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International environmental governance

International environmental governance

Synthesis of responses on strengthening the scientific base of the United Nations Environment Programme

Report by the Executive Director

Summary

The present report contains a synthesis of responses from Governments, intergovernmental organizations, non-governmental organizations and scientific institutions to the questions and considerations posed by the Governing Council of the United Nations Environment Programme (UNEP) in its decision 22/1 I A of 7 February 2003 on strengthening the scientific base of UNEP. This report is an update to document UNEP/SI/GC/2, which was submitted to the intergovernmental consultation on strengthening the scientific base of the United Nations Environment Programme, held in Nairobi on 14 and 15 January 2004.

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Contents

Executive summary

1. At its twenty-second session, in February 2003, the UNEP Governing Council/Global Ministerial Environmental Forum initiated a consultative process on strengthening the scientific basis of UNEP. Decision 22/1 I A invited Governments, intergovernmental organizations, non-governmental organizations and scientific institutions to submit their views on three questions and eight considerations relating to the assessment of the environment and environmental change and the work of UNEP and other organizations in this area. In implementing this decision, the Executive Director of UNEP contacted 627 Governments and institutions asking them to provide their views on the Governing Council questions and considerations, as well as on optional supplementary questions added by the UNEP secretariat, by 15 September 2003. This synthesis report presents an analysis of the Governing Council questions and considerations only, and is based on 123 substantive responses from 59 Governments, 21 intergovernmental organizations, 17 non-governmental organizations and 26 scientific institutions received before 12 November 2003. By 8 January 2004, a total of 154 responses had been received, including 75 from Governments. Responses to the additional questions and all annexes and appendices are provided in a separate information document (UNEP/GCSS.VIII/INF/8). Financial support for the implementation of decision 22/1 I A has been provided by the Governments of Norway and the Netherlands.

2. The synthesis of responses to question 1 in decision 22/1 I A, paragraph 2 (a), identified the following gaps and types of assessment needs with respect to the environment and environmental change:

(a) Assessment of existing international environmental challenges;

(b) Assessment of inter-linkages;

(c) Scientific credibility, legitimacy and relevance in the assessment process;

(d) Cost-effectiveness, cooperation and strengthening of existing institutions;

(e) Developing country participation and capacity-building.

Thematic environmental assessment needs relate to existing environmental challenges, such as climate change, land degradation, ozone depletion and biodiversity loss, new and emerging challenges, inter-linkages between assessment processes, inter-linkages between environment and social and economic development and human-environment interactions. Respondents also stressed needs related to strengthening assessment processes (e.g., capacity-building, integrated monitoring strategies, and data quality and management).

3. Regarding question 2 in decision 22/1 I A, paragraph 2 (b), on how UNEP and other organizations are currently meeting these assessment needs, respondents emphasized that UNEP plays a leading role, in partnership with the scientific community, agencies and other stakeholders, in environmental assessments at the global and regional levels, and in catalyzing support for regional, subregional and national level assessments. There were few responses on what other institutions are doing – those mentioned included the World Bank, the European Environment Agency (EEA), the European Union and a few national assessment activities.

4. In response to question 3 in decision 22/1 I A, paragraph 2 (c), on what options exist with respect to meeting any unfulfilled needs that fall within the role and mandate of UNEP, a number of options were identified with respect to addressing the five types of needs and gaps. It was reiterated that the increasing complexity of environmental degradation requires an enhanced capacity in UNEP for scientific assessment, monitoring and early warning. The UNEP Governing Council/Global Ministerial Environment Forum was seen as the principal body for setting the overall priorities for assessment and monitoring of environment and environmental change in the development context.

5. The majority of responses emphasized the importance of strengthening existing institutions, including the operations of the Governing Council/Global Ministerial Environment Forum, sub-programme 1, Environmental Assessment and Early Warning, specifically the Global Environment Outlook process, and joint initiatives such as the Intergovernmental Panel on Climate Change (IPCC). Views on the establishment of an intergovernmental panel on global environmental change were mixed. Those in favor viewed the panel as a potential mechanism for cross-cutting analyses of global environmental change, coordination of assessments, cooperation between institutions, environmental sectors and multilateral agreements and effective communication of assessments into political processes. Arguments against referred to the financial implications, the difficulty of covering the myriad of disciplines implicated by global change, the possible duplication of work of the Governing Council/Global Ministerial Environment Forum and the risk of politicizing science.

6. Options for meeting unfulfilled needs that fall within the role and mandate of UNEP included:

(a) Strengthening UNEP cooperation with scientific institutions and academia, ensuring scientific independence in the assessment through extensive, in-depth critical expert peer review and improving monitoring, data quality and access;

(b) Strengthening the operations of existing inter-agency cooperation mechanisms such as the United Nations system-wide Earthwatch;

(c) Strengthening local and regional capacities for integrated environmental assessment, and enhanced capacity-building, technology transfer and increased financial support.

I. Introduction

7. Governing Council decision SS.VII/1 of 15 February 2002, on international environmental governance, adopted the report of the Open-ended Intergovernmental Group of Ministers or Their Representatives on International Environmental Governance, which concluded that the increasing complexity of environmental degradation requires an enhanced capacity for scientific assessment, monitoring and early warning. Furthermore, the Group recommended that: *"*Further consideration should be given to strengthening UNEP's scientific base by improving its ability to monitor and assess global environmental change including, inter alia, through the establishment of an intergovernmental panel on global environmental change. The effective participation of developing countries in the work of the panel should be ensured, and the mandate, modalities and composition of any mechanism are to be decided by the Governing Council/Global Ministerial Environment Forum." (UNEP/GCSSVII/6, annex I, appendix 1, para. 11(h)(i).)

8. At its twenty-second session, held in Nairobi in February 2003, the Governing Council/Global Ministerial Environment Forum decided that further consideration of this issue was needed and initiated a consultative process on strengthening the scientific base of UNEP. Decision 22/1 I A invites Governments, intergovernmental organizations, non-governmental organizations and scientific institutions to submit their views on three questions and eight considerations relating to the assessment of the environment and environmental change and the work of UNEP and other organizations in this area. Paragraph 4 of decision 22/1 I A requests the Executive Director of UNEP to prepare a synthesis report on these views for the Governing Council/Global Ministerial Environment Forum at its eighth special session, which will be held in Korea from 29 to 31 March 2004. Following the issuance of the synthesis report, the Executive Director of UNEP was also requested to facilitate an intergovernmental consultation in preparation for the eighth special session of the Governing Council/Global Ministerial Environment Forum. The intergovernmental

consultation took place in Nairobi from 14 to 15 January 2004. The synthesis report and outcomes of the intergovernmental consultation (UNEP/GCSS.VIII/5/Add.4) are an important foundation for further consideration of this issue by the Governing Council/Global Ministerial Environment Forum. Financial support for the implementation of decision 22/1 I A has been received from the Governments of Norway and the Netherlands.

9. In implementing decision 22/1 I A (referred to as the Science Initiative), UNEP contacted 627 institutions, including Governments, intergovernmental organizations, non-governmental organizations and scientific institutions, inviting them to provide their views on the three questions and eight associated considerations in the Governing Council decision, and on a number of optional supplementary questions added by the UNEP secretariat. The initial deadline for submissions set by the Executive Director was 15 September 2003, but submissions received up to 12 November 2003 were included in the analysis. As requested in operative paragraph 4 of decision 22/1 I A, all responses are publicly available on the UNEP web site at http://science.unep.org, as are all relevant background documents and the optional questionnaire developed by the UNEP secretariat.

10. This synthesis report is based on an independent analysis of the responses carried out in October and November 2003 under the auspices of the Scientific Committee on Problems of the Environment (SCOPE) of the International Council for Science (ICSU). The analysis was based on 123 substantive responses received by UNEP by 12 November 2003.

