as inspired or divine and is the subject of respect and reverence. The Declaration of the Sacred Earth Gathering adopted in June 1992 in conjunction with the United Nations Conference on Environment and Development states: "We believe that the universe is sacred because all is one. We believe in the sanctity and integrity of all life and all life forms. We affirm the principles of peace and non-violence in governing human behaviour towards one another and all life."

135. The concept of protected areas is intrinsic to most of the indigenous peoples' systems. The cultural landscapes of indigenous peoples were established thousands of years before the concept of sustainable development was promoted by the World Commission on Environment and Development (Brundtland Commission). Thousands of years before the establishment of the Yellowstone National Park in the United States in 1872, traditional societies had established some form of protected areas, sometimes for religious purposes and sometimes for social reasons. A combination of both approaches can be also found in certain traditional societies. For example, forest peoples of Benin and Côte d'Ivoire consider their forests as sacred, and the management of these forests is based on a system of religious prohibitions. According to McNeely, in north-east Indian states like Manipur, as much as 10 to 30 per cent of the land was permanently maintained under natural vegetation in the form of sacred groves.

136. Some ancient communities even developed detailed natural resource regulations enforced by a strong system of social, moral—and sometimes even economic—sanctions. For example, many traditional communities, such as the Tara'n Dayaks of West Kalimantan or the peoples in the Amazonian region of Peru, have established community reserves and formulated rules about how the species in these reserves can be exploited. The objective of such practices was to preserve these resources for the existing community and for future generations. Papua New Guinea has 847 known languages, and its wildlife has been preserved by limited rights of access that restricted hunting pressure and by the complete protection of certain species (see Traditional Conservation in Papua New Guinea, edited by Louise Morauta, John Pernetta and William Heaney). In arid areas such as Djibouti, the Afar have developed an appropriate customary code for sound resource management, suitable to their nomadic origin. Under this code, the cutting of trees is considered to be a crime and is severely punished.

137. Local knowledge is a pillar of traditional medicine and health systems. The World Health Organization (WHO) estimates that up to 80 per cent of the non-industrial world's population rely on traditional forms of medicine. According to World Resources 2000-2001, 42 per cent of the world's 25 top-selling drugs in 1997 were derived from natural sources. The global market value of pharmaceuticals derived from genetic resources is estimated at $75–150 billion. Little, however, has been done to protect and maintain the traditional knowledge of these medicines. In December 1999, UNEP, together with WHO and the Center for Health and the Global Environment at Harvard Medical School, launched the project "Biodiversity: its importance to human health", in which leading scientists and health professionals from around the world are to compile state-of-the-art knowledge about the importance of other species to human health and produce a report for the United Nations. The issues to be covered include an examination of the role of ethno-botanical knowledge in natural medicines. The results of this study will be presented to the special session of the General Assembly to be held in 2002, 10 years after the Rio Earth Summit.

138. Feeding into this initiative is a project developed by Environment and Development in the Caribbean (ENDA-CARIBE) and the Medicinal Plants Specialist Group of IUCN with the assistance of UNEP on the conservation of biological diversity and the integration of traditional knowledge on medicinal plants in national primary health care policy in the Caribbean and Central America. The project was mounted as a direct response to the recommendation of a meeting on scientifically validated medicinal plants and their use in primary health care in the Caribbean and Central America and held in Panama City, January 1999. At that meeting, ministries of health and national universities recognized the use of medicinal plants as a first health

care resource for the peoples of the region and one that formed part of the region's cultural heritage. A parallel process is taking place in other parts of the world. In Africa, for example, a regional conference was held in Nairobi in May 2000 in collaboration with UNEP on the theme: "Medicinal plants, traditional medicines and local communities in Africa: challenges and opportunities of the new millennium".

