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**Global intergovernmental and multi-stakeholder consultation
on the fourth Global Environment Outlook report**

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Item 3 of the revised provisional agenda*

**Consideration of the key aspects of the fourth
Global Environment Outlook report**

**Fourth Global Environment Outlook report: proposed scope and
process**

Note by the Executive Director

Summary

The present note addresses the key aspects of the process for the preparation, by 2007, of the fourth comprehensive Global Environment Outlook as mandated by the Governing Council/Global Ministerial Environment Forum in its decision 22/1 I B. The note contains the documentation for the intergovernmental and multi-stakeholder consultation on the fourth Global Environment Outlook. The consultation is the second in a series, following the first intergovernmental consultation on strengthening the scientific base of UNEP, which was convened January 2004. The consultation has been made possible through extrabudgetary support from the Governments of the Netherlands and Norway. Chapter I contains suggested elements for a proposed statement by the Global Intergovernmental and Multi-Stakeholder Consultation reflecting its conclusions and recommendations on the scope and process of the fourth Global Environment Outlook. Those conclusions and recommendations will serve as guidance to the experts undertaking the assessment. Chapter II contains background information on the Global Environment Outlook process, the mandate for the fourth Global Environment Outlook and its role in strengthening the scientific base of UNEP. Chapter III outlines the proposed process for preparing the fourth Global Environment Outlook. Chapter IV outlines the proposed scope and overall outline of the fourth Global Environment Outlook together with the proposed key questions to be considered by experts within the assessment process. Chapter V presents some concluding remarks and invites Governments and stakeholders to play an active role in the process of developing the fourth Global Environment Outlook.

* UNEP/DEWA/GEO/IGC.1/1/Rev.1

I. Suggested elements for a proposed statement by the Global Intergovernmental and Multi-stakeholder Consultation on the scope and process of the fourth Global Environment Outlook

The Global Intergovernmental and Multi-stakeholder Consultation may wish to consider the adoption of a statement reflecting its conclusions and recommendations on the Global Environment Outlook-4 scope and process along the lines suggested below:

The Global Intergovernmental and Multi-stakeholder Consultation on the Scope and Process of the fourth Global Environment Outlook

A. Introduction: The Global Environment Outlook report series and the fourth Global Environment Outlook report design process

1. Recalling the responsibilities of the Governing Council of the United Nations Environment Programme (UNEP), as outlined in General Assembly resolution 2997 (XXVII) of 15 December 1972, to keep under review the world environmental situation in order to ensure that emerging environmental problems of wide international significance receive appropriate and adequate consideration by Governments and, among other things, to promote the contribution of international scientific and other professional communities to the acquisition, assessment and exchange of environmental knowledge and information,
2. Recalling also Governing Council decisions 18/27, 19/3 and 20/1 on the Global Environment Outlook, and in particular decision 22/1 I B which extended the interval between the comprehensive Global Environment Outlook reports to five years and requested the fourth iteration by 2007,
3. Noting with appreciation the invitation by the Executive Director and the support from the Governments of the Netherlands and Norway for the second Global Intergovernmental and Multi-stakeholder Consultation on strengthening the scientific base of United Nations Environment Programme and its focus on the process and scope of the fourth Global Environment Outlook,
4. Welcoming the note of the Executive Director on the proposed scope and process of the fourth Global Environment Outlook, including the report on the extensive consultative process for the design of the Outlook involving experts, partners, collaborating centres and regions,
5. Noting with appreciation that the comprehensive Global Environment Outlook report series has now been supplemented by the Global Environment Outlook Yearbook series and also by regional and thematic environmental outlook products in a manner which constitutes the foundations for a modular approach to keeping the global environment under review;

B. The objective, scope and overall outline of the fourth Global Environment Outlook Report

6. *Recommends* that the objective, scope and overall outline of the fourth Global Environment Outlook should be to provide a global, comprehensive, reliable and scientifically credible, policy-relevant and legitimate up-to-date assessment of and outlook for the state of knowledge regarding the interaction between environment and society by:
 - (a) Presenting a summary for policy-makers focusing on the main issues identified in the fourth Global Environment Outlook which are of particular interest to the Governing Council/Global Ministerial Environment Forum of UNEP and policy-makers at large;
 - (b) Presenting an introduction which places the fourth Global Environment Outlook report in the context of the development of international environmental governance and its relation to the internationally agreed development goals and targets since the World Commission on Sustainable Development (the Brundtland Commission, 1987) while also looking towards 2050 and beyond;
 - (c) Assessing the state and trends of the global environment: an overview of the major environmental challenges and emerging issues seen from a global perspective, in a manner which reflects their subglobal characteristics, inter alia by analysing human driving forces and pressures on the

environment; primary and secondary environmental impacts of such pressures; the consequences of environmental change for ecosystem services and human well-being; and the effectiveness of policy responses;

(d) Assessing interlinkages between major environmental challenges and their consequences for policy and technology response options and trade-offs, including by analysing opportunities for technology and policy interventions for both mitigating environmental change and adapting to environmental change – evaluating which are “win-win” solutions across issues and which are not;

(e) Assessing challenges and opportunities by focusing on certain key cross-cutting issues relating to how environment can contribute to the major development goals and targets and how environmental degradation can impede progress towards those targets, with a focus on vulnerable groups and locations;

(f) Presenting a global and subglobal outlook, including plausible short-term (up to 2015) and medium-term (up to 2050) scenarios for the major societal pathways and their consequences for the interaction between environment and society at the global level, with regional examples;

(g) Assessing environment for prosperity, focusing on the state of knowledge regarding the effectiveness of various approaches to overarching environmental policies, in particular green accounting; mainstreaming environmental concerns into the plans and policies of social and economic sectors; and enforcement of and compliance with multilateral environmental agreements;

C. Key questions for the fourth Global Environment Outlook report

7. *Calls on* the Executive Director, the involved experts and collaborating centres to respond to the following indicative list of key questions as they relate to the recommended scope of the fourth Global Environment Outlook:

- (a) Summary for policy-makers;
 - (i) How are various forms of human-induced global environmental change affecting our development opportunities?
 - (ii) What are the key policy-relevant issues and findings relating to the interaction between environment and society where there is a need for further action?
- (b) Introduction;
 - (i) Where do we stand in the evolution of ideas and concepts on the environmental dimensions of sustainable development?
 - (ii) How does the fourth Global Environment Outlook deal with the multidimensional and multiscale nature of the interaction between environment and society?
 - (iii) How does the environment contribute to development, human well-being and prosperity, and which groups and what areas are vulnerable to environmental change?
 - (iv) What has been the outcome of the recommendations of the Brundtland Commission and the UNEP Environmental Perspective to the Year 2000 and Beyond?
- (c) State of and trends in the global environment: an overview;
 - (i) What is the current state of knowledge regarding the environmental challenges relating to biodiversity; freshwater; coastal and marine areas; forest; drylands; urban areas; polar areas; climate change; the ozone layer; tropospheric and local air quality; biodiversity, chemicals and disturbances of the nitrogen cycle?
 - (ii) What are the current internationally agreed biophysical, institutional and governance goals, targets and standards for environmental governance relating to the major environmental challenges and what indicators and data are available to measure progress towards them?