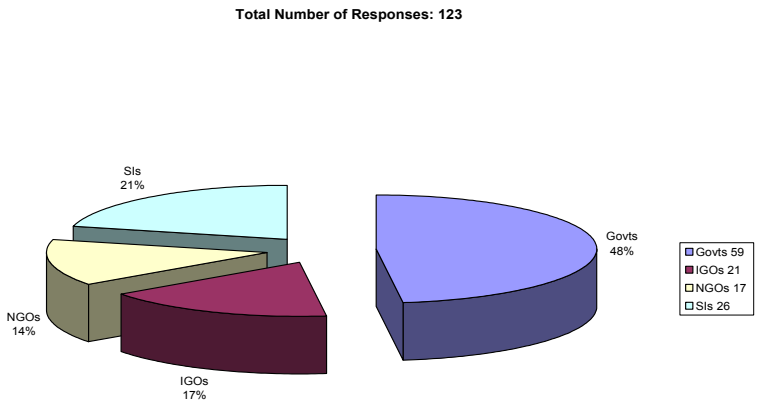

Fig. 1 Breakdown of responses (%).

11. This report synthesizes the responses to the three questions and eight considerations in decision 22/1 I A. The analysis of the responses to the questions added by the UNEP secretariat is included in a separate information document (UNEP/GCSS.VIII/INF/8), as are all annexes to this report. The report will later be published as a UNEP technical report, which will include the information document and the outcome of the intergovernmental consultations.

12. The Executive Director contacted 627 institutions, including 197 Governments, 186 intergovernmental organizations, 101 intergovernmental organizations and 143 scientific institutions. By 12 November 2003, 134 institutions had responded, including 11 institutions (5 intergovernmental organizations and 6 non-governmental organizations), that indicated that they had no substantive contribution to make and were thus excluded from the analysis. Hence a total of 123 substantive responses (100 per cent) were used in the present analysis, composed of 59 Governments (48 per cent of all responses), 21 intergovernmental organizations (17 per cent), 17 non-governmental organizations (14 per cent) and 26 scientific institutions (21 per cent) (see fig. 1 above).[1] Based on the total numbers of

[1] List of participating intergovernmental organizations

Asian Development Bank, Baltic Marine Environment Protection Commission – HELCOM, Basel Convention for the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Consultative Group on International Agricultural Research, Council for Scientific and Industrial Research, Economic and Social Commission for Western Asia, Economic Commission for Latin America and the Caribbean, European Environment Agency (EEA) , Food and Agriculture Organization of the United Nations, International Atomic Energy Agency (IAEA), International Fund for Agricultural Development (IFAD), Islamic Educational Scientific and Cultural Organization, Mediterranean Action Plan, Millennium Ecosystem Assessment, Organisation for Economic Cooperation and Development (OECD), Regional Environmental Center for Central and Eastern Europe, Scientific Information Center of Interstate

institutions contacted in each category, the overall response rate was about 20 per cent, with the highest response rate from Governments (30 per cent), and the lowest from intergovernmental organizations (11 per cent); the response rates of non-governmental organizations and scientific institutions were about 17 and 18 per cent respectively.

Sustainable Development Commission of the International Fund for Saving the Aral Sea, South Asia Cooperative Environment Programme, United Nations Children's Fund, United Nations Department of Economic and Social Affairs, Division for Sustainable Development.

List of participating scientific institutions

List of participating scientific institutions

Arab Center for the Studies of Arid Zones and Dry Lands, Asian Institute of Technology, Australian Antarctic Data Centre, Development Observatory at University of Costa Rica, DIVERSITAS, German Advisory Council on Global Change, Global Environment Monitoring System Water Programme, Global International Waters Assessment, Global Terrestrial Observing System, International Council for Science, International Geosphere Biosphere Programme, International Institute for Applied Systems Analysis, International Livestock Research Institute, Macaulay Institute, Moscow State University, National Academy of Science of Ukraine, National Institute for Environmental Studies, Japan, National Academy of Sciences, United States of America, National Institute for Public Health and the Environment (RIVM), Netherlands, Royal Swedish Academy of Sciences, Scientific and Technical Advisory Panel (STAP) of the Global Environment Facility (GEF), Third World Academy of Sciences, University of the West Indies, UNEP/GRID-Christchurch Gateway Antarctica, Vrije Universiteit Brussel, Warsaw University.

List of participating non-governmental organizations

Arab Network for Environment and Development (RAED), Association for Protection of Environment and Culture (APEC-Nepal), Association for Research on Climate and Environment, Central European University, Centre for International Projects, Desert Research Foundation of Namibia, Empowerment for African Sustainable Development, Emirates Diving Association, Emirates Environmental Group, EnerWise International, Foundation for Environmental Development and Education in Nigeria (FEDEN), General Union Of Non-Governmental Environmental Organizations GUN-GEO in Palestine, International Institute for Sustainable Development (IISD), Pajero Jai Foundation, World Resources Institute, World Conservation Union (IUCN).

13. Responses came from institutions[2] in all six UNEP geographical regions (Africa, Asia and the Pacific, Europe, Latin America and the Caribbean, North America, and West Asia). Any differences in views between industrialized countries, developing countries and countries with economies in transition are pointed out in the analysis. Fifty-nine Governments[3] had provided their views by 12 November 2003 (see fig. 2). By 8 January 2004, a total number of 154 responses had been received from 75 Governments, 28 intergovernmental organizations, 23 non-governmental organizations and 28 scientific institutions. The additional responses arrived too late to be included in the synthesis, but are publicly available on the UNEP web site at http://science.unep.org.

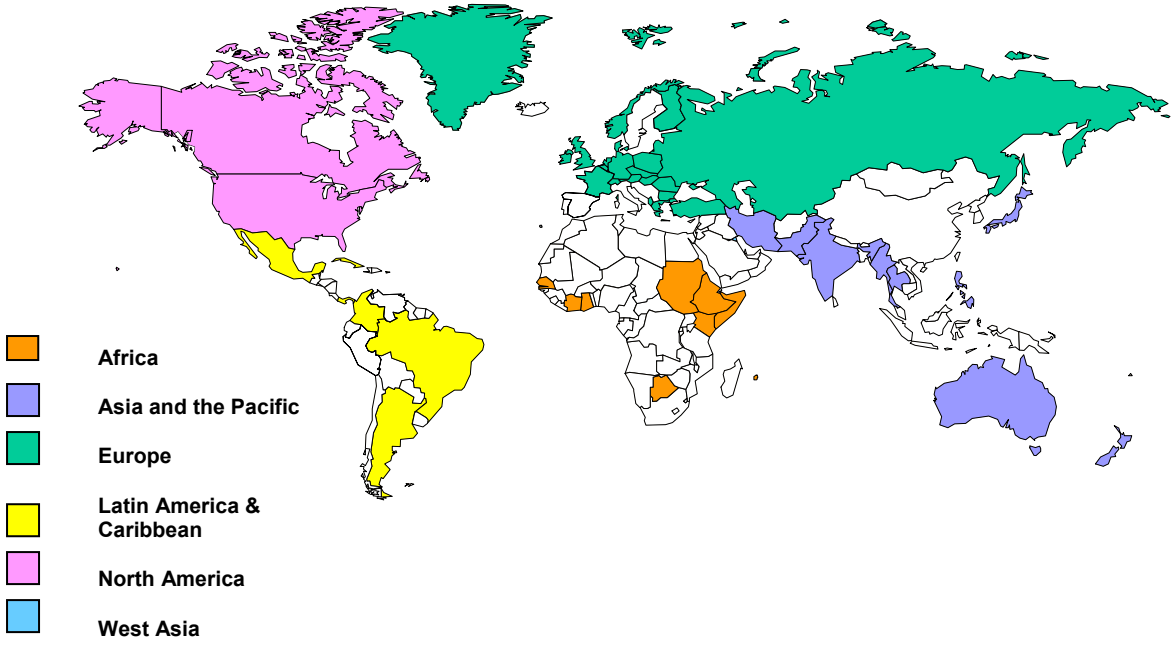

Fig. 2. Governments providing responses by 12 November 2003.

14. The optional UNEP questionnaire invited respondents to self-evaluate their relevant experience and knowledge. The self-evaluations of respondents' participation in environmental assessments at different geographical scales (global to sub-national) indicated that for all groups combined, participation at the global and regional levels was mainly considered moderate (about 40 per cent), while participation on a national level was considered to be more extensive (50 per cent). The self-evaluation of respondents' knowledge about UNEP work in environmental assessment on a global, regional, national or sub-national level suggested that respondents were more familiar with UNEP assessment work at a global and regional level (about 36 per cent) and less familiar with its work at the national and sub-national

[2] Responses from a number of institutions, affiliated to but nevertheless independent of UNEP, were included in the analysis: Basel Convention, Global Environment Monitoring System Water Programme, Global International Waters Assessment (GIWA), Millennium Ecosystem Assessment, UNEP/GRID-Christchurch Gateway Antarctica.