139. Farmers in many parts of the world and in particular in Africa use indigenous soil and water conservation practices as an integral part of their farming systems. The importance of the collection, analysis and exchange of information about indigenous knowledge is reflected not only in the provisions of the Convention to Combat Desertification, and in particular its article 16 (g) on scientific and technical cooperation, but also in the programme of work of the Committee on Science and Technology set up under the Convention. Prompted by this recognition of the value of such indigenous practices, UNEP is promoting indigenous knowledge though its programme on dryland success stories and through the activities of the Global Environment Facility, such as the project on people, land management and environmental change implemented in collaboration with the United Nations University.

140. The "principles and guidelines for the protection of the heritage of indigenous people" considered by the Sub-Commission on the Promotion and Protection of Human Rights at its fifty-second session, held in Geneva from 28 February to 1 March 2000, stipulate: "The effective protection of the heritage of the indigenous peoples of the world benefits all humanity. Its diversity is essential to the adaptability, sustainability and creativity of the human species as a whole. Recognizing, respecting and valuing their customs, rules and practices for the transmission of their heritage for future generations are essential to indigenous peoples, their identity and dignity."

141. As a follow-up to the International Year of the World's Indigenous People, the International Decade of the World's Indigenous People was officially launched by the General Assembly on 10 December 1994. The International Day of the World's Indigenous People is observed each year on 9 August, the anniversary of the opening of the first session of the working group on indigenous peoples held in 1982. The goal of the decade is to strengthen cooperation for the solution of problems faced by indigenous people in such areas as human rights, the environment, development, education and health. In that regard, the programme for the decade recognizes the worth and diversity of cultures of indigenous people together with their specific forms of social organizations and emphasize their potential contributions to humankind.

142. Chapter 26 of Agenda 21 calls for the strengthening of the role of indigenous peoples and their communities. A number of international governmental and non-governmental organizations, such as the United Nations Commission on Human Rights, UNESCO, the International Labour Organization (ILO), the Commission on Sustainable Development and its forums on forests, the United Nations Development Programme (UNDP), the World Bank, WWF, IUCN and others, have integrated the promotion of the rights of indigenous peoples into their respective activities. Among major international instruments, the Convention on Biological Diversity was one of the first to give due attention to the role of indigenous and local communities in in situ conservation. In its preamble, the Convention recognizes the "close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components".

143. In its article 8 (j), the Convention stipulates that each contracting party should, "subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices". The Convention also enshrines the importance of customary practice in biodiversity conservation and calls for its protection and for the equitable sharing of benefits from the use and application of traditional technologies (articles 10 (c) and 18, paragraph 4). Article 11 calls for economically and socially sound incentive measures, and under article 14 the parties are required to prevent negative environmental impacts on biodiversity. Accordingly, at its fifth meeting held in Nairobi

from 15 to 26 May 2000, the Conference of the Parties adopted a comprehensive work programme on the implementation of article 8 (j) based on the recommendation of the Ad Hoc Open-ended Inter-sessional Working Group on Article 8 (j) and Related Provisions of the Convention.

144. These commitments notwithstanding, the situation of indigenous knowledge in the modern world remains highly precarious. Ironically, while scientific and commercial interest in the ecological knowledge and resource management practices of indigenous peoples is growing, the traditional knowledge of these peoples is under serious threat. Part of their ancestral heritage is disappearing at an unprecedented rate under the impact of a number of factors, including globalization and modern technological advances. Approximately 10 per cent of the surviving indigenous languages are close to extinction. It is in this awareness that the Malmö Declaration adopted by the first Global Ministerial Environment Forum stated: "We must pay special attention to threats to cultural diversity and traditional knowledge, in particular of indigenous and local communities, which may be posed by globalization." The United Nations Year of Dialogue among Civilizations offers an opportunity to the international community to redouble its efforts for the protection of the cultural heritage of indigenous peoples. As a contribution to such efforts, UNEP recently published a study entitled Cultural and Spiritual Values of Biodiversity as a contribution to the Global Biodiversity Assessment financed by the Global Environment Facility.