- (iii) What are the current status of and trends in environmental change and the interaction between environment and society seen in relation to the internationally agreed environmental goals and targets?
 - (iv) What are the drivers of environmental change and alterations in environmental services, how do they affect human well-being and prosperity, and which groups and what areas are vulnerable to those changes?
 - (v) How is the environment contributing to the implementation of the internationally agreed development goals, including those contained in the Millennium Declaration, in areas such as human health, food security, poverty alleviation, energy and disaster-preparedness?
 - (vi) What policies are in place and what action is being taken? How effective are those responses and what is the cost of inaction?
- (d) Interlinkages between major environmental challenges;
 - (i) What are the key interlinkages between the various forms of environmental change?
 - (ii) What is the probability of the increasingly complex human pressure on the environment leading to new, combined, synergetic, cross-cutting or system-wide environmental change, such as the overstepping of biophysical thresholds, which may lead to non-linear, sudden and unexpected effects?
 - (iii) How are the human drivers, activities and impacts interlinked and to what extent can they be de-linked in order to change the human-environment interaction if need be?
 - (iv) How are the responses and interventions currently linked and to what extent can they be de-linked or regrouped in order to change the human-environment interaction if need be?
 - (v) What are the implications of interlinkages on enforcement and compliance regimes under the various multilateral environmental agreements?
- (e) Challenges and opportunities;
 - (i) From reference points such as the Brundtland Commission and Agenda 21, where did we want to be in 2007? How far have we got? How did we get here?
 - (ii) Where do we stand on the environmental contribution to the implementation of the internationally agreed development goals, including those contained in the Millennium Declaration, and in particular Millennium Development Goal 7 on ensuring environmental sustainability?
 - (iii) Do the current environmental assessment landscape and related indicators adequately provide the knowledge base for the environmental contribution to the Millennium Development Goals?
 - (iv) Does environmental governance adequately take into account the links between environment and cross-cutting challenges such as poverty, health, institutions and governance, science and technology, and trade?
 - (v) How vulnerable are human and social systems to natural and human-induced disasters?
 - (vi) What macropolicies are in place to address the coping- and adaptation-capacity needs of groups and areas vulnerable to environmental change?
- (f) Global and subglobal outlook
 - (i) What are the likely future environmental consequences of today's environmental policies and actions?
 - (ii) What are the likely future environmental consequences of the various policy trends?

- (iii) What are the likely consequences of the various policy options and choices for the environment under various scenarios?
- (iv) What are the likely impacts or effects of promising opportunities for policy innovations on the interaction between environment and society?
- (v) How would the various policy and technology trade-offs between the various environmental challenges and between environment and development affect the interaction between environment and society in the future?
- (g) Environment for prosperity;
 - (i) What are the main conclusions and overarching policy findings of the fourth Global Environment Outlook, and is there a need to adjust our expectations and revisit existing goals and targets?
 - (ii) How can the environment sector most effectively ensure enforcement of and compliance with multilateral environmental agreements?
 - (iii) What are the financial, institutional and practical aspects of promoting or neglecting promising policies, strategies and response measures for environmental management?
 - (iv) What mechanisms exist at national level for green accounting and promoting mainstreaming of environmental concerns into social and sectoral plans and policies, including contributing to sustainable-development and poverty-reduction strategies?
 - (v) How do we address the need for science, data, indicators, monitoring and assessment to measure progress towards the environment dimension of the Millennium Development Goals?

D. The process of preparing the fourth Global Environment Outlook Report and related capacity-building activities

8. *Recommends* that the aim of the fourth Global Environment Outlook production process should be to mobilize the best scientific expertise in a geographically and gender-balanced way for interacting with policy-makers and civil society and analysing critical environmental issues through an open and transparent, multiscaled and multidisciplinary integrated assessment process of high legitimacy, credibility, and utility;

9. *Welcomes* the process and schedule presented by the Executive Director for the preparation of the fourth Global Environment Outlook, including:

- (a) Establishing chapter-specific expert working groups consisting of coordinating authors, lead authors and contributors, including representatives of collaborating centres, chosen on the basis of scientific merit, paying due attention to the need to ensure balanced geographical and gender representation;
- (b) Establishing a regionally and gender-balanced coordination committee comprised of co-chairs, coordinating authors, representatives of Global Environment Outlook collaborating centres and the Executive Director to oversee the assessment process;
- (c) Establishing a guideline for the assessment process based on the outcome of the consultative design process to ensure that the assessment process is independent and credible and that experts are given the flexibility to respond to the key questions within a coherent analytical framework and in accordance with the latest state of scientific knowledge;
- (d) Providing core data support to the assessment process, including through inter-agency cooperation;
- (e) Subjecting the assessment to an extensive expert and government peer review and, subject to the availability of extrabudgetary funds, undertake a round of ad hoc regional stakeholder consultations in 2006;

(f) Convening a global intergovernmental and multi-stakeholder consultation in 2007, subject to the availability of extrabudgetary funds, to consider the findings of the assessment and its summary for policy-makers;

(g) Forwarding the fourth Global Environment Outlook, together with the outcome of the global consultation, to the Governing Council/Global Ministerial Environment Forum for its consideration;

(h) Undertaking a set of wide-ranging outreach measures;

10. *Stresses* the need to ensure developing-country-expert participation in the assessment process of the fourth Global Environment Outlook and to continue efforts for capacity-building related to global and subglobal environment outlooks;

11. *Invites* countries in a position to do so and other partners active in the field of development to provide funding for the fourth Global Environment Outlook, in particular, for developing-country-expert participation; the ad hoc regional stakeholder consultations; the global intergovernmental and multi-stakeholder consultation; capacity-building; and in-kind support for the participation of national experts and institutions.

II. Background and mandate for the fourth Global Environment Outlook report

A. What is an assessment?

12. The need to strengthen the links between science and policy was stressed both at the World Summit on Sustainable Development in 2002 and in the consultative process on strengthening the scientific base of UNEP, also referred to as the Science Initiative. Processes for keeping the environment under review must be based on a close relationship between science and policy, at various geographic and temporal scales. Assessments are geared towards achieving that interaction, as they are fundamentally communication processes, not simply reports, and share many similar features regardless of their scope (for definitions and characteristics see boxes 1 and 2 below). The key challenge is to design assessment processes that ensure the interaction between science and the various stages of the policy- and decision-making cycle at various scales.

13. Assessments must be policy-relevant and feed into and support policy- and decision-making processes to have utility and value to environmental management. Key characteristics of “effective” assessments (i.e., assessments perceived as being credible, relevant and legitimate) include who is involved (participation), how assessments are conducted (science and governance) and the scope of the assessment (focus).¹

Box 1 Definition of an assessment

An assessment is the entire social process for undertaking a critical and objective evaluation and analysis of information, including indigenous and local knowledge, designed to support decision-making. It applies the judgment of experts to existing knowledge to provide scientifically credible answers to policy-relevant questions, quantifying where possible the level of confidence.

Box 2 Characteristics of a credible, legitimate and relevant assessment

- § It is a critical, peer-reviewed evaluation of information for purposes of guiding decisions on a complex, public issue, following a well-defined process.
- § The scope (topic under consideration) is defined by the stakeholders, who are typically decision-makers. Findings are policy-relevant, but not prescriptive and reflect, for example, an “if ... then” approach.
- § It is conducted by a credible group of experts with a broad range of disciplinary and geographical experience and representation, in a balanced and transparent way.

¹ Eckley, Noelle (2001). Designing effective assessments: the role of participation, science and governance, and focus. Report of a workshop co-organized by the European Environment Agency and the Global Environmental Assessment Project, Copenhagen, 1–3 March 2001. EEA Environmental issue report No. 26.

- § It reduces complexity but adds value by summarizing, synthesizing and building scenarios, and identifies consensus by sorting out what is known and widely accepted from what is not known or not agreed.
- § It sensitizes scientific communities to policy needs and the policy-making community to the scientific basis for action.

B. The mandate for the Global Environment Outlook

14. The first Global Environment Outlook report was initiated by the UNEP Governing Council in its decision 18/27 (1995), in which the Executive Director was requested to prepare a new, comprehensive report on the present and future state of the world environment including possible response measures to address the situation. Following the establishment of the Global Environment Outlook process and production of the first Global Environment Outlook report, the Governing Council renewed the mandate for Global Environment Outlook in 1997, 1999 and 2002.² The latest of those Governing Council decisions extended the interval between the Global Environment Outlook reports to five years, and added an annual Global Environment Outlook statement to the request.

15. The Global Environment Outlook has over the years evolved into a series of integrated environmental assessments. UNEP has published three volumes of the comprehensive Global Environment Outlook report series: GEO-1 in 1997, GEO-2000 (GEO-2) in 1999 and GEO-3 in 2002, before the World Summit on Sustainable Development. The first volume of the annual statement was published in March 2004 as the Global Environment Outlook Yearbook 2003. At subglobal level, the Global Environment Outlook process has been replicated to undertake many regional, subregional, national and subnational assessments. The Global Environment Outlook process has also produced technical reports, a Global Environment Outlook for youth, the Global Environment Outlook Data Portal, meeting reports, capacity-building materials and associated products responding to specific user needs (see <http://www.unep.org/geo/>). The wide range of Global Environment Outlook outputs reflects the diversity and complexity of the Global Environment Outlook assessment process, which is characterized by being a bottom-up consultative process involving a network of collaborating centres. The next comprehensive Global Environment Outlook report (GEO-4) will, as requested by the Governing Council, be published in 2007.

16. The intergovernmental consultation on strengthening the scientific base of UNEP commended the bottom-up and consultative approach used in the Global Environment Outlook, but also called for a further strengthening of the Global Environment Outlook and other UNEP assessments within the context of a coherent assessment framework. The aim of the present paper is to present the concept for the fourth Global Environment Outlook (GEO-4). The first three Global Environment Outlooks characterized a unique approach for global assessment of the environment by linking process and product. An increasing number of people, countries and institutions are now using the Global Environment Outlook approach for integrated environmental assessment. GEO-4 will build on past experiences while responding to the call for a further strengthening of the process.

C. The objectives and scope of the Global Environment Outlook

17. The goal of the Global Environment Outlook is to ensure that environmental problems and emerging issues of wide international significance receive appropriate, adequate and timely consideration by Governments and other stakeholders.

18. The overarching objectives of the Global Environment Outlook are to:

- (a) Provide access to the best scientific knowledge for international environmental governance and the mainstreaming of environmental concerns into social and economic sectors, and in support of the internationally agreed development goals;
- (b) Facilitate the interaction between science and policy through multiscaled and multidimensional integrated assessment processes and products of high legitimacy, credibility and utility;
- (c) Build geographically and gender-balanced partnerships and capacity for environmental assessments.

² Governing Council decision 19/3, 20/1 and 22/1 I B.

19. As an integrated environmental assessment, Global Environment Outlook looks beyond traditional state of the environment reports, to provide answers to the following five questions:

- (a) What is happening to the environment and why?
- (b) What are the consequences for the environment and humanity?
- (c) What is being done and how effective is it?
- (d) Where are we heading?
- (e) What actions could be taken for a more sustainable future?

20. Each Global Environment Outlook assessment is multidimensional in scope, incorporating environmental, policy, geographic and temporal perspectives. Environmental dimensions include:

- (a) Thematic (related to the state of and trends in land, atmosphere, water and biodiversity);
- (b) Functional (related to the provision of environmental goods and services);
- (c) Sectoral (the relationships between the environment and activity areas such as energy use, tourism, agriculture and trade);
- (d) Cross-cutting (relating to production, consumption, gender, poverty, human security and vulnerability);
- (e) Interlinkages within and between all of the above.

21. To date, all the Global Environment Outlook assessments have had a strong thematic emphasis. GEO-3, for example, assessed environmental conditions and trends under thematic headings and then highlighted the linkages between environmental change and human vulnerability in a separate chapter. All Global Environment Outlook reports, however, assess the environment within the broader context of sustainable development.

22. Geographically, the Global Environment Outlook assessment is global in scope, but differentiated at regional and subregional levels to highlight important spatial variations and the environmental priorities warranting policy attention in different parts of the world.

23. Each Global Environment Outlook assessment covers a specific time period decided by or relevant to the policy-makers to whom it is targeted. GEO-3, for example, was requested by the UNEP Governing Council to be a “30 years after Stockholm” report. The Outlook is an important part of the temporal dimension. As well as covering the period since 1972, GEO-3 looked forward to the next 30 years.

24. A further dimension of the Global Environment Outlook is its policy relevance. Policy considerations often influence the selection of issues to be included, the analytical approach and the presentation of findings. The assessment provides information and guidance for policy- and decision-making and options for action; it is not policy-prescriptive.

D. Conceptual and analytical framework, methods and tools

25. The building of a common understanding of what the Global Environment Outlook aims to do and how it works has resulted in a shared nomenclature and coherent methodology for the assessment. Over time, the Global Environment Outlook has developed an increasingly integrated approach to environmental assessment and reporting. The integrated approach is an umbrella term for:

- (a) Linking the state-of-the-environment analysis with the policy analysis;
- (b) Incorporating global and subglobal perspectives;
- (c) Incorporating historical and future perspectives;
- (d) Covering a broad spectrum of issues and policies.

26. The driving force-pressure-state-impact-response (DPSIR) framework, originally developed for indicators, has been used for the three comprehensive Global Environment Outlook assessments to date. The framework is relatively easy to understand, is well adapted to thematic analysis and can cope with a wide range of environmental issues. Its use also helps ensure that relevant socio-economic and policy issues are integrated into the analysis. However, the framework is rather linear in nature and is less

suited to analysing multidimensional issues. Conceptual frameworks outlining other approaches in order to understand the complex interaction between environment and society better are continuously evolving and UNEP intends to draw on those developments for GEO-4.

27. Scenarios have been used to develop the outlook components of all three comprehensive Global Environment Outlook assessments to date, but in different ways. In GEO-1, a single “business as usual” scenario provided the basis for a model-based analysis of future status and trends of selected environment-related issues to 2050. GEO-2000 shifted to region-specific analyses, to 2015, of alternative policies contrasted with a baseline scenario. GEO-3 developed four plausible scenarios for the future and analysed their environmental implications to 2032. All three approaches have combined narrative and qualitative elements. GEO-2000, being the Millennium Report, also carried out a global survey amongst environmental experts of emerging issues for the twenty-first century.

28. The compilation of core global data sets is a crucial element of the long-term Global Environment Outlook strategy, as the basis for integrated environmental assessment must be reliable and accessible data. The Global Environment Outlook Data Portal, which structures the global data sets used in Global Environment Outlook, has been developed by UNEP with advice from the Global Environment Outlook Data Working Group (see <http://www.geodata.grid.unep.ch>).

29. The portal provides online access to over 400 statistical and geographical data sets at national, subregional, regional and global levels. The data sets are compiled from primary sources and cover a broad range of environmental and socio-economic themes. State-of-the-art functionality for online data visualization and exploration is available for creating graphs, tables and maps. Initiated in 2000, the Global Environment Outlook Data Portal is continuously maintained and updated. Regional versions of the global portal are now being developed.

30. The comprehensive Global Environment Outlook assessment draws on a wide range of scientific assessments from other processes and on peer reviewed reports, including those of other United Nations bodies. Environmental assessments at various subglobal levels are an increasingly important resource, particularly those which have adopted the Global Environment Outlook process.

E. Global Environment Outlook partnerships and capacity-building

31. Global Environment Outlook reports are based on information supplied by a global network of collaborating centres, and many individual experts and specialized institutions from around the world with a broad range of disciplinary and geographical experience.

32. Since the Global Environment Outlook was initiated in 1995, the network of Global Environment Outlook collaborating centres has expanded from 20 for GEO-1 to 36 for the GEO-3 assessment. The network is globally distributed and each collaborating centre plays a unique role in the process, whether it be to carry out an assessment for a specific subregion of the world or to provide quantitative modelling of a global scenario. Some centres take on multiple responsibilities during an assessment cycle. Many collaborating centres also play a major role in the subglobal assessment activities, including capacity-building within regions.

33. Global Environment Outlook collaborating centres are selected because they:

- (a) Have environmental assessment, analysis and reporting as part of their institutional mandate;
- (b) Have a regional/subregional environmental mandate, or have recognized thematic or specialized assessment expertise;
- (c) Are recognized as leading institutions in their own right which can further develop capacity in their regions;
- (d) Work in a multidisciplinary manner;
- (e) Work to provide policy-relevant analysis;
- (f) Have the ability to network in the region/subregion with sectoral centres of excellence and relevant regional-, subregional- and national-level non-governmental, governmental and private-sector institutions to support their work.

34. The Global Environment Outlook collaborating-centre network includes scientific and academic institutions, non-governmental organizations, intergovernmental organizations and government-affiliated bodies. While that diversity brings a wide range of expertise and insight to enrich the Global Environment Outlook process, there is also a wide range in capacity between collaborating centres which must be taken into account and strengthened as appropriate.

35. The importance of capacity-building related to integrated environmental assessment in general and the Global Environment Outlook in particular has been recognized by the UNEP Governing Council/Global Ministerial Environment Forum, regional environmental ministerial forums and donors. Capacity-building is a key component of the Global Environment Outlook process. It is essential for the long-term success of the comprehensive Global Environment Outlook assessment and for ensuring that the Global Environment Outlook model is suitably replicated at the regional, national and local levels.

36. The intergovernmental consultation on strengthening the scientific base of UNEP identified a number of capacity-building needs, including several which could be implemented through the Global Environment Outlook process.

37. Another important area of partnership for the Global Environment Outlook is with other United Nations bodies. Areas of cooperation include data-sharing, contribution of specialized inputs to Global Environment Outlook reports, participation in review processes and provision of relevant reports and other resource materials. Also, co-partnership in projects can result in useful inputs for the Global Environment Outlook process.

F. Global Environment Outlook monitoring and evaluation

38. Global Environment Outlook processes and products are monitored on a continuous basis, through reader questionnaires, web-site monitoring, a dedicated e-mail query-response service, strengths, weaknesses, opportunities and threats (SWOT) analyses and other means. An in-depth survey of the use of the first two Global Environment Outlook reports and the impact of the Global Environment Outlook process was carried out by independent consultants after publication of GEO-2000. A summary of the results was presented to the UNEP Governing Council in 2000. Global Environment Outlook web-site usage is analysed on a monthly basis. Several reports have been prepared presenting findings from the user-monitoring processes for GEO-2000 and GEO-3. After GEO-3, a detailed SWOT analysis was carried with Global Environment Outlook collaborating centres. Several internal UNEP SWOT analyses have also been undertaken.

G. The role of the Global Environment Outlook process in strengthening the scientific base of UNEP

39. The strengthening of the Global Environment Outlook process is a key component of the wider initiative by the Governing Council/Global Ministerial Environment Forum on strengthening the scientific base of UNEP. The rationale for that initiative was that the increasing complexity of environmental degradation requires an enhanced capacity for scientific assessment, monitoring and early warning. For that reason, the twenty-second session of the Governing Council/Global Ministerial Environment Forum, in February 2003, established a consultative process to identify gaps and needs in the current assessment structure, and means to address them, referred to as the Science Initiative. The process included an extensive review leading to an expert and an intergovernmental consultation in January 2004 (see also <http://science.unep.org>). The conclusions and recommendations from the consultation were presented to the eighth special session of the Governing Council/Global Ministerial Environment Forum, in March 2004, and further considerations will take place during its twenty-third regular session, in February 2005.

40. The consultation reiterated the central role of the Council/Forum in determining priorities for assessments within the context of development goals, possibly in the form of a coherent environmental assessment partnership framework. It was acknowledged, however, that sound assessments must be based on reliable data; for most environmental issues, data quality and quantity need to be improved. The Executive Director has recommended that any such framework should not only be limited to assessments and has proposed to the twenty-third session of the Council/Forum that a framework, tentatively called "Environment Watch" should be developed. The framework contains a conceptual approach for keeping the world environmental situation under review, as mandated by General Assembly resolution 2997 (XXVII). It is proposed that the framework would comprise two components. The first component would be an operational one, consisting of functions that are needed to keep the environment under review, and the second would be a modular component consisting of modules defined by their thematic and geographic coverage. Such a two-tiered approach would further strengthen international cooperation in meeting the growing demand for better data, information and knowledge for environmental early warning and decision-making.

41. The Global Environment Outlook process would be a key component within the proposed framework. The design of the fourth Global Environment Outlook takes into account the call from the Science Initiative for a further strengthening of the Global Environment Outlook process. It, amongst others, called for a more effective interaction between science and policy through intergovernmental and multi-stakeholder consultations. The regional and global consultations have been put in place during the design phase of the fourth Global Environment Outlook to strengthen those operational aspects of the comprehensive Global Environment Outlook process and thereby further improve its policy legitimacy and relevance. The global consultation is the second in a series and follows the first intergovernmental consultation on strengthening the scientific base of UNEP, which was held in January 2004.

42. The more specific recommendations from the Science Initiative on how to strengthen the Global Environment Outlook process further will also be accommodated in the design of the fourth Global Environment Outlook. They include:

- (a) Strengthening the linkages with other assessments and the international scientific community;
- (b) Improving the quantity, quality and accessibility of environmental data;
- (c) A further strengthening of the scientific peer review process for the Global Environment Outlook;
- (d) Strengthening and expanding the network of collaborating centres with additional institutions of high scientific credibility in all regions.

43. A main component of the rationale for the proposed Environment Watch framework is that the Global Environment Outlook process, like many other assessments and observing and networking systems, has evolved into a modular approach. All the various Global Environment Outlook assessments are clearly defined by their thematic and geographical scope as well as the time scale under consideration. Current modules include the comprehensive Global Environment Outlook, the Global Environment Outlook Yearbook and a range of subglobal assessments. The comprehensive Global Environment Outlook series, to which the fourth Global Environment Outlook belongs, is the comprehensive global environmental assessment module. That module is complemented by the Global Environment Outlook Yearbook series, which is another global module, with a different scope both in temporal and in thematic coverage. Both modules support global decision-making forums, in particular the Governing Council/Global Ministerial Environment Forum. The two global modules are complemented by regional and thematic environmental outlooks, such as the Global Environment Outlook-Latin America and the Caribbean and the Africa Environment Outlook, and by environment outlooks for countries and cities. Those subglobal modules are aimed at supporting subglobal decision-making forums; the Africa Environment Outlook, for example, is prepared in interaction with the African Ministerial Conference on the Environment (AMCEN).

44. It should be noted that design of the fourth Global Environment Outlook is but one step in an incremental and modular approach to strengthening the Global Environment Outlook process and the scientific base of UNEP. Other steps include a further strengthening of and support to regional and subregional environmental outlook assessments and also to thematic assessments. Efforts are also under way to strengthen data availability, early warning, capacity-building and networking through a similar

modular approach. If developed within a coherent conceptual framework, the various modules would form an increasingly powerful and coherent knowledge base linked to the appropriate decision-making cycles.

III. Producing the fourth Global Environment Outlook

A. The design process for the fourth Global Environment Outlook

45. The design process for the fourth Global Environment Outlook is an extensive consultative process consisting of a number of discrete but progressive steps and parallel planning processes including:

- (a) Initial design meeting, Nairobi, June 2004;
- (b) Regional ad hoc expert consultations on the fourth Global Environment Outlook, September–October 2004;
- (c) Fourth Global Environment Outlook design meeting, Nanyuki, Kenya, November 2004;
- (d) Global Intergovernmental and Multi-stakeholder Consultation on the fourth Global Environment Outlook, Nairobi, February 2005;
- (e) Various expert and partner consultations, September 2004–February 2005.

1. The outcome of the initial design meeting

46. The initial design meeting held in Nairobi in June 2004 and took note, amongst other things, of the conclusions and recommendations of the consultative process on strengthening the scientific base of UNEP, the Science Initiative on thematic gaps and needs in the current assessment landscape. Those included a number of specific national and regional requirements which should be addressed, such as water, land degradation, forests, chemicals, biological diversity, ecosystem services, consumption and production, environment and human health, and the environmental dimensions of pre- and post-conflict situations.

47. The initial design meeting also noted that the Science Initiative highlighted the need to assess interlinkages. Interlinkages include major environmental challenges interlinked through systemic interactions and feedback and through policy and technology trade-offs. They also include environmental and development challenges interlinked through complex interactions between human society and the natural environment. Assessment needs included interlinkages between environmental degradation and issues such as transport, poverty, demographic pressure, trade and gender. Such assessments are needed to underpin the integration of environmental concerns into sectoral plans and policies, and to assess their social and economic implications. The design meeting also noted that the Science Initiative emphasized that any scientifically based interlinkages assessment must be focused, must address the key questions, must be related to the needs of Governments and should be developed in cooperation with the multilateral environmental agreements and other relevant actors. Although some attempts have been made to assess the interlinkages between environment and development, and between the various environmental challenges, greater attention needs to be given to such considerations in the Global Environment Outlook process.

48. The initial design meeting developed a first draft outline of the fourth Global Environment Outlook. It was recommended that the report of the Brundtland Commission, *Our Common Future* (1987), should serve as a starting point for the assessment. It was suggested that the fourth Global Environment Outlook should relate to the existing environmental goals and targets and assess to what extent those targets have been met. In doing so, it should make use of an indicator-based approach. In the fourth Global Environment Outlook, the DPSIR analytical framework should be enriched by other approaches, such as vulnerability considerations. The fourth Global Environment Outlook needed to present an overview of the state of and trends in the environment as they relate to the major environmental challenges seen from a global perspective in a manner which clearly reflects the subglobal characteristics of the challenges but puts them in a global context. The design meeting reiterated the need to assess interlinkages between the challenges and also the priority cross-cutting issues, possibly in new sections of the report. Emphasis needed to be placed on consequences of environmental change for ecosystem services and vulnerable groups. The fourth Global Environment Outlook should maintain the outlook section. Assessment of response options needed to be both an

integral part of the various sections and also to be treated within an overarching perspective. The design meeting confirmed the need for the fourth Global Environment Outlook to be strengthened in accordance with the recommendations of the Science Initiative.

2. The outcome of the regional ad hoc expert consultations

49. For the first time in a comprehensive Global Environment Outlook report cycle, a series of ad hoc regional expert consultations were held, in Africa, Asia and the Pacific, Europe, Latin America and the Caribbean, North America and West Asia. The consultations based their deliberations on documentation of the Global Environment Outlook process, the Science Initiative and the initial design meeting.

50. Many regions suggested that the fourth Global Environment Outlook should be strongly action-oriented, identifying how to achieve environmental goals and targets. The report should focus on providing policy-makers with a policy toolkit. A new section was recommended on policy analysis which would show successful examples of environmental management which could be replicated. It was felt that the focus should be on strengthening methods and techniques for translating scientific data and analysis into policy-relevant information which can be used by Global Environment Outlook target audiences.

51. The idea of a new section on cross-cutting issues was supported. A number of cross-cutting issues, related to social well-being; trade and economics; health; water; monitoring and reporting; governance and civil society; sectoral issues; technology; and transboundary issues were identified, together with a list of criteria for identifying priority issues.

52. Participants in the regional meetings felt that the strength of the Global Environment Outlook reports is that they put regional environmental issues and the environmental aspects of issues such as trade, investment, development aid, migration, energy and climate change in a global context.

53. The regional consultations supported the concept that the fourth Global Environment Outlook should build on GEO-3, and on other Global Environment Outlook products such as the Global Environment Outlook Yearbooks, regional assessments and technical reports. It should also draw on other assessments, such as the Millennium Ecosystem Assessment, seeking synergy while avoiding duplication. It was felt that stakeholders should be further involved in the production of the Global Environment Outlook products, to encourage ownership and improve relevance and utility, and that capacity-building efforts should be continued.

54. To ensure wider dissemination of the fourth Global Environment Outlook, participants in the regional consultations recommended a range of strategies, including various products, such as summaries, fact sheets, the involvement of media and the wider use of the Internet for reaching various audiences, including policy-makers, the scientific community, the private sector, civil society and youth.

3. The outcome of the fourth Global Environment Outlook design meeting

55. Following the ad hoc regional expert consultations, a design meeting was held in Nanyuki, Kenya in November 2004 to consider how the outcome of the consultative process so far could be translated into a road map, outline and elements for an implementation plan for the fourth Global Environment Outlook. Over 70 representatives from Global Environment Outlook collaborating centres, UNEP and other United Nations organizations attended the meeting.

56. The meeting developed a draft overall storyline and recommendations for the scope, key questions to be answered and process for the various sections of the fourth Global Environment Outlook. The outcome is reflected in the proposed objectives of the fourth Global Environment Outlook below and in chapter IV, on the proposed overarching outline, scope and key questions to be answered by the fourth Global Environment Outlook.

57. The meeting also considered a mechanism for ensuring continuity and interlinkages between chapters; outreach; strengthening of the scientific advisory aspects of the process; and the peer review process. The outcomes of those deliberations are taken into account in the proposed process for the preparation of the fourth Global Environment Outlook.

4. The outcome of expert and partner consultations

58. In parallel with the main design meetings, a series of more informal expert and partner consultations have taken place. Several other international organizations have already expressed their willingness to participate more actively in the Global Environment Outlook process, including the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Meteorological Organization (WMO), the Organisation for Economic Co-operation and Development (OECD) and the European Environment Agency. Prospective partners have been invited to participate in the design phase for the fourth Global Environment Outlook so that the most appropriate areas for collaboration can be identified and agreed.

59. The production of the fourth Global Environment Outlook will coincide with a number of other assessments, including the fourth assessment report of the Intergovernmental Panel on Climate Change (IPCC), the International Assessment on Agricultural Science and Technology for Development (IAASTD) and the second OECD Environmental Outlook, tentatively scheduled for publication in late 2007. There is a need to explore how those processes can support each other. For example, the new OECD Outlook will develop a baseline projection for economic driving forces. OECD is prepared to make available its baseline projections of economic and sectoral driving forces and the state of the environment to 2030, including key macroeconomic variables, trade flows and sectoral developments, for use in the fourth Global Environment Outlook. UNEP will, as requested by OECD, make available the Global Environment Outlook core data set to complement the existing OECD data on the global component of the Outlook.

60. The Global Environment Outlook Data Working Group will respond directly to the identified data and indicator needs of the fourth Global Environment Outlook. The Policy and Scenario Working Groups have resumed their activities after the completion of GEO-3 and members are now engaged in preparing detailed proposals on how their respective areas should be handled for the fourth Global Environment Outlook. An expert group meeting on vulnerability and other cross-cutting issues is planned for the first quarter of 2005 to identify options for incorporating such issues in the fourth Global Environment Outlook assessment. The Capacity-building Working Group has met to review Global Environment Outlook capacity-building needs.

61. Informal consultations have also been held on how to best address interlinkages. An interlinkages section in the fourth Global Environment Outlook would be a follow-up to the jointly issued report *Protecting our Planet – Securing our Future* (1998), which assessed the linkages between global environmental issues and human needs. It would also relate to the Global Environment Facility's Scientific and Technical Advisory Panel's *Interlinkages between Biodiversity, Climate Change, Land Degradation and International Waters – A report focusing on the needs of the GEF* (in press). UNEP would, in the preparation of the interlinkages section, mobilize expertise from existing thematic assessment processes.

5. The global intergovernmental and multi-stakeholder consultations

62. For the first time in a comprehensive Global Environment Outlook report cycle, the design of the assessment will be considered by the present global intergovernmental and multi-stakeholder consultation in follow-up to the intergovernmental consultation on strengthening the scientific base of UNEP held in January 2004. The consultation has been made possible with the support of the Governments of the Netherlands and Norway. The purpose of the global consultation on the fourth Global Environment Outlook is to inform Governments and stakeholders on the outcome of the regional consultations and other preparatory work related to the design of the fourth Global Environment Outlook and to ensure that the assessment is as responsive as possible to policy-makers' needs. The consultation represents the culmination of the design process for the fourth Global Environment Outlook. It is envisaged that the consultation will present the Executive Director with a statement reflecting the conclusions and recommendations on the fourth Global Environment Outlook process, objectives, scope, overarching outline and key questions to be considered. Those conclusions and recommendations will serve as key guidance to the experts undertaking the assessment.

B. Proposed objective of the fourth Global Environment Outlook

63. The proposed objective of the fourth Global Environment Outlook is to provide, for 2007, a global, comprehensive, reliable and scientifically credible, policy-relevant and legitimate up-to-date

assessment of and outlook for the interaction between environment and society. More specifically, it will:

- (a) Prepare an overview assessment of the state of, trends in and emerging issues in the major environmental challenges, seen from a global perspective, in a manner which clearly reflects their subglobal characteristics, inter alia by assessing human driving forces and pressures on the environment; the primary and secondary environmental impacts of such pressures; the consequences of environmental change on ecosystem services and human well-being; and the effectiveness of policy responses;
- (b) Assess the interlinkages between the major environmental challenges and their consequences for policy and technology responses and trade-offs;
- (c) Assess selected, major cross-cutting issues relating to how environment can contribute to the major development goals and targets and how environmental degradation can impede progress towards those targets, with a focus on vulnerable groups and locations;
- (d) Develop a set of plausible short-term (up to 2015) and medium-term (up to 2050) scenarios of the major societal pathways and their consequences for the interaction between environment and society at the global level with regional examples;
- (e) Assess the state of knowledge regarding the effectiveness of various approaches to overarching environmental policies, in particular green accounting; mainstreaming environmental concerns into the plans and policies of social and economic sectors; and enforcement of and compliance with multilateral environmental agreements.

C. The proposed process for preparing the fourth Global Environment Outlook

64. The aim of the fourth Global Environment Outlook production process is to mobilize the best scientific expertise in a geographically and gender-balanced way for interacting with policy-makers and for analysing critical environmental issues through an open and transparent, multiscaled and multidisciplinary integrated assessment process of high legitimacy, credibility, and utility.

65. The conclusions and recommendations of the Global Intergovernmental and Multi-stakeholder Consultation on the fourth Global Environment Outlook's objective, process, scope, overarching outline and key questions to be considered will serve as key guidance to the experts involved in undertaking the assessment.

1. Establishment of expert working groups

66. To ensure scientific credibility and independence, the assessment will be carried out by expert working groups assigned to assess a specific set of issues within the overall outline of the fourth Global Environment Outlook. The groups would typically consist of coordinating authors, lead authors and contributors, including representatives of collaborating centres. Experts would be chosen on the basis of merit, paying due attention to the need to ensure a balanced geographical and gender representation of experts wherever possible. Working-group outputs, typically pyramidal in structure, ranging from technical reports to summaries for policy-makers, would be subject an extensive expert and Government peer review before their consideration by the final Global Intergovernmental and Multi-stakeholder Consultation.

67. The Executive Director will prepare a generic fourth Global Environment Outlook guideline for the assessment based on the outcome of the consultative design process. The guideline will be designed to ensure that the expert part of the assessment process is independent and credible and that the experts are given the flexibility to respond to the key questions in accordance with the latest state of scientific knowledge. The guideline will include:

- (a) The conclusions and recommendations of the Global Intergovernmental and Multi-Stakeholder Consultations;
- (b) A storyline based on the outcome of the design process;
- (c) An overarching conceptual approach for assessing the interaction between environment and society based on the driving force-pressure-state-impact-response (DPSIR) framework and complemented with ecosystem service and vulnerability approaches;

- (d) Procedures for nomination and selection of authors and collaborating centres;
- (e) Procedures for use of data, peer reviewed and non peer reviewed literature and traditional and indigenous knowledge;
- (f) Procedures for undertaking the extensive expert and Government peer review of the assessment;
- (g) Editorial guidelines.

68. The expert working groups will be supported by core data sets in the Global Environment Outlook Data Portal, the Data Working Group, and through cooperation with other agencies, including OECD, FAO, UNESCO, the United Nations University (UNU), WMO, the World Health Organization (WHO), the World Bank, the International Council for Science (ICSU) and the Global Observing Systems of Systems (GOSS).

2. Establishment of a coordination committee

69. A regionally and gender-balanced coordination committee will be established consisting of co-chairs, coordinating authors, representatives of Global Environment Outlook collaborating centres and the Executive Director. The panel will provide scientific guidance, oversight and coordination of the fourth Global Environment Outlook assessment process. More specifically, it will be responsible for:

- (a) Approving fourth Global Environment Outlook guidelines;
- (b) Identifying authors and collaborating centres;
- (c) Providing oversight of the assessment process, including the peer review;
- (d) Ensuring correctness of links and consistency between the various sections and chapters;
- (e) Preparing the summary for decision-makers;
- (f) Approving the final draft;
- (g) Advising the Executive Director on any matter pertaining to the fourth Global Environment Outlook process, including capacity-building.

3. Final intergovernmental and multi-stakeholder consultations

70. Subject to the availability of extrabudgetary funds, a round of Regional ad-hoc stakeholder consultations will be held in parallel with the peer review to engage stakeholders and Governments. Also subject to the availability of extrabudgetary funds, a global consultation will be convened after the peer review. The consultation will consider the findings of the assessment, in particular its summary for decision-makers. The Executive Director will forward the outcome of the consultation and the fourth Global Environment Outlook to the Governing Council/Global Ministerial Environment Forum for follow-up.

4. Proposed schedule for the fourth Global Environment Outlook process

71. The proposed schedule for the fourth Global Environment Outlook process is as follows:

- (a) Global Intergovernmental and Multi-stakeholder Consultation to consider the fourth Global Environment Outlook's objective, process, scope, overarching outline and key questions to be considered, February 2005;
- (b) First constituting meeting of the Coordination Committee, to consider the fourth Global Environment Outlook guideline, the overall implementation plan, identification of experts and linkages between sections and chapters, April 2005;
- (c) First round of expert working group meetings for preparation of the first internal draft, May–July 2005;
- (d) Second meeting of the Coordination Committee, to consider progress and linkages between chapters, October 2005;

(e) Second round of expert working group meetings for finalization of the draft for the first round of peer review, January–March 2006;

(f) Third meeting of the Coordination Committee and joint lead authors' meeting to consider the first draft and linkages between chapters, May 2006;

(g) Incorporation of comments and preparation of the draft for peer review, June–July 2006;

(h) Expert and Government peer review, and regional ad hoc stakeholders' consultations (subject to availability of funds), July–October 2006;

(i) Fourth meeting of the Coordination Committee, to consider the outcome of the peer review and consultation and the outline of the summary for policy-makers, November 2006;

(j) Incorporation of review comments, preparation of final drafts for editing and preparation of the first draft of the summary for policy-makers, November 2006–January 2007;

(k) Fifth meeting of the Coordination Committee, to approve the final draft and discuss the first draft of the summary for policy-makers, February 2007;

(l) Editing, layout and printing of the main report and finalization of the draft summary for policy-makers for the consideration of the global consultation, March–August 2007;

(m) Global Intergovernmental and Multi-stakeholder Consultation, to consider the findings of the main report and the summary for policy-makers (subject to the availability of extrabudgetary resources), September 2007;

(n) *GEO-4* and the outcome of the global consultations to be presented by the Executive Director to the Governing Council/Global Ministerial Environment Forum.

D. Capacity-building and developing-country participation in the fourth Global Environment Outlook

72. Targeted institutional capacity-building will be closely linked to the hands-on capacity-building achieved through the active participation of developing country experts in the fourth Global Environment Outlook. It will be supported by:

(a) Upgrading the Global Environment Outlook Data Portal;

(b) The development and promotion of the use of integrated assessment tools and methodologies, fourth Global Environment Outlook guidelines, training modules and manuals;

(c) Training and workshops;

(d) Networking and partnerships;

(e) Global Environment Outlook fellowships awarded to students/scholars to work with the Global Environment Outlook process.

73. The Capacity-building Working Group will support capacity-building during the production of the fourth Global Environment Outlook, and specific capacity-building modules will be developed along with the development of the content and structure of the assessment. Capacity-building of potential users, a bigger and more widespread target, is also being considered, for example, by promoting wider use of the Global Environment Outlook Data Portal. Examples will be used to ensure consistency in the writing of scenarios and policy analyses by collaborating centres, and to enhance understanding of methodologies and results.

74. Continued extrabudgetary financial support is needed to sustain the capacity-building associated with the fourth Global Environment Outlook and with other Global Environment Outlook modules, especially the subglobal assessments.

E. Outreach

75. The key to ensuring that the fourth Global Environment Outlook is policy-relevant and legitimate is to strengthen the interaction between science and policy-making. A well-functioning interaction will help define policy challenges and opportunities and also research priorities. Also, there is a need to strengthen ownership of the report by involving the media and the private sector, and by

connecting to global networks. Strategies are needed to target differing groups with specific products and formats, including extracts, briefs, information kits and gaming on the Global Environment Outlook web site. While policy-makers form the main target audience, the role of civil society in awareness-raising should be kept in mind.

76. An Outreach Working Group, with specialists from the fields of marketing and communication, science, education and technology will be formed. The terms of reference of the Outreach Working Group will include:

- (a) Developing an audience-driven communications strategy, including a strategy for capacity-building at the subglobal level;
- (b) Developing and using improved monitoring and evaluation tools;
- (c) Considering accessibility of the Global Environment Outlook information, including in terms of format and languages;
- (d) Branding the Global Environment Outlook logo and name, franchising, promotion and distribution;
- (e) Promoting e-learning through links to youth programmes and university courses, and through a Global Environment Outlook kit;
- (f) Working with the media.

F. Financial and administrative consequences

77. The fourth Global Environment Outlook will be supported by staff and financial resources from the Environment Fund in accordance with the biennial programmes of work for 2004–2005 and 2006–2007. Also, extrabudgetary contributions are being sought to facilitate developing countries' participation, for the global intergovernmental and multi-stakeholder consultation and for capacity-building for the fourth Global Environment Outlook and the subglobal outlooks which will support the global endeavour. In addition, the Executive Director will call upon Governments to provide in-kind support for the participation of national experts and collaborating centres. Activities will be scaled in accordance with the availability of funds.

IV. The scope and overall outline of and key questions for the fourth Global Environmental Outlook

A. Summary for policy-makers

78. The summary for policy-makers will present issues identified in the fourth Global Environment Outlook which are of particular interest to the Governing Council/Global Ministerial Environment Forum of UNEP and to policy-makers at large. It will highlight policy-relevant issues and findings relating to the interaction between environment and society where there is a need for further action. In presenting the findings, the summary will be policy-relevant without being policy-prescriptive. The summary will relate the findings to the environmental aspects of the internationally agreed development goals, including those contained in the Millennium Declaration. It will emphasize that the environment provides society with a range of goods and services which are essential for human survival, well being, cultural diversity and economic prosperity and will highlight how human-induced global environmental changes are affecting our development opportunities.

B. Introduction

1. Overall scope and orientation

79. The introductory section places the fourth Global Environment Outlook report in the context of the development of international environmental governance and its relation to the internationally agreed development goals and targets since the World Commission on Sustainable Development (the Brundtland Commission, 1987) while also looking towards 2050 and beyond. It also introduces the aim, scope and key focus of the report. The section explains the participatory, consultative, and scientifically rigorous Global Environment Outlook assessment process and highlights changes which have been introduced during the fourth Global Environment Outlook, such as strengthening the scientific base of the process. It highlights new perspectives for framing the fourth Global Environment Outlook within

its five-year time frame and for establishing the Global Environment Outlook Yearbook and the regional and other subglobal environment outlooks. The introductory section also outlines the structure of the report and indicates how each of the other chapters contributes to the overall presentation of assessment findings.

2. Key questions to be considered

80. The key questions to be considered are:

- (a) Where do we stand in the evolution of ideas and concepts on the environmental dimensions of sustainable development?
- (b) How does the fourth Global Environment Outlook deal with the multidimensional and multiscale nature of the interaction between environment and society?
- (c) Conceptually, how does the environment contribute to development, human well-being and prosperity and who are vulnerable to environmental change?
- (d) What has been the outcome of the recommendations of the Brundtland Commission and the UNEP *Environmental Perspective to the Year 2000 and Beyond*?

3. Partners

81. Draft developed by UNEP in consultation with other United Nations bodies, secretariats of multilateral environmental agreements, selected Global Environment Outlook collaborating centres and policy experts for the consideration of the fourth Global Environment Outlook Coordination Committee.

C. State of and trends in the global environment: an overview

1. Overall scope and orientation

82. The section presents an overview assessment of the state of, trends in and emerging issues in the major environmental challenges seen from a global perspective in a manner which clearly reflects their subglobal characteristics and differences and distinguishes the global issues from the subglobal. It would cover the following major bio- and geophysical environmental issues: freshwater; coastal and marine areas; forest; drylands; urban areas; polar areas; climate change; the ozone layer; and tropospheric and local air quality. The section would also cover some key cross-cutting issues such as biodiversity and chemicals, and also the nitrogen cycle, which was identified in GEO-3 and in the Global Environment Outlook Yearbook 2003 as an emerging issue.

83. The assessment will relate to internationally agreed environmental goals and targets and will make maximum use of indicators. Emphasis will be placed on the status of and trends in ecosystems and the geophysical environment and their contribution to human well-being. The section assesses the relevant parts of the interaction between environment and society, including human driving forces and pressures on the environment; the primary and secondary environmental impacts of such pressures; the consequences of environmental change on ecosystem services and human well-being; and the effectiveness of policy responses.

2. Key questions to be considered

84. The key questions to be considered are:

- (a) What are the current internationally agreed biophysical, institutional and governance goals, targets and standards for environmental governance relating to the major environmental challenges and what indicators and data are available to measure progress towards them?
- (b) What are the current status of and trends in environmental change and the interaction between environment and society seen in relation to the internationally agreed environmental goals and targets?
- (c) What are the drivers of environmental change and alterations in environmental services, how do they affect human well-being and prosperity, and which groups and what areas are vulnerable to those changes?
- (d) How is the environment contributing to the implementation of the internationally agreed development goals, including those contained in the Millennium Declaration, in areas such as human health, food security, poverty alleviation, energy and disaster-preparedness?

- (e) What policies are in place and what action is being taken? How effective are those responses and what is the cost of inaction?

3. Partners

85. Assessments to be undertaken by geographically, disciplinarily and gender-balanced expert working groups for each thematic area supported as relevant by Global Environment Outlook collaborating centres. A particular effort will be made to ensure that each working group considers both global and subglobal perspectives. Experts will be chosen from relevant scientific initiatives, assessment processes, collaborating centres, United Nations bodies and secretariats of multilateral environmental agreements. Meetings of working groups will to the extent possible be convened back-to-back with related initiatives.

D. Interlinkages between major environmental challenges

1. Overall scope and orientation

86. The section presents an assessment of the interlinkages between the major environmental challenges and their consequences for policy and technology response options and trade-offs. The challenges are interlinked through significant systemic interactions and feedbacks, driving forces and policy and technology synergies and trade-offs. For example, global warming impacts ozone depletion. Land cover and biodiversity changes have impacts on climate, which in turn affect water availability and agriculture. The problems are often caused by the same driving forces. The assessment will analyse the linkages between the various environmental challenges such as biodiversity, climate change, land degradation, freshwater, the coastal and marine environment, local and regional air quality, ozone depletion and chemicals. It will be based on existing assessments and will closely relate to and build upon the findings in section C above. The section will assess tools and interventions for addressing interlinkages. It will analyse opportunities for technology and policy interventions for both mitigating environmental change and adapting to environmental change – evaluating which are “win-win” solutions across issues and which are not. It would also assess how one set of environmental problems may be addressed in ways which contribute to addressing other problems also.

2. Key questions to be considered

87. The key questions to be considered are:

- (a) What are the key interlinkages between various forms of environmental change and what forms of change drive other changes?
- (b) What is the probability of the increasingly complex human pressures on the environment leading to new, combined, synergetic, cross-cutting or system-wide environmental change, such as the overstepping of biophysical thresholds, which may lead to non-linear, sudden and unexpected effects?
- (c) How are the human drivers, activities and impacts interlinked and to what extent can they be de-linked in order to change the human-environment interaction if need be?
- (d) How are the responses and interventions currently linked and to what extent can they be de-linked or regrouped in order to change the human-environment interaction if need be?
- (e) What are the implications of interlinkages on enforcement and compliance regimes under the various multilateral environmental agreements?

3. Partners

88. The assessment will be carried out by an expert working group and will build on the findings of and mobilize expertise from past and existing initiatives. Those include the report Protecting Our Planet, Securing our Future (UNEP 1998), the assessments related to the depletion of the ozone layer, the Intergovernmental Panel on Climate Change (IPCC), the Global International Water Assessment (GIWA), the Millennium Ecosystem Assessment, and interlinkages work undertaken under the auspices of the Convention on Biological Diversity, the United Nations University and the Scientific and Technical Panel of the Global Environment Facility.

E. Challenges and opportunities

1. Overall scope and orientation

89. Drawing on the findings of sections C and D, section E analyses complex, cross-cutting issues at a higher level of abstraction to present an assessment of “unfinished business” as well as emerging challenges. It highlights the areas in which there are significant problems and examines opportunities for addressing them. It will assess selected major cross-cutting issues relating to how environment can contribute to the major development goals and targets and how environmental degradation can impede progress towards those targets, with a focus on vulnerable groups and areas. The overall cross-cutting issues to be assessed include poverty, health, institutions and governance, science and technology and trade.

2. Key questions to be considered

90. The key questions to be considered are:

(a) From reference points such as the Brundtland Commission and Agenda 21, what was the vision? Where did we want to be in 2007? How far have we got? Are we moving in the right direction? How did we get here?

(b) Where do we stand on the environmental contribution to the implementation of the internationally agreed development goals, including those contained in the Millennium Declaration, and in particular Millennium Development Goal 7 on ensuring environmental sustainability?

(c) Do the current environmental assessment landscape and related indicators adequately provide the knowledge base for the environmental contribution to the Millennium Development Goals?

(d) Does environmental governance adequately take into account the links between environment and cross-cutting challenges such as poverty, health, institutions and governance, science and technology and trade?

(e) Are existing institutional mechanisms adequate to cope with the linkages between the environment and those cross-cutting challenges?

(f) What macropolicies are in place to address the coping and adaptation capacity needs of groups and areas vulnerable to environmental change?

3. Partners

91. The assessment will be carried out by an expert working group including selected Global Environment Outlook collaborating centres and in consultation with secretariats of multilateral environmental agreements and other stakeholder groups.

F. Global and subglobal outlook

1. Overall scope and orientation

92. Section F forms the main outlook component of the fourth Global Environment Outlook. Using the content and findings of sections C, D and E as a starting point, it describes a number of plausible short-term (up to 2015), medium-term (up to 2050) and some long-term (up to 2100) scenarios for major societal pathways. It examines their consequences for the interaction between environment and society at the global level with regional examples. Projections are made, under each scenario, of future environmental trends and their implications for human well-being and economic development. Considerations during the development of the scenarios will include references to the Millennium Development Goals, the Plan of Implementation from the World Summit on Sustainable Development, the Brundtland Commission and a reality check against vision and expectations. Likely synergies, conflicting interests and trade-offs between implementation of environmental measures will be taken into account. Potential benefits and conflicts with socio-economic developments, economic goals and investments will also be considered.

2. Key questions to be considered

93. The key questions to be considered are:

(a) What are the likely consequences of environmental policies and actions today for the future?

- (b) What are the consequences of various policy trends for the environment?
- (c) What are the likely consequences of various policy options and choices for the environment under different scenarios?
- (d) What are the likely impacts or effects of promising opportunities for policy innovations on the interaction between environment and society?
- (e) How would different policy and technology trade-offs between various environmental challenges and between environment and development affect the interaction between environment and society in the future?

3. Partners

94. The outlook scenarios will be developed by an expert working group of selected collaborating centres through an interactive, multi-stakeholder process at global and regional levels. The work will be based on the experience from previous Global Environment Outlooks and also the Millennium Ecosystem Assessment, with inputs from partners including, in particular, social and economic baseline data from OECD.

G. Environment for prosperity

1. Overall scope and orientation

95. The final section of the report synthesises the overall policy-relevant findings and conclusions of the fourth Global Environment Outlook assessment and assesses the state of knowledge regarding the effectiveness of various approaches to overarching environmental policies. Increasing demands are being placed on environmental authorities to work together with the sectors, to provide them with timely and credible environmental information, to assist in identifying environmental challenges and their solutions and provide tools for overarching environmental planning and accounting. The challenges, mechanisms and institutions for integrating environmental concerns into the plans and policies of relevant national sectoral authorities will be assessed. The section will present policy options in the form of tools for mainstreaming the environment into economic sectors. The section will assess how the commitments under the various environmental instruments can be dealt with in a coordinated manner and mainstreamed into plans and policies for economic sectors. It will examine decision-analytical tools and techniques and show how to select the tools, will describe them in a user-friendly manner and will evaluate some case studies. The current state of knowledge concerning the use of green accounting and macroecological planning as a parallel to macroeconomic planning will be assessed. Case studies will be considered to illustrate how such tools can be applied.

2. Key questions to be considered

96. The key questions to be considered are:

- (a) What are the main conclusions and overarching policy findings of the fourth Global Environment Outlook, and is there a need to adjust our expectations and revisit existing goals and targets?
- (b) How can the environment sector most effectively ensure enforcement of and compliance with multilateral environmental agreements?
- (c) What are the financial, institutional, practical aspects of promoting or neglecting promising policies, strategies and response measures for environmental management?
- (d) What mechanisms exist at national level for green accounting and promoting mainstreaming of environmental concerns into social and sectoral plans and policies, including contributing to sustainable-development and poverty-reduction strategies?
- (e) How do we address the need for science, data, indicators, monitoring and assessment to measure progress towards the environment dimension of the Millennium Development Goals?

3. Partners

97. The section will be developed by an expert working group of policy experts, economists and practitioners from national environment ministries and agencies in consultation with United Nations bodies, secretariats of multilateral environmental agreements, selected Global Environment Outlook collaborating centres and major stakeholder groups.

V. Conclusions

98. The intergovernmental consultation on strengthening the scientific base of UNEP commended the bottom-up and consultative approach used in Global Environment Outlook, but also called for a further strengthening of Global Environment Outlook and other UNEP assessments within the context of a coherent assessment framework. The first three Global Environment Outlooks characterized a unique approach to global assessment of the environment by linking process and product. An increasing number of people, countries and institutions are now using the Global Environment Outlook approach for integrated environmental assessment. The fourth Global Environment Outlook will build on past experiences while responding to the call for a further strengthening of the process. The scientific base of the process will be strengthened through the establishment of expert working groups to undertake the assessment, data support, a Coordination Committee to oversee the process and an in-depth expert and Government peer review process.

99. For the first time in a comprehensive Global Environment Outlook report cycle, the design of the assessment will be considered by a Global Intergovernmental and Multi-Stakeholder Consultation. The Consultation is based on the experience of similar meetings, including the intergovernmental consultation on strengthening the scientific base of UNEP held in January 2004. It is convened in order to ensure that the assessment is as responsive and relevant to policy-makers' needs as possible. The consultation represents the culmination of the design process for the fourth Global Environment Outlook. It is envisaged that the consultation will present the Executive Director with a clear set of conclusions and recommendations on the fourth Global Environment Outlook's objective, process, scope, overarching outline and key questions to be considered. Those conclusions and recommendations will serve as the key guidance to the experts involved in undertaking the assessment. The Executive Director recommends that Governments and stakeholders should agree on a set of conclusions and recommendations based on the suggestions outlined in Chapter I and play an active part in the global consultation in order to:

- (a) Help define the process, scope and broad outline of the fourth Global Environment Outlook and the key questions which should be considered;
- (b) Invite financial support for the fourth Global Environment Outlook process, including in-kind support for the participation of national scientific experts and institutions in the processes;
- (c) Consider how to support the Governing Council/Global Ministerial Environment Forum in ensuring that emerging environmental problems of wide international significance receive appropriate and adequate consideration by Governments.

100. The design of the fourth Global Environment Outlook is but one step in an incremental and modular approach to strengthening the Global Environment Outlook process and the scientific base of UNEP. Other steps include a further strengthening of and support to regional and subregional environmental outlook assessments and also thematic assessments. Efforts are also under way to strengthen data availability, early warning, capacity-building and networking through a similar modular approach. If developed within a coherent conceptual framework, such as the proposed "Environment Watch" framework, those modules would form an increasingly powerful and coherent knowledge base linked to the appropriate decision-making cycles.