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**Assessment, monitoring and early warning:  
state of the environment**

**State of the environment and contribution of the United Nations  
Environment Programme to addressing substantive  
environmental challenges**

**Report of the Executive Director**

*Summary*

The present report addresses several key aspects of the programme of work of the United Nations Environment Programme (UNEP) in keeping under review the world environmental situation and the multifaceted environmental challenges that face the organization in addressing that important mandate. Those challenges are described in detail in seven related documents that are referred to in the present document. In addition, the *GEO Year Book 2004*, described in document UNEP/GC.23/INF/2, outlines the most recent challenges that have garnered international scientific attention in the past year. While it is incumbent upon UNEP to look back and report to the Governing Council on past activities and accomplishments, it also bears the responsibility for looking forward at new and innovative ways of addressing the substantive challenge of reporting on the state of our planet. Following the positive outcome of multi-stakeholder consultations on strengthening the scientific base of UNEP mandated by Governing Council decision 22/1 I A and the recommendations emanating from the intergovernmental consultation thereon, the present document proposes a new, dynamic framework for better addressing that substantive challenge. The current session of the Governing Council/Global Ministerial Environment Forum provides a rare opportunity to put in place an innovative framework that will assess the environmental situation of the world and provide policy-relevant recommendations to decision makers at all levels.

\* UNEP/GC.23/1.

## I. Suggested action by the Governing Council

1. The Governing Council may wish to consider the adoption of a decision along the lines suggested below:

*The Governing Council,*

*Pursuing* its responsibility, 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,

*Recalling* General Assembly resolutions 44/224 of 22 December 1989, 46/217 of 20 December 1991, 48/192 of 21 December 1993, 53/242 of 28 July 1999, 57/251 of 20 December 2002 and 58/209 of 23 December 2003, on, among other things, international cooperation in the monitoring, assessment and anticipation of environmental threats,

*Recalling also* the Malmö Ministerial Declaration of 31 May 2000<sup>1</sup> and its decisions SS.VII/1 of 15 February 2002, 22/1 I A and 22/17 I of 7 February 2003 and SS.VIII/1 of 31 March 2004,

*Recalling further* the Plan of Implementation of the World Summit on Sustainable Development, adopted in Johannesburg on 4 September 2002, particularly paragraphs 103 through 106,

*Welcoming* the ten-year implementation plan for a global earth observation system of systems adopted at the third Earth Observation Summit on 16 February 2005 in Brussels,

*Recognizing* the critical role of knowledge in mainstreaming environmental issues and considerations into decision-making processes across all relevant social and economic sectors,

*Recognizing also* the many existing networks for data and information collection, management, exchange and dissemination and the rapidly evolving information and communication technologies and the need to maximize their potential for providing information for decision-making,

1. *Acknowledges* the findings of the *Global Environment Outlook Year Book 2004*;
2. *Takes note with appreciation* of the evaluation report of the Executive Director on the conclusions and recommendations contained in the report of the intergovernmental consultation on strengthening the scientific base of the United Nations Environment Programme held in January 2004;
3. *Welcomes* the report of the Executive Director on activities and plans for strengthening the scientific base of the United Nations Environment Programme<sup>2</sup>, including:
  - (a) Support for the ten-year implementation plan for a global earth observation system of systems, including the possibility of contributing to a secretariat for the governing body of the global earth observation system of systems, jointly with other intergovernmental organizations such as the World Meteorological Organization;
  - (b) Harmonization of existing United Nations Environment Programme networks for data and information management through consultations with Governments, the Environmental Management Group, the United Nations system-wide Earthwatch mechanism and relevant international organizations;
  - (c) The *Global Environment Outlook Year Book*, the fourth *Global Environment Outlook* and sub-global assessments, including the *Global Environment Outlook* for cities initiative;

<sup>1</sup> Decision SS.VI/1, annex.