[3] Albania, Antigua and Barbuda, Argentina, Australia, Austria, Bahamas, Belgium, Botswana, Brazil, Bulgaria, Canada, Colombia, Cote D'Ivoire, Croatia, Cuba, Czech Republic, Denmark, Ethiopia, Finland, France, Gambia, Germany, Ghana, Greece, Hungary, India, Iran (Islamic Republic of), Ireland, Japan, Kenya, Kuwait, Kyrgyzstan, Latvia, Lithuania, Macedonia, Mauritius, Mexico, Monaco, Myanmar, Netherlands, New Zealand, Norway, Pakistan, Panama, Philippines, Poland, Romania, Russian Federation, Samoa, Senegal, Seychelles, Slovak Republic, Somalia, Sudan, Switzerland, Thailand, Turkey, United Kingdom of Great Britain and Northern Ireland, United States of America.

levels (about 20 per cent). A more detailed analysis of respondents' participation in environmental assessments and knowledge of UNEP work in this area are included in information document UNEP/GCSS.VIII//INF/8.

15. This report analyzes and synthesizes responses to the three questions (a), (b) and (c) in paragraph 2 of decision 22/1 I A and considerations (a) to (h) in paragraph 3. Statistical analyses with detailed numbers and percentages of responses to all three questions and the related considerations, as well as questions included by the UNEP secretariat, are given in the information document UNEP/GCSS.VIII/INF/8.

II. Question 1: What are the likely gaps and types of assessment needs with respect to the environment and environmental change?

16. From a total of 123 responses, 109 institutions (89 per cent) provided their views on this question, including 53 Governments (90 per cent of all Government responses), 19 intergovernmental organizations (90 per cent), 12 non-governmental organizations (71 per cent) and 25 scientific institutions (96 per cent).

17. Types of assessment needs and gaps identified in the responses related to thematic coverage or scope of environment assessments and the institutional and technical aspects of assessment processes. Under these two categories, the assessment needs identified by Governments, intergovernmental organizations, non-governmental organizations and scientific institutions are summarized in five clusters of issues as outlined in box 1 below. Most responses did not distinguish between assessment needs and gaps, but considered them interlinked and viewed gaps as partly or entirely unfulfilled needs. The thematic needs identified in question 1 coincide with the additional question 2 of the UNEP questionnaire, in which respondents were asked how well different thematic areas are being covered by existing assessments. An analysis of the responses to this additional question is contained in information document UNEP/GCSS.VIII/INF/8. The clusters of institutional and technical needs and gaps identified in box 1 are a function of the responses received and the considerations outlined in decision 22/1 I A, paragraph 3. A further synthesis of the responses to these considerations is presented in part III below.

18. Many respondents pointed to the fact that assessments have to be carried out at a range of spatial levels, from global to local, and that inter-level interactions must also be considered. In this regard, there was a strong demand for more integrated assessments. The assessment needs include assessments of particular thematic environmental issues and particular sectors, and much stronger inclusion of assessments of the socio-economic impacts of environmental change. There were also strong calls for an assessment of needs for capacity-building, technology transfer, monitoring and data strategies and the links between multi-lateral environmental agreements. Several respondents pointed to the need to link assessment processes to the Millennium Development Goals and the targets set out in the Plan of Implementation of the World Summit on Sustainable Development (Johannesburg Summit). Lack of coordination and integration were main gaps identified by many respondents. The need for better outreach, including translation of assessment results, was also raised. Some respondents, however, felt that experience shows that the current system is already robust enough to respond to specific policy-related assessment and monitoring needs as and when they arise.

19. Regarding the gaps, box 1 below shows that the needs related to thematic coverage and scope of environment assessments must be supported by strategic plans for integrated assessments and local/national/global coordination, financial support and strengthened national research capacity. A strong call was also made for the improvement of the quality of and access to data through, *inter alia,* integrated monitoring strategies. Institutional and technical aspects of the assessment process require interaction between science and policy, and institutional cooperation and support, but above all there was a call for strengthened capacity-building. Finally, a gap frequently identified was the failure to link environment and development processes, in particular with reference to the Millennium Development Goals, which would more clearly address the need to consider inter-inkages between assessment processes and the human-environment system as a whole.

Box 1. Types of assessment needs and gaps with respect to the environment and environmental change

A. Assessment of existing environmental challenges

Environmental challenges that need to be assessed on a regular basis include: depletion of stratospheric ozone layer; climate change; land degradation; land use and land cover change; desertification; land/ water/air pollution; biodiversity and natural resource conservation; ecosystem protection; ecosystem services; comparative analysis of water status; hazardous chemicals; waste management; oceans, marine biodiversity, marine habitats; persistent organic pollutants (POPs); natural hazards; the urban environment; international waters; and new and emerging environmental challenges such as invasive species and disturbance of the nitrogen cycle. **Gaps related to the need for regular assessments include** a number of needs listed above but in varying degrees, depending on the extent to which they are covered in time and space by current assessments. Exceptions were made for ozone and climate change, where regular assessment processes are in place, and the global marine environment, where a regular assessment process will be established by 2004. Frequently mentioned gaps include: biodiversity, especially in marine and freshwater ecosystems; societal implications of ecosystem degradation; chemical hazards, arsenic pollution and cumulative impacts of persistent pollutants; the urban environment; disturbance of the nitrogen cycle; land cover change and soils; and assessments of extreme events (e.g., floods).

B. Assessment of Inter-linkages

Aspects of the need for a regular assessment of inter-linkages include: scientific inter-linkages and policy and technology trade-offs between global environmental challenges addressed by individual multi-lateral environmental conventions; human-environment interactions such as environmental goods and services; environment and conflict; human psychology and environmental impacts; assessments of the socio-economic impacts of environmental change; raising environmental awareness; and the role of human values in causing and responding to environmental change; new/emerging cross-cutting issues such as system-wide interactions of environmental changes and biophysical thresholds; inter-linkages between environment and social and economic development and economic sectors such as: poverty; human health; transport; trade; tourism; agriculture; fishery depletion; industry and business; technology transfer; sustainable production and consumption systems; the role of institutions and governance**.** Gaps related to the need for regular assessments include aspects of the challenges listed above but in varying degree depending on the extent to which they are covered by current assessments. Emphasis was placed on the need to strengthen the links between environment and development, with special reference to the Millennium Development Goals

C. Scientific credibility, legitimacy and relevance in the assessment processes

Needs include: Balancing scientific credibility, saliency and legitimacy of assessment processes and ensuring interaction between the science and policy communities; ensuring scientific credibility through independence in the scientific process of the assessment and extensive, in-depth critical expert peer review; ensuring policy legitimacy and relevance through intergovernmental and multi-stakeholder involvement in identifying assessment needs, adopting findings and taking part in peer review; avoiding overburdening the scientific community with uncoordinated and narrowly focused assessments; ensuring access to and credibility of data. **Gaps include** aspects related to the identified thematic gaps above. It was felt that ozone and climate change assessments have regular elaborated processes in place to meet the needs identified. The Millennium Ecosystem Assessment was seen as an example of an assessment meeting multiple user needs. More specific gaps include: the lack of plans, programs and frameworks (including strategic action plans) for integrated assessment processes that link science and policy; strengthening national research capacity and the scientific basis for assessments; and data and monitoring support to assessments and indicators to ensure availability, accessibility, quality, credibility, management and communication of data from monitoring and remote sensing.

D. Cost-effectiveness, cooperation and strengthening of existing institutions

Needs include: Ensuring cost-efficiency and cost-effectiveness of assessment processes; and ensuring international cooperation between intergovernmental bodies and multilateral agreements, their programmes and secretariats to avoid overlap and promote synergy. **Gaps include** a lack of a fully coordinated and systematic approach to meeting the identified thematic gaps above in order to ensure cost efficiency and synergy. More specific gaps include the need to strengthen existing institutions involved in assessment and monitoring in support of policy development, compliance mechanisms and implementation.

E. Developing country participation and capacity-building

Needs include: Capacity-building and institution building and strengthening in developing countries and countries with economies in transition; Developing country participation to ensure credibility, ownership and authority; and the need to link assessments at different scales; Ensuring long term south-south and south-north collaboration; and ensuring the links between the environment and development agendas. **Gaps include:** A lack of coordinated efforts to meet the identified institutional needs in relation to the thematic assessment gaps identified above. Reference was made to the Global Environmental Outlook as a regular process with a strong regional and sub-global basis and related assessments as well as a strong focus on capacity-building. Time-limited assessments such as the Millennium Ecosystem Assessment and the Global International Waters Assessment (GIWA) also have some of these characteristics. Coordination of local, regional and global results, and regional integration, financial support (especially for developing countries and countries with economies in transition), support of centers of excellence, and sharing of information and assessment tools were seen as important partial gaps.

III. Considerations related to question 1

20. This section relates to paragraphs 3(a) to (h) of decision 22/1 I A. On average, 62 per cent of all participating Governments responded with views on one or more of the eight considerations raised in the Governing Council decision, while 63 per cent of the intergovernmental organizations, 56 per cent of the non-governmental organizations and 70 per cent of the participating scientific institutions provided their views.

A. Scientific credibility, saliency, legitimacy and relevance in assessment processes

21. Government responses recognized the importance of these assessment characteristics and pointed to existing examples (e.g., IPCC). Responses from Governments and intergovernmental organizations pointed to the fact that credibility, saliency and legitimacy are interlinked and need to be balanced in assessment processes. Scientific credibility would be achieved through independence in the scientific process of the assessment and extensive, in-depth critical expert peer review. Policy legitimacy and relevance could on the other hand be ensured through intergovernmental and multi-stakeholder involvement in identifying assessment needs, adopting findings and taking part in peer review. The need to avoid overburdening the scientific community with too many uncoordinated and narrowly focused assessments was also a concern. Many responses pointed to the need to increase data quality and access and the reliability of information. These characteristics could be enhanced through regional collaboration and better linkages between national and international activities.

22. The need to involve developing countries as well as non-governmental organizations and the private sector was overwhelmingly recognized. Assessment processes should also include local and traditional knowledge, to increase saliency and legitimacy. Dealing clearly with uncertainty was also mentioned. A methodological framework for, and transparency in assessment processes were also felt to be important.

23. Scientific institutions pointed to the importance of participatory processes, increased credibility of data and the needs to enhance the capacity to participate in assessment processes. Credibility can be assured through independent peer review processes, but this will require scientific input from scientists who are already overburdened, which points to the need for more capacity-building and resources. non-governmental organization responses emphasized the importance of data credibility. Evaluation of the results of assessment processes would also be important. Some further consideration of characteristics of the assessment process is given in information document UNEP/GCSS.VIII/INF/8.

B. Interaction between science and policy development

24. Government and intergovernmental organization responses agreed on the need for improvement in this area, while noting that interactions are two-way. Improved communication on the state of scientific knowledge but also the uncertainties about complex socio-ecological systems were important needs pointed out in several responses. Such communication also has to exist between Governments, business, industry, intergovernmental organizations, non-governmental organizations and the general public; this will also require communication of assessment results in languages other than English. Communication will require all groups to use terminology that all participants understand and will also need “bridging mechanisms or processes” within a framework that supports communication in both directions and reflects the need for both scientific credibility and political legitimacy as analyzed under point A above on scientific credibility.

25. Scientific institutions emphasized the need for assessments at disaggregated levels (including the linkages between international, regional, subregional, national and local levels) and the assessments of socio-economic impacts and policy options. They pointed to the inherent dichotomy between the short-term interests of policy makers and the longer-term interests of the scientific community. Scientific institutions also raised the issue of communication, in particular with regard to the outreach activities of assessment activities and again with respect to the need for "boundary organizations". While the examples of IPCC and Millennium Ecosystem Assessment were given as useful approaches for linking science and policy, questions were raised about their ultimate impact at the national level. The importance of also including funding agencies (e.g., multilateral banks) in the discussion of science-policy interactions was underlined. Non-governmental organizations emphasized the need for credible data and adopting a regional focus.

C. The role of existing institutions

26. Government, intergovernmental organization and scientific institution responses emphasized a resistance to creating new institutions and the importance of more, but flexible, coordination between United Nations organizations and development of horizontal and vertical networks of regional institutions, education providers and the global environmental change research programs (such as the International Geosphere-Biosphere Programme (IGBP), the International Human Dimensions Programme on Global Environmental Change (IHDP), the World Climate Research Programme (WCRP) and DIVERSITAS). The need to involve research institutions from engineering, medicine and psychology was also noted. Support for developing country institutions was felt to be important, with one response suggesting twinning of institutions in developed and developing countries. Gaps in data and information exchange were noted by intergovernmental organizations and non-governmental organizations.

D. Possible options, including strengthening existing institutions and mechanisms and the establishment of an intergovernmental panel on global environmental change

27. The majority of Government responses emphasized the importance of strengthening existing institutions, including the United Nations Environment Programme Division and programme on Early Warning and Assessment and the Global Environment Outlook process in particular, IPCC and regional centers on global environmental change. The need for enhanced communication and coordination between these institutions were frequently mentioned. Intergovernmental organizations similarly emphasized the need for strengthening, reorganizing and coordinating existing institutions. Scientific institutions noted the importance of a problem/thematic focus and also emphasized the importance of strengthening and using existing institutions in a targeted way. Networking of institutions was proposed as an important next step. The responses on the establishment of an intergovernmental panel on global environmental change are dealt with in Section V. E.

28. The scientific institutions noted the human, institutional and financial costs of participating in assessment activities and stressed the needs for including independent scientists nominated by international, non-governmental scientific organizations in assessment processes. Non-governmental organizations echoed other responses on not creating new institutions and improving the coordination between existing institutions. Capacity-building of existing institutions, including environmental non-governmental organizations, and improved monitoring and data exchange, were again cited as necessary.

E. Links and sectoral integration

29. Governments agreed that sectoral integration is necessary but not easy to achieve. It requires creative approaches, including involvement of stakeholders and users of assessments at the regional, subregional and local levels. A framework is needed for coordination and integration, building on existing methodologies, increased exchange of information and linking of ongoing activities. The importance of embedding sectoral integration and other linkages within the context of sustainable development was emphasized by intergovernmental organizations. This would also draw attention to the importance of socio-economic assessments, integrated monitoring and networking of institutions.

30. Scientific institutions agreed that integration is important, especially the integration of the private sector, local government and other organizations (e.g., unions). As in the case of intergovernmental organizations, they pointed to the need to embed the assessments within the context of sustainable development in order to look at the human-environment system and intersectoral linkages. A framework for integration would enhance this process and also help in the formation of institutional arrangements and science-policy dialogs. Institutional coordination was also mentioned by non-governmental organizations, as well as the need for wider participation of industry and government.

Integration could also be enhanced through consideration of themes, e.g., energy. Database harmonization at the international, regional and local levels would also enhance sectoral integration.

F. Duplication, cooperation, complementarity and added value to the work of other assessment processes, international agencies and multilateral agreements

31. Duplication within the United Nations system and outside was particularly acknowledged by Governments and intergovernmental organizations. For some issues, e.g., POPs and stratospheric ozone depletion, there is little duplication. The need to reduce duplication and increase cooperation (especially in data- and information-sharing as well as reporting requirements) was supported by the Government responses, including the need for closer collaboration between intergovernmental organizations such as UNEP, UNESCO, UNICEF, IOC, UNDP, WHO, WMO, FAO, IFAD, the Global Environment Facility (GEF), IAEA, UNDESA, CSD, WB, EEA, the Organisation for Economic Cooperation and Development (OECD), multilateral environmental agreements and their programmes and secretariats. Concern was expressed that too many environmental assessments now exist with a narrow focus on specific issues and that this may greatly overtax the capacity of the scientific community. It was pointed out that duplication also occurs with web sites. Harmonization of long-term research programs between scientific institutions was seen as important. A methodological framework would enhance such collaboration. Intergovernmental organizations, non-governmental organizations and scientific institutions also emphasized the needs for collaboration on data- and information-exchange. The Millennium Development Goals and the discussions at the Johannesburg Summit should provide a context for increased cooperation.

G. Cost-effectiveness and efficiency

32. All respondents agreed on the need for cost-effectiveness and efficiency but suggestions on the importance of this issue and ways to implement it were diverse. Removing duplication and improving communication, as well as reducing bureaucracy within the assessment landscape, would be cost-effective. Government responses pointed out, however, that the issue of cost-effectiveness has to be considered in terms of the costs of the impacts of global environmental change. Framework guidelines on dealing with cost-effectiveness and efficient processes might be useful as well, according to the Government responses.

33. Intergovernmental organizations emphasized that a lack and poor quality of data and assessment tools hamper the achievement of cost-effectiveness and efficiency. They also pointed to the need for balancing between the cost-effectiveness of research activities (long-term) and timeliness for policy decisions (shorter-term). The need to integrate national and sub-national assessment processes was raised with specific reference to increasing cost-effectiveness and efficiency. Scientific institutions emphasized the need for involvement of national and regional institutions of both a governmental and non-governmental nature in monitoring, data collection and implementation. The needs and challenges of dealing with assessments of environmental issues using innovative approaches within the context of sustainable development were also raised. Non-governmental organizations also emphasized that cost-effectiveness could be achieved through more networking and less duplication.

H. Developing country participation and capacity-building

34. All respondents recognized the need for more capacity-building in developing countries and countries with economies in transition, while pointing out that rigid quotas threaten scientific credibility of assessment processes, and capacity-building is a longer-term goal to address the balance between credibility and legitimacy of assessment processes. Governments pointed to the need for financial support, guidelines and incentives for environmental policy and the needs for south-south and south-north collaboration. An important concern was linking the environment and development agendas. Governments pointed to the need for technical and human resources, as well as the need to learn from previous experiences and the gaps in communication of data and information and in institutional capacity. Overcoming the latter gaps will require the identification and support of centers of excellence, and sharing of information and assessment tools.

35. Linking the environment and development agendas was also raised by intergovernmental organizations, which used the issue of environment and health as an example of the urgent need for integrated studies in developing countries. Scientific institutions agreed that capacity-building is necessary to support research at national and regional levels. They pointed to the importance of learning from successes in linking science and policy in the area of global environmental change and sustainable development. Along with other respondents they indicated the importance of links to the development agenda and need for funding. Non-governmental organizations pointed to the need for data and information access and dissemination as an important contribution to capacity-building.

IV. Question 2: How are UNEP and other organizations currently meeting these assessment needs?

36. From a total of 123 responses, 92 institutions (75 per cent) provided their views on this question, including 45 Governments (76 per cent of all Government responses), 17 intergovernmental organizations (81 per cent), 11 non-governmental organizations (65 per cent) and 19 scientific institutions (73 per cent). Over 50 per cent of all participating Governments responded to the considerations in paragraphs 3(a) to (h) of decision 22/1 I A in relation to meeting assessment needs, while on average 56 per cent of the intergovernmental organization respondents, 49 per cent of the non-governmental organization respondents and 54 per cent of the scientific institution respondents provided their views. It should be noted, however, that a large number of respondents simply referred back to their responses to the same considerations posed to question 2(a) in the Governing Council decision. This section primarily covers the additional responses.

37. Respondents from all categories pointed to the important role that UNEP plays in regional, subregional and national level assessments of environmental issues. There was a broad consensus that the increase in complexity of environmental problems requires a further strengthening of UNEP work in this area. While it was generally felt that there are a number of assessment needs that should be addressed, there was a difference of views as to how well UNEP and other organizations are meeting those needs. An overriding view however, seemed to be that UNEP and other organizations need to further strengthen their support to regional and subregional integrated assessments and better address linkages across all levels of assessment. A number of responses pointed to the need for financial resources for environmental assessment processes, as well as for support for science and technology for sustainable development in general, capacity-building, coordination and integration.

38. Many responses suggested that embedding assessment processes within the framework of sustainable development would enhance their utility. This would require more attention to socio-economic assessments and to policy relevance. Another important response, coming from Governments and in particular from intergovernmental organizations, is the need for more outreach (targeting reporting) of assessment processes. Outreach at all phases of assessment processes would increase ownership, spread awareness about environmental issues, and increase linkages to the policy making community.

39. There were few responses on what other organizations are doing – those mentioned included the World Bank, the Economic and Social Commissions for Western Asia and for Europe, EEA, the European Union and OECD. Several Governments mentioned their own national assessment activities, but did not elaborate in detail.

A. Assessment of existing environmental challenges

40. The assessment needs relating to existing environmental challenges identified under question 1 were seen as partially addressed through a broad range of assessment activities. Reference was made to information document UNEP/GC/22/INF/15 as an indication of the large number of existing intergovernmental efforts and partnerships to assess the environment and environmental change. Many pointed to the successes in the assessment of climate change, stratospheric ozone depletion, protection of coastal areas, biodiversity, agriculture and water and supported the continuation of these efforts. The Global Environment Outlook was seen by many as an important effort, although more as a mechanism for integrated and cross-cutting assessment rather then specific thematic assessment needs (see point B, below). Nevertheless, it was generally felt that there are a number of spatial (especially in developing country regions), temporal and institutional thematic assessment gaps. Some stressed however, that the UNEP "system" through the Governing Council and the programme of work is robust enough to identify and follow-up on priority assessment needs as they arise. The recently concluded assessments of persistent organic pollutant and mercury were seen as a case in point. Others were concerned that the initiation of an increasing number of thematic assessment by different policy forums would happen in an uncoordinated way leading to overlaps, inefficient use of resources, missed synergetic opportunities and/or an overburdening of the scientific community. It was felt that UNEP should strengthen its role in brokering multi-scaled, multi stakeholder and multipurpose assessment initiatives (see also point B and D, below).

41. In particular, in the area of biodiversity, there was a divergence of views on how UNEP and other organizations are meeting assessment needs. Reference was made to the UNEP-coordinated and largely GEF-financed Millennium Ecosystem Assessment, which addresses the needs of several biodiversity-related conventions and focuses on the condition of ecosystems and the role of their goods and services for human livelihood. Reference was also made to the role of the UNEP World Conservation Monitoring Centre in biodiversity-related assessments such as the Millennium Ecosystem Assessment. The Millennium Ecosystem Assessment project will, however, come to an end in 2005. One Government referred to the UNEP Global Biodiversity Assessment (1995) and suggested it should be continued.

Reference was also made to the view held by the multi-stakeholder Millennium Ecosystem Assessment Board that if the Millennium Ecosystem Assessment succeeds in meeting user needs, an assessment of this nature could be repeated at 5 to 10 years intervals. UNEP has a major contribution to make in assessment and monitoring related to the Johannesburg Summit 2010 target on the significant reduction of biodiversity loss.

42. The role of UNEP in water assessment and monitoring through GIWA and the Global Environmental Monitoring System was also highlighted. A gap may occur in this area when the largely GEF-funded GIWA comes to an end in 2004.

B. Assessment of inter-linkages

43. Existing institutions have moved towards a more integrated approach to assessment and the communication of assessment results. The Global Environment Outlook assessments were discussed in many responses. The Global Environment Outlook programme clearly provides a valuable, participatory approach to assessing the state of the global environment. However, there were differences of opinion on whether the results of Global Environment Outlook are policy relevant. Some felt that the Global Environment Outlook process had improved considerably over the years and with a nested set of global and sub-global products now had enhanced the clarity, quality and relevance of cross-cutting assessment. A number of developing countries specifically referred to the utility and capacity-building aspects of Global Environment Outlook activities, particularly at the regional and national levels. Others specifically referred to the Global Environment Outlook as an important option for further strengthening the scientific credibility and political relevance and legitimacy of UNEP assessment processes.

44. Through its focus on the role of ecosystem goods and services for human livelihoods, the Millennium Ecosystem Assessment addresses significant aspects of inter-linkages between environmental challenges and between environmental and development challenges. The GEF Scientific and Technical Assessment Panel is looking at inter-linkages between GEF focal areas. Other examples of integration included the work of IGBP through the Earth System Science Partnership, EEA, other agencies of the United Nations and OECD, and collaboration with such organizations is suggested. Embedding environmental assessments within the context of sustainable development would support the consideration of longer-term, broader perspectives as well as inter-sectoral linkages.

C. Scientific credibility, legitimacy and relevance in the assessment processes

45. Some Governments emphasized the importance of using a similar framework to that of IPCC. It was felt that on the one hand, the IPCC structure and procedures ensure scientific credibility through independence in the scientific process of assessment and extensive, in-depth, critical expert peer review; on the other hand, it ensures policy legitimacy and relevance through intergovernmental and multi-stakeholder involvement in identifying assessment needs, adopting findings and taking part in peer review. It was also pointed out that IPCC has served as a model for the Global Biodiversity Assessment, the Millennium Ecosystem Assessment and the newly proposed assessment of agricultural science and technology for development, although modifications have been made in terms of intergovernmental and stakeholder involvement. Extensive peer review and broad stakeholder and expert involvement are also characteristics of the Global Environment Outlook process and the GIWA project. The enhanced credibility of the UNEP Global Environment Outlook collaborating centres in developing countries through their institutional affiliation with UNEP was also emphasized.

46. Reference was also made to UNEP cooperation with the scientific community through networks of experts and institutions such as ICSU and SCOPE, IUCN, the World Resources Institute, the International Institute for Applied Systems Analysis in Austria and the international global environmental change research programmes. It was felt that this cooperation could be further strengthened and broadened.

47. A frequent response, particularly from Governments and non-governmental organizations, was that the credibility of assessment processes depends strongly on access to validated data and a comprehensive monitoring system**.** This depends on the technical, financial and human capacities of institutions to collect relevant and high quality data, which requires considerable capacity-building. Several responses pointed to the need for enhanced collaboration with global monitoring systems. Intergovernmental organizations in particular emphasized the need to overcome data problems -- both in terms of the amount of accessible data and the assurance of their reliability.

48. Governments, intergovernmental organizations and scientific institutions pointed out that assessments should include information on available policy options (including analyses of feasibility, relevance, the state of the relevant science and the prospects for implementation) without being policy prescriptive. The need for an assessment

framework and assessment tools based on solid scientific input was also emphasized. Participation of policy makers and other stakeholders (including economists, fiscal experts, political scientists and experts on public policy) in the entire assessment process would also enhance the linkages between science and policy development and contribute to ownership of the assessment process. In developing countries, enhancing science-policy linkages will require capacity-building.

D. Cost-effectiveness, cooperation and strengthening of existing institutions

49. The dominant response was the need for coordination of assessment processes, as well as improved international collaboration and cross-scale and cross-sectoral integration**,** with UNEP and the Governing Council/Global Ministerial Environment Forum providing an umbrella for coordination activities and the Johannesburg Summit Plan of Implementation providing motivation. Several Governments also pointed to the need for assessment of implementation of environmental agreements. Duplication among assessments and agencies was seen as a problem in some cases. One example given was in the area of health and the environment, in which various United Nations institutions and other organizations are all active and potentially duplicating efforts.

50. The Millennium Ecosystem Assessment was referred to as an assessment that serves multiple governing bodies and conventions, and it was felt that UNEP should continue to play a brokering role in this respect. Greater rationalization and cooperation with regard to reporting obligations under multilateral environmental agreements was recognized as an important area needing improvement. Several governments and intergovernmental organizations recognized the United Nations system-wide Earthwatch programme as a potential mechanism to improve cooperation.

E. Developing country participation and capacity-building

51. Responses (especially from developing countries) focused on the need for capacity-building in developing countries and countries with economies in transition. Non-governmental organizations emphasized the need for regional networks that include non-governmental organizations. As in the responses to the other questions, the urgent need for effective and consistent approaches to build capacity in developing countries for assessment processes was emphasized. Resources will have to be mobilized. The role of the UNEP regional offices and centres of excellence in developing countries and twinning of institutions were again emphasized, as was the possibility of more focus on the UNEP Environment and Natural Resources Information Networking project. The Global Environment Outlook strategy of participation in assessment activities, or learning by doing, was seen as one effective way to develop capacity and cited as an example of how involvement at the global and regional levels had strengthened national level assessment activities.

52. The need for an assessment framework as a prerequisite for capacity-building was also pointed out. Inclusion of indigenous populations must be considered. Enhancing scientific capacity in developing countries is expensive but effective. Examples include the Global Change System for Analysis, Research and Training, the Inter-American Institute for Global Change Research (IAI) and the Asia-Pacific Network (APN). Developing countries also need access to equipment, resources and information and a reduced burden of reporting activities.

V. Question 3: What options exist with respect to meeting any unfulfilled needs that fall within the role and mandate of UNEP?

53. This section relates to paragraph 3(a) to (h) of decision 22/1 I A. From a total of 123 responses, 88 institutions (72 per cent) responded to this question, including 44 Governments (75 per cent of all Government responses), 17 intergovernmental organizations (81 per cent), 10 non-governmental organizations (59 per cent) and 17 scientific institutions (65 per cent). About 44 per cent of all participating Governments responded to the considerations related to options for meeting any unfulfilled needs that fall within the role and mandate of UNEP, while on average 41 per cent of the intergovernmental organization respondents, 47 per cent of the non-governmental organization respondents and 35 per cent of the scientific institution respondents provided their views. It should be noted, however, that a large number of respondents simply referred back to their responses to the same considerations posed in question 3 of the Governing Council decision.

54. The need for an enhanced capacity in UNEP for scientific assessment, monitoring and early warning because of the increasing complexity of environmental degradation was reiterated. Many respondents (almost equally balanced between Governments, intergovernmental organizations and scientific institutions) saw a need for priority setting within the UNEP system. The UNEP Governing Council/Global Environmental Ministerial Forum was seen as the principal body for this with respect to assessment and monitoring of the environment and environmental change. Some

Government responses pointed to the priorities set in the Millennium Development Goals, the Johannesburg Summit Plan of Implementation targets, the WEHAB (water, energy, health, agriculture and biodiversity) initiative and the United Nations Commission on Sustainable Development. Some felt that the Council/Forum was well placed to undertake this work. Others felt that an important option was to expand its intergovernmental operations in the area, possibly through an intergovernmental assessment panel and or a scientific and technical subsidiary advisory body or one or more similar mechanisms (see point E below).

55. UNEP sub-programme 1, Environmental Assessment and Early Warning, was seen as a main vehicle for implementing the priorities set by the Governing Council/Global Ministerial Environment Forum. A further strengthened *Global Environment Outlook* process was seen as a key option by a number of respondents. Some felt that the sub-programme should be further supported through increasing the percentage of core budget resources allocated to it. Others stressed the option of rationalizing the resources in the sub-programme to focus on assessment products and use the resources of other UNEP centres. The important role of other sub-programmes and UNEP-administered conventions with respect to environmental assessments was acknowledged, as was the need for better coordination of UNEP activities.

A. Assessment of existing environmental challenges

56. A number of needs and gaps with respect to current assessment of existing international environmental challenges were identified. Some felt that there was a need to establish a mechanism to further identify these gaps in cooperation with the relevant policy instruments in order to determine how UNEP best can contribute through a systematic, cost-efficient system for responding to environmental assessment and monitoring needs at multiple scales. Others felt that the current system was robust enough to handle the assessment needs as they arise.

57. Options for meeting some priority gaps included:

(a) Biodiversity and ecosystem goods and services: close cooperation between UNEP and the UNEP World Conservation Monitoring Centre and the biodiversity related conventions; continuation of the Global Biodiversity Assessment; a repeat at 5 to 10 year intervals of an assessment in the nature of Millennium Ecosystem Assessment if it succeeds in meeting user needs;

(b) Marine and freshwater ecosystems, land cover change and soils**:** UNEP should further strengthen its input to the wider United Nations assessments in these fields focusing on the role of ecosystem goods and services in meeting human livelihoods;

(c) Chemical hazards, arsenic pollution and cumulative impacts of persistent pollutants: UNEP should continue its role in cooperation with other agencies;

(d) Urban environment: UNEP should continue its cooperation with UN-HABITAT;

(e) Disturbance of the nitrogen cycle: UNEP should cooperate with the scientific community;

(f) Assessments of extreme events: UNEP should continue and strengthen its support to countries for assessment of extreme events.

B. Assessment of inter-linkages

58. A number of needs and gaps with respect to current assessment of inter-linkages were identified. It was stressed that such assessments are needed in order to identify integrated and more cost-efficient strategies for development, implementation and compliance with international policy and law. A number of respondents felt that these were emerging issues which UNEP is particularly well placed to address, synthesize and add value to.

59. A further strengthening of the scientific basis of the *Global Environment Outlook* process was seen as a key option in this respect. One option was that UNEP should take the initiative to develop a "global sustainability assessment". Another option was that UNEP should establish a small team of internationally respected scientists to synthesize findings from existing assessments to identify gaps and inter-linkages. STAP of GEF expressed interest in cooperating with UNEP in these matters. Within the framework of the preparation of *Global Environment Outlook 4,* such an initiative could for instance then examine:

(a) Policy and technology trade-offs between global environmental challenges addressed by individual multi-lateral environmental conventions;

(b) Human-environment interactions such as: environmental goods and services; psychology and environmental impacts; assessments of the socio-economic impacts of environmental change; raising environmental awareness;

(c) New and emerging cross-cutting issues such as system-wide interactions of environmental changes and biophysical thresholds;

(d) Inter-linkages between environment and social and economic development and economic sectors such as: poverty; human health; transport; trade; tourism; agriculture; fishery depletion; security, industry and business; technology transfer; production and consumption.

C. Scientific credibility, legitimacy and relevance in the assessment processes

60. A number of options were mentioned with respect to strengthening scientific credibility, legitimacy and relevance in the assessment processes. Respondents, primarily from Governments, felt that IPCC offers a model to this effect. A number of respondents highlighted the option of developing an assessment and methodological framework (also to include civil society, business and industry, etc., in assessment processes) for environmental monitoring and assessment. Such a framework should also include tools and methodologies. The development of a framework should be based on learning from previous assessment processes, as demonstrated in academic studies over the past 10 years. A related option was to evaluate how the findings of existing assessments have been implemented. Another suggested option was that UNEP could convene science-policy sessions as an input to the Governing Council/Global Ministerial Environment Forum between its meetings in order to address needs identified by the Council/Forum.

61. Scientific credibility, legitimacy and relevance could also be enhanced through regional collaboration and better linkages between national and international activities. National institutions and regional assessment processes could be strengthened through links to global change research and funding programmes (IGBP, IHDP, WCRP, DIVERSITAS, IAI, and APN). Strengthening assessments at the regional and subregional levels would improve science-policy interaction, presumably by bringing the assessment processes to a level where scientists and policy makers see the direct linkages to issues faced in their own region.

62. The key option for ensuring scientific credibility would be to ensure the independence in the scientific process of the assessment and extensive, in-depth, critical expert peer review. An overriding concern was the need to avoid overburdening the scientific community with too many uncoordinated and narrowly focused assessments. Participation of local scientists and assessments at the subregional level were emphasized in Government and intergovernmental organization responses. It was also felt that centres of excellence and networks of collaborating centers could be an important vehicle in mobilizing scientific experts chosen on the basis of their scientific merit. It was felt that assessments should not only make use of scientific publications, data and reports, but also of local and indigenous knowledge.

63. Another key option for promoting policy legitimacy, relevance and saliency is to ensure intergovernmental and multi-stakeholder involvement in identifying assessment needs, adopting findings and taking part in peer review. This would, as discussed in many responses, in particular from scientific institutions, ensure that assessment processes contribute more strongly to policy making. Development of a set of key indicators to be reported on annually was a key option emphasized in particular in Government responses for increasing the policy relevance of assessments. Embedding environmental assessment processes within the framework of sustainable development would also enhance the policy relevance of the assessments. One intergovernmental organization suggested that UNEP should consider submitting the final reports of assessments such as the Millennium Ecosystem Assessment and IPCC to the Governing Council for formal adoption.

64. Governments, intergovernmental organizations and scientific institutions repeatedly drew attention to the option of ensuring that assessments are supported by improved access to data on the state of the environment, as well as improved monitoring systems and synthesis of data. Data sets should include demographic and economic statistics and indicators of the impacts of policies as well as environmental data. Respondents from developing countries in particular saw the creation of regional centres for monitoring environmental change as an important contribution to this goal. Others pointed to the importance of validated data sets as an important contribution to the scientific credibility of assessment processes. A number of responses suggested that harmonizing the reporting of international environmental conventions would contribute to policy-relevant data.

D. Cost-effectiveness, cooperation and strengthening of existing institutions

65. There was a strong demand among Governments, scientific institutions and non-governmental organizations for enhanced cooperation between existing institutions in environmental assessment, monitoring and information sharing at all levels to enhance the complementarity of the numerous assessment efforts and multilateral agreements. As pointed out by one scientific institution, however, some level of duplication and competition can also stimulate quality. It was acknowledged that cooperation and partnerships between national, regional and international institutions needs pooling, as well as the broad dissemination of skills and resources (e.g., modeling expertise, assessment tools, data and indicators) and incentives for collaboration.

66. Governments pointed out that methodologies and tools should be further developed to promote complementarily and synergy in environmental assessment and monitoring processes. The Governing Council/Global Ministerial Environment Forum could develop guidance and best practices for consideration by other institutions. Strengthening the operations of existing inter-agency cooperation mechanisms such as the United Nations system-wide Earthwatch mechanism was seen as a key option through its role as an information clearinghouse. A first step could be an inventory of institutions involved in assessment processes to clarify their specific roles and outputs. The development of policy guidelines to enhance cooperative approaches for reporting and to address gaps through consortiums of relevant organizations was recommended. It was stressed that institutions in developing countries require further capacity-building, and the entire process requires support from an agency with adequate, stable and predictable funds.

67. Options for strengthening existing institutions in the area of assessment and monitoring of environment and environmental change included:

(a) The strengthening of the operations of the UNEP Governing Council/Global Ministerial Environment Forum through, *inter alia*, the establishment of an intergovernmental panel on global environmental change (see point E below);

(b) The establishment by the Executive Director of a small, credible, independent expert advisory group concerned with multiple level assessment needs to provide timely updates on the state of the environment and emerging issues;

(c) The strengthening of UNEP sub-programme 1, Environmental Assessment and Early Warning, including a strengthening of the scientific base and policy relevance of the *Global Environment Outlook* process, as well as strengthening the UNEP regional collaborating centres and the networking between them;

(d) The strengthening and formalizing of UNEP cooperation with scientific institutions and academia, including the United Nations University as a think-tank for environmental assessments;

(e) The strengthening and expansion of existing institutions such as IPCC;

(f) The promotion by UNEP of independent scientific advisory bodies with ethical and intellectual authority appointed by the United Nations General Assembly and reporting annually to the United Nations Secretary-General.

68. The efficiency and effectiveness of an assessment process can be enhanced through the development of terms of reference for assessment processes and evaluation of performance. Better coordination, complementarity, synergy, use of multi-purpose and multi-scaled integrated assessments, and information and data sharing can also improve the cost-efficiency of the assessment system. Efficiency could also be improved by increased inclusion of local experts, as well as consideration of regional assessment processes, data concerns and human capacity. Monitoring the cost-effectiveness and impacts of assessment processes was suggested.

E. The establishment of an intergovernmental panel on global environmental change

69. Most respondents commented on the reference in paragraph 3(d) of decision 22/1 I A to the option of establishing an intergovernmental panel on global environmental change. As seen during the consideration of the issue at the twenty-second session of the Governing Council, the responses revealed a difference of views regarding the added value of establishing such a panel. Twenty-six Governments expressed support for the establishment of the panel, possibly as a pilot phase, if the mandate, function, modalities and composition met certain conditions. Six Governments felt it might be useful to establish the panel, while nineteen Governments rejected the idea. (See also information document UNEP/GCSS.VIII/INF/8.)

70. Respondents noted that any new or improved such structure for strengthening the scientific base of UNEP should:

(a) Be consistent with the UNEP mandate;

(b) Avoid duplication or cutting across existing bodies such as IPCC and specialized multilateral environmental agreements;

(c) Clearly add value, show value for money and make best use of resources;

(d) Identify assessment needs, key questions and priorities from a policy perspective;

(e) Provide sufficient opportunity for participation by major civil society actors and the private sector;

(f) Ensure that scientific assessments are left to the scientific community;

(g) Ensure scientific excellence and independence, openness and transparency and the involvement of experts from all relevant domains of science from all over the world;

(h) Provide options (as distinct from recommendations) that are policy relevant and drawn jointly from all parties to the assessment;

(i) Resist diverting efforts or weakening on-going scientific activities, as existing assessment processes already demand a significant commitment by the international scientific community.

71. Arguments in favor of the establishment of the panel included that it would be a mechanism for cross-cutting analyses of global environmental change, integration, coordination of assessments, interdisciplinary cooperation between environmental sectors and multilateral agreements and for ensuring the effective communication of assessments into political processes. Arguments against the panel included that it would be impossible for it to technically represent the myriad of disciplines that would need to be consulted regarding global environmental change. The option of establishing the panel was not seen as cost-effective, since financial resources are limited and additional activities should only be considered if financial resources are available. It was also felt that the panel could duplicate the work of the UNEP Governing Council and lead to the politicization of science.

72. It was noted that the functions of an assessment panel and a subsidiary advisory body are not fully compatible. The aim of an assessment panel is not to give advice, but to ensure scientific credibility and political relevance and legitimacy through an open, transparent process, which includes peer review from experts, governments and other stakeholders. Subsidiary advisory bodies, on the other hand, are part of the decision-making process. Both have their own dynamics and instruments to make them successful. It was noted that it might be necessary to apply both models if existing bodies are unable to meet identified needs and gaps.

73. Consideration of the issue indicates that there are different perceptions of the responsibility and functions of such an intergovernmental panel and thus there is no shared view of what type of mechanism the panel would represent. The conditions for and arguments against the establishment of the panel do however, relate to the broad set of assessment needs and functions identified in this synthesis report. It might therefore be advisable to explore the possibility of reaching consensus on these needs and functions first, and then explore the need for one or more mechanisms to support them, on the basis of letting form follow function.

F. Developing country participation and capacity-building

74. Many Governments, intergovernmental organizations and scientific institutions place a high priority on the strengthening of local and regional assessment capacities. Saliency, credibility and legitimacy of assessment processes depend on the inclusion of developing country participants, as pointed out by many respondents. In order to maintain and enhance the scientific credibility of assessment processes, capacity-building in developing countries and countries with economies in transition is required. A significant number of responses suggest that networking of research institutions would also contribute to the achievement of this goal and provide the basis for regional integration and international cooperation. An assessment of local and regional capacity needs would be required. Links to national scientific institutions, non-governmental organizations and private sector assessment processes must also be strengthened, as well as the creation of regional science councils and strengthening of links between regions. Participants from developing countries should be involved in all stages of the assessment process, from scoping to production and dissemination of the final products. Needs expressed included capacity-building for integrated environmental assessment as well as on how to implement the findings of the assessments.

75. Strategies suggested by intergovernmental organizations included the establishment of fellowships and visiting scientist programs and the strengthening of institutions to provide better access to information. Intergovernmental organizations also suggested that better use be made of information technology in disseminating information and environmental education, as well as the use of television, publications, summer camps and educational activities, especially for women and children in developing countries.

VI. Conclusions

76. The implementation of UNEP Governing Council decision 22/1 I A on strengthening the scientific base of UNEP has so far included: an extensive consultative process, resulting in 154 written responses from Governments, intergovernmental organizations, non-governmental organizations and scientific institutions; the development of a UNEP web site at http://science.unep.org, containing all responses, relevant background documents and an optional web-based questionnaire; and an independent analysis and synthesis of responses under the auspices of SCOPE. Financial support for the implementation of decision 22/1 I A has been provided by the Governments of Norway and the Netherlands.

77. This report synthesizes only the responses to the questions and considerations asked in decision 22/1 I A. Responses to the supplementary questions included in the optional web-based questionnaire are included in a separate information document (UNEP/SI/IGC/INF/1). The analysis, based on the 123 substantive responses received by 12 November 2003, led to the following key findings:

(a) Types of gaps and assessment needs on environment and environmental change relate to:

(i) Assessment of existing environmental challenges;

(ii) Assessment of inter-linkages;

(iii) Scientific credibility, legitimacy and relevance in the assessment process;

(iv) Cost-effectiveness, cooperation and strengthening of existing institutions;

(v) Developing country participation and capacity-building.

(b) UNEP is seen as playing a leading role in environmental assessments at the global and regional levels and in catalyzing support for regional, subregional and national level assessments in partnership with the scientific community, other agencies and stakeholders;

(c) It was reiterated that the increasing complexity of environmental degradation requires an enhanced capacity in UNEP for scientific assessment, monitoring and early warning;

(d) The UNEP Governing Council/Global Environmental Ministerial Forum was seen as the principal body for setting the overall priorities for assessment and monitoring of the environment and environmental change in the context of the Millennium Development Goals, the targets in the Johannesburg Summit Plan of Implementation, the WEHAB initiative and the work of the United Nations Commission on Sustainable Development. A key option for

promoting policy legitimacy, relevance and saliency is to ensure intergovernmental and multi-stakeholder involvement in identifying assessment needs and adopting findings and in-depth peer review. Some felt that that there was a need to expand intergovernmental operations of the Council/Forum in this area, possibly through an intergovernmental panel on global environmental change, an intergovernmental and/or a scientific and technical subsidiary advisory body or some similar mechanism, but there was no agreement in this respect.

(e) One suggested option was the establishment by the Executive Director of a small, credible, independent expert advisory group concerned with multiple level assessment needs, based on experiences from existing advisory panels such as STAP, to provide timely updates on the state of the environment and emerging issues;

(f) There was a need for strengthening UNEP sub-programme 1, Environmental Assessment and Early Warning, including strengthening the scientific base and policy relevance of the *Global Environment Outlook* process, the UNEP regional collaborating centres and the networking between them;

(g) A number of needs and gaps related to current assessment of existing international environmental challenges were identified. Some felt that there was a need to establish a mechanism to further identify these gaps in cooperation with relevant policy instruments in order to determine how UNEP can best contribute through a systematic, cost-efficient system for responding to multiple environmental assessment and monitoring needs at multiple scales;

(h) Another option proposed was that UNEP should establish a small team of internationally respected scientists to synthesize findings from existing assessments in order to identify gaps and inter-linkages. STAP of GEF expressed interest in cooperating with UNEP in this area. Such an initiative could for instance be implemented within the framework of the preparation of *Global Environment Outlook* 4;

(i) UNEP should strengthen its cooperation with scientific institutions and academia. Scientific credibility should be ensured through the independence in the scientific process of assessments and extensive, in-depth critical, expert peer review. An overriding concern was the need to avoid overburdening the scientific community with too many uncoordinated and narrowly focused assessments. Assessments should be supported by enhanced monitoring systems, and access to validated data;

(j) A number of respondents highlighted the need to develop a methodological assessment framework for environmental monitoring and assessment, including tools and methodologies. The development of a framework should be based on learning from previous assessment processes;

(k) The Governing Council/Global Ministerial Environment Forum could develop guidance and best practices for consideration by other institutions. Strengthening the operations of existing inter-agency cooperation mechanisms such as the United Nations system-wide Earthwatch was seen as a key option. It might be appropriate to further strengthen Earthwatch's role as an information clearinghouse. A first step could be the creation of an inventory of institutions involved in assessment processes to clarify their specific roles and outputs;

(l) Local and regional capacities for integrated assessment must be strengthened and integrated. Increased participation, including civil society, business, industry and other stakeholders, capacity-building, technology transfer and increased financial support are necessary to achieve this. Enhanced efforts should be seen in the context of ongoing UNEP assessment and monitoring programmes and activities, particularly in the regions.

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