F. Religions and environment

145. Religion is sometimes defined as the relationship between people and that which they regard as holy, often in supernatural terms. Nine of the world's major faiths represent billions of people worldwide. They include 750 million Hindus, 10 million Jains, 700 million Buddhists, 12.5 million Jews, just under 2 billion Christians, 1.4 billion Muslims, 16 million Sikhs and 5 million Baha'is. All faiths around the world share a common ethic based on harmony with nature, although a wide gap is often perceived between the religious texts and the current practices of the adherents of those religions.

146. There is a close relationship between religion and environment. Religion has had major positive influences on the natural environment. For example, under animism, a view of the world found among many traditional peoples, a spiritual link is made between humans and nature. Many traditional approaches to conservation are based on various kinds of animism, and traditional beliefs have led to the founding of sacred sites. The Baha'i faith teaches that the grandeur and diversity of the natural world are purposeful reflections of God. Buddhism teaches that respect for life in the natural world is essential, underpinning the interconnectedness of all that exists.

147. Christianity teaches that all creation is a loving act of God and that humanity may not destroy biological diversity or destroy God's creations without the risk of destroying itself. In the Christian Bible, the book Ecclesiastes states in chapter 3, verse 19: "For that which befalleth the sons of men befalleth beasts ... as the one dieth, so dieth the other ... so that a man hath no pre-eminence above a beast." There are other comparable passages in the Bible on the conservation of wildlife (Deuteronomy, chapter 2, verses 6 and 7, and Genesis, chapter 9), agricultural lands (Leviticus, chapter 25, verses 2 to 4) and the preservation of fruit trees (Deuteronomy, chapter 20, verse 19, and Genesis, chapter 19, verses 23 to 25). Christmas itself was originally a time of pagan celebration of the winter solstice, and Christmas trees came from sacred groves dedicated to a pagan goddess.

148. Islam teaches that the role of people on earth is that of khalifa, or trustee of God, whereby humans are entrusted with the safe keeping of Earth and its variety of life. The Koran states: "There is not an animal (that lives) on the Earth, nor a being that flies on its wings, but (forms part of) communities like you" (Sura 13 Aya 15). The prophet Mohammed is quoted as saying: "There is a reward in doing good to every living thing". The first Global Environmental Forum from an Islamic Perspective, held from 23 to 25 October 2000 in Jeddah, Saudi Arabia, with UNEP as a partner, adopted the Jeddah Declaration on the Environment from an Islamic Perspective. That Declaration notes that sustainable development from an Islamic perspective is the development and rehabilitation of the Earth in a manner that does not disrupt the equilibrium established by God for everything in this universe. It further notes that environmental protection is an integral part of sustainable development and cannot be considered separately. States should

increasingly endeavour to achieve economic development, while conserving the environment in a way that does not prejudice the safe and dignified life of future generations. The promotion of consumption patterns characterized by over-exploitation and wastage of resources is noted as costly and harmful to health and to the environment; similarly, Islam strongly encourages the careful conservation of water. Furthermore, the concept of protected areas, haram, is intrinsic to Islam.

149. Jainism, one of the oldest living religions, teaches ahimsa (non-violence) towards human beings and all of nature. It believes in the mutual dependence of all aspects of nature belonging together and bound in an intricate relationship.

150. In Judaism, the Torah outlines a series of ethical obligations including several relevant to the conservation of nature. The Torah says: "When God created Adam, he showed him all the trees of the Garden of Eden and said to him: 'See my works, how lovely they are, how fine they are. All I have created, I created for you. Take care not to corrupt and destroy my universe, for if you destroy it, no one will come after you to put it right'" (Ecclesiastes, Rabbah 7).

151. All Buddhist teaching revolves around the notion of dharma, which means truth and the path of truth. It teaches that people are responsible for their actions and go through a cycle of rebirths before finally reaching Nirvana. Right actions lead to progress towards Nirvana, and bad actions, such as killing animals, cause regression from that goal. Buddhism cares for wildlife and teaches that the protection of biological diversity is respect for nature and that living in harmony with it is essential.

152. Followers of Hinduism believe in the forces of nature and its interconnectedness with life itself. Certain rivers and mountains are sacred, as they give and sustain life. All plants and animals have souls, and people must serve penance for killing plants and animals for food. The teachings of Hinduism, as expressed in the Bhagavad Gita, present a clear description of ecology and the interdependence of all life forms, from bacteria to birds.

153. Sikhism teaches that all forms in the universe exist under God's command and that, having brought a life form into being, God will protect it. The teachings of Sikhism are based on a premise of life liberated from conspicuous consumption.

154. Shinto, the system of indigenous religious beliefs and practices of Japan, is strongly rooted in rural agricultural practices with ceremonies and practices that guide the relationship between people and nature. Thus, societies with declining biodiversity are seen as being in decline themselves.

155. From the above brief account, it is evident that all faiths around the world share a common ethic based on harmony with nature. It is within this context that in Pakistan, for example, specimens of original tree species can still be found in old Muslim graveyards because of a taboo against cutting such trees. The Maronite Church of Lebanon has protected the forest of Harisa, a WWF Mediterranean Programme "forest hot spot", for over 1,000 years. Buddhist monks in Thailand have built small monasteries in endangered forests and thus made them sacred, helping to prevent logging. Examples of similar initiatives include the launch by the Sikh community in India of an initiative to reduce the amount of fossil fuels used in the kitchens of their temples in Delhi. The Church of Germany has installed solar power in 300 churches and is actively promoting this initiative within each local community, with the result that as many as 30 institutions have switched to solar power, under the inspiration of the local church. The feast of Kwanzaa, which has its origin in African harvest festivals, is not only an important element of the cultural identity of the African American community but is a reminder of the need to preserve the ecological heritage of our planet.

156. In September 1986, WWF brought together representatives of five major world religions (Buddhism, Christianity, Hinduism, Islam and Judaism) to declare how their faiths led each of them to care for nature. The outcome of this gathering was the Assisi Declarations. After the meeting, three more faiths, Baha'i, Jainism and Sikhism, promulgated declarations to accompany those of the other religions. The Living Planet Campaign, launched by WWF and the Alliance of Religions and Conservation (ARC), aims to secure commitments from the world's religions to undertake specific actions to be known as "sacred gifts for a

living planet". These "sacred gifts" must focus on environmental conservation in the areas of advocacy, education, health, land and assets, lifestyle and media. Examples of "sacred gifts" made by the world's major religions to date include: the annual international Jain Business Award, which recognizes companies that make significant improvements to reduce impacts on the environment; the Lutheran Church's supportive role in developing the national Forest Stewardship Council process in Sweden; the introduction by the Kenyan Council of Churches of environmental education at all levels of its Christian education classes; in China, the Taoist examination of principles needed to introduce sustainable resource use into traditional Chinese medicine, which uses a wide variety of plants and animals; and the introduction of environmental programmes broadcast in local languages by six Baha'i radio stations in Latin America.

157. Held on the occasion of the WWF annual conference in Kathmandu, Nepal, from 14 to 17 November 2000, the conservation conference on "Sacred Gifts for a Living Planet" gathered representatives of the world's 12 major faiths, and additional gifts were announced on issues related to climate change, dioxins, rivers, forest conservation, protected areas, environmental awareness and the protection of endangered species. During the sixth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, on 22 November 2000, the Minister of the Environment of Mongolia announced a major initiative by his country's religious community aimed at raising public awareness on climate change. At the same meeting, a representative of the World Council of Churches stated that the destruction of the global atmosphere was a sin against God. In a similar vein, the National Religious Partnership for the Environment has promoted dialogue among religions and created an alliance of several Christian and Jewish denominations in the United States around the issue of the environment.

158. Within the framework of the UNESCO project on spiritual convergence and intercultural dialogue, the UNESCO Chairs on Reciprocal Knowledge of Religions and Spiritual Traditions aim to produce a brochure identifying best practices to provide guidelines for future pedagogical tools. Against such a background, the "Routes of Al-Andalus" project endorsed by UNESCO seeks to highlight the processes, mechanisms and heritage of the dialogue that developed in medieval Spain and to study the consequences of the interactions that took place in that context. Christian, Islamic and Jewish cultures and religions coexisted for nearly eight centuries in Al-Andalus, present-day Andalusia, providing an outstanding environment for dialogue and contact. This is illustrated by the "Patio de los Leones", situated in the famous palace of the Alhambra in Granada, once the political and cultural heart of Al-Andalus. In this patio, influences of the three religions met to produce what is considered to be an unequalled masterpiece.

159. The potential offered by the United Nations Year of Dialogue among Civilizations can be harnessed to bring together this common element among the faiths and, in that way, promote harmony and synergies among religions. The promotion of dialogue among religions is at the centre of this effort. In that context, the recent UNEP publication Earth and Faith: A Book of Reflection for Action is a result of its collaboration with the Interfaith Partnership for the Environment. The international seminar on the environment, religion and culture to be held in Tehran in April 2001, in collaboration with UNEP, could provide a unique opportunity for enhancing such interfaith dialogue from an environment perspective in the future.

G. Environment and ethics

160. Environmental ethics may be defined as a set of norms describing how humans should behave toward nature and its resources. Such norms are often based on a moral attitude revolving around what is perceived as good or bad. The environmental crisis facing humanity is deeply rooted in a complex web of economic, social and cultural factors, as well as belief systems, social attitudes and perceptions. The prevailing unsustainable patterns of economic growth promoted by modern society are closely linked to belief systems and social attitudes. The root causes of widespread poverty and environmental degradation, such as unsustainable lifestyles, food patterns and the depletion of natural resources, including marine and terrestrial biological diversity, are related to manifestations of conventional beliefs and unsustainable patterns of production and consumption. The UNEP report Global Environment Outlook 2000 clearly demonstrates that if present trends in population growth, economic growth and consumption patterns continue, the natural environment will be placed under increasing stress. The report identifies unsustainable patterns of production and consumption as a major cause of environmental degradation.

161. The Seoul Declaration on Environmental Ethics was adopted on 5 June 1997 by an international seminar on environmental ethics for the twenty-first century convened in collaboration with UNEP on the occasion of the twenty-fifth anniversary of the Stockholm Declaration on the Human Environment. It states: "We must come to an understanding that the current global environmental crisis is a result of value systems, driven by human greed and excessive materialism, and the mistaken complacency that science and technology would solve all our problems. Unless we re-examine our values and beliefs, such conditions will further environmental degradation, and ultimately lead to the collapse of natural systems that support life."

162. The Earth Charter launched on 29 June 2000 includes respect for the Earth and life in all its diversity as one of its basic principles.

163. As evidenced by the UNEP publication Ethics and Agenda 21: A Moral Implication of a Global Consensus, social value systems drive human action and are fundamental to everything we do. The values we hold govern the way we behave and what we expect from our society. The unprecedented economic progress achieved by humankind in recent history has been accompanied by the emergence of a global industrial human culture revolving around the belief that economic growth and the associated gross domestic product are limitless. It believes that natural resources are infinite and that science and technology can offer a response to all human problems, including those related to environment. This belief has been consolidated by the weakening of the ancestral relations between man and nature brought about by rampant urbanization and by the negative impacts of globalization and the shrinking of geographical distances.

164. World Resources 2000-2001 states: "It is easy to lose touch with our link to ecosystems. For millions of us who live in cities or suburbs and have transitioned from working the soil to working at computer keyboards, our link to ecosystems is less direct. We buy our food and clothing in stores and depend on technology to deliver water and energy. We take for granted that there will be food in the market, that transportation and housing will be available, and at reasonable cost." The report continues: "It takes roughly five hectares of productive ecosystem to support the average United States citizen's consumption of goods and services versus less than 0.5 hectares to support consumption levels of the average citizen in developing countries. Annual per capita CO_2 emissions are more than 11,000 kilos in industrial countries compared to less than 3,000 kilos in Asia." As Samuel Huntington states in his well-known book Clash of Civilizations: "The West won the war not by the superiority of its values or religion but rather by its superiority in applying organized violence." It may be argued that degradation of the environment and the depletion of natural resources can be considered as a form of violence against nature.

165. Prompted by the situation outlined above, Global Environment Outlook 2000 calls for "a shift of value away from material consumption." It also stresses: "The processes of globalization that are… strongly influencing social evolution need to be directed towards resolving rather than aggravating the serious imbalances that divide the world today". In response to this call, the Malmö Declaration, which was transmitted to the Millennium Summit of the General Assembly, states: "The root causes of global environmental degradation are embedded in social and economic problems such as pervasive poverty, unsustainable patterns of production and consumption, inequity in distribution of wealth, and the debt burden." It further emphasizes: "Success in combating environmental degradation is dependent on the full participation of all actors in society, an aware and educated population, respect for ethical and spiritual values and cultural diversity, and protection of indigenous knowledge."

166. In response to the Malmö Declaration, the Millennium Declaration adopted on 8 September 2000 by the Millennium Summit of the General Assembly included respect for nature among the six fundamental values essential to international relations in the twenty-first century. The Declaration urges: "Prudence must be shown in the management of all living species and natural resources, in accordance with the precepts of sustainable development. Only in this way can the immeasurable riches provided to us by nature be preserved and passed on to our descendants. The current unsustainable patterns of production and consumption must be changed in the interest of our future welfare and that of our descendants." The Declaration calls for a new ethic of conservation and environmental stewardship. This call for action by the world's heads of State lends new significance to the World Charter for Nature, which provides: "Every form

of life is unique, warranting respect regardless of its worth to man, and to accord other organisms such recognition, man must be guided by a moral code of action."

167. There is an urgent need for a new environmental ethic based on universally shared environmental values. Celebration of the United Nations Year of Dialogue among Civilizations provides an opportune context for such an undertaking. In accordance with its mandate, as further elaborated by the Nairobi and Malmö declarations, UNEP stands ready to take the lead in spearheading efforts of the international community to bring into existence a new environmental ethic for the twenty-first century.

H. Conclusion

168. As Mary Robinson, the United Nations High Commissioner for Human Rights, stated at the launch of the report of the World Commission on Dams, "greater efforts can and must be made to reconcile the need for economic development with the need to protect the dignity of individuals, the cultural heritage of communities and the health of the environment we all share." The preservation of a healthy and green planet for the well-being of the human species should be one of the prime concerns of a modern culture and should frame how we think, live, behave and relate to nature and its resources.

169. The emergence of a new environmental ethic for the twenty-first century should be based on a code of conduct and a code of moral duty for all human beings vis-à-vis their environment, codes which will help people rediscover and restore the ancient ties to nature still dormant in the collective human conscience. The ultimate aim of the human species living in harmony with all animal and plant species should be at the core of such an ethic. It should also include the right of each individual to a clean and healthy environment, as well as the duty to protect and preserve that environment. A clean environment is a basic human right without which all other basic human rights have no meaning. Based on sustainable traditional environmental practices, underpinned by a strong scientific and technological foundation, guided by human values and inspired by a sense of responsibility and accountability to future generations, this new environmental ethic will help catalyse the emergence of a global alliance of all actors of human society. A global alliance of this nature is a prerequisite for translating sustainable development into reality.

170. Since its establishment in 1972 and in pursuance of its mandate, UNEP has been promoting a dialogue among nations on environment-related issues through its regular activities. The contribution made by UNEP to this undertaking is demonstrated by activities that have contributed to the emergence of a set of norms, standards, regulations, conventions and legislation in place at the national, regional and international levels. The new UNEP of the new century will strive with still greater vigour for the emergence of a new universal culture for the sustainability of our global environment.

171. On 13 November 2000, the General Assembly decided to convene a high-level segment at its fifty-sixth session on the dialogue among civilizations. Environment is part of that dialogue. The Global Ministerial Environment Forum may wish to request the Executive Director of UNEP to transmit the present report and a summary of the discussion on this issue to the Assembly on that occasion as UNEP's contribution to the dialogue among civilizations.