<sup>2</sup> UNEP/GC.23/3

(d) Thematic assessments, including the Millennium Ecosystem Assessment and Global International Waters Assessment and the inter-agency initiative on the International Assessment of Agricultural Science and Technology for Development;

(e) Assistance to developing countries and countries with economies in transition through capacity-building and technology support in undertaking national environmental networking, monitoring, data collection and management, compilation of statistics and indicators, assessment, and early warning processes and in participating in such efforts at the international level;

4. *Recognizes* that the relatively limited availability of environmental data and information represents a serious constraint on the ability of the international environmental governance structure to monitor and make progress towards internationally agreed goals and targets and that this must be addressed by renewed cooperative efforts;

5. *Recognizes* also the need to further strengthen the scientific base of the United Nations Environment Programme, and acknowledges that many of the recommendations of the intergovernmental consultation on strengthening the scientific base of the United Nations Environment Programme, held in January 2004, require additional efforts that cannot be achieved within the current budget and staffing allocations of the programme of work and the Environment Fund;

6. *Endorses* the plan of the Executive Director<sup>3</sup> to develop, through continued intergovernmental and multi-stakeholder consultations, an environment-watch framework, the goals of which will be:

(a) To promote interaction between science and policy-making for addressing gaps and needs and setting priorities for processes related to keeping under review the world environmental situation in order to ensure that emerging environmental problems of broad international significance receive appropriate and adequate consideration by Governments;

(b) To apply a dynamic set of collaborative processes for networking, monitoring, data collection and management, compilation of statistics and indicators, assessment, and early warning in response to policy needs at different spatial scales;

(c) To strengthen the credibility, legitimacy and relevance of such processes and promote the use of timely, accurate, relevant and reliable data and information, including local and indigenous knowledge;

(d) To facilitate access to and development of appropriate tools and methodologies, including environmental indicators and statistics;

(e) To promote capacity-building in developing countries and countries with economies in transition, inter alia, through the intergovernmental strategic plan for technology support and capacity-building; and

(f) To facilitate monitoring, evaluation and periodic stocktaking of processes and activities relevant to the framework;

7. *Calls upon* Governments:

(a) To appoint a national focal point for the development of an environment-watch framework and communicate this to the Executive Director by a date set by him; and

(b) To revitalize and streamline existing networking structures and partnerships, particularly at the national level, so that all relevant institutions are engaged in the provision of data and information for environmental reporting and dissemination;

8. *Authorizes* the Executive Director to establish a trust fund for processes and activities under an environment-watch framework, for coordination of processes under the framework, including support to the participation of developing countries and countries with economies in transition in such processes and activities;

9. *Invites* developed countries and developing countries and countries with economies in transition in a position to do so and other partners active in the field of development, to provide funding, including through in-kind support for the participation of

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<sup>3</sup> UNEP/GC.23/3

national scientific experts and institutions, to further strengthen the scientific base of the United Nations Environment Programme;

10. *Decides* that the Council shall consider the modalities of the environment-watch framework based on a report by the Executive Director at its ninth special session.

## **II. State of the environment: an overview**

### **A. Keeping the environment under review**

2. The environment provides society with a range of goods and services that are essential for human survival, well-being, cultural diversity and economic prosperity. The increasing pace of human-induced environmental change is, however, altering the ability of the environment to provide those services in ways that do not impede progress towards development. Through its mandate of keeping under review the world environmental situation, UNEP has leveraged support for a wide-ranging set of collaborative processes for collection, management, compilation, analysis and sharing of data and statistics, monitoring, networking, indicators, assessment, and early warning at different spatial scales. In spite of those efforts, the complex interactions between human society and environment are still far from fully understood. The relatively limited availability of environmental data and information represents a serious constraint to the ability of the international environmental governance structure both to monitor the state of the environment and to make progress towards internationally agreed goals and targets.

3. The challenge requires renewed efforts by the international community to promote concerted action by the many stakeholders involved, in particular through strengthening capacity-building and the interface between science and policy. The review by the twenty-third session of the Governing Council/Global Ministerial Environment Forum of the conclusions and recommendation of the intergovernmental consultation on strengthening the scientific base of UNEP (web site address: science.unep.org) represents an opportunity to address that challenge. An evaluation of the conclusions and recommendations by the UNEP Executive Director, as requested in decision SS.VIII/1, is outlined below. The consultation identified the option of developing a coherent and dynamic framework for keeping the environment under review and the present document proposes a process for the development of the new framework, tentatively called "Environment Watch". Activities under the framework will be implemented through the UNEP biennial programme of work, extra-budgetary activities and partnerships, which are also reported on below. A detailed description of an Environment Watch framework is contained in document UNEP/GC.23/INF/18 prepared for the current session of the Council/Forum.

### **B. GEO Year Book 2004**

4. The *GEO Year Book 2003*, the first in the annual series, was launched at the eighth special session of the Governing Council/Global Ministerial Environment Forum on 29 March 2004. The *GEO Year Book 2004* is presented in document UNEP/GC.23/INF/2. The *GEO Year Book* comprises a global and regional overview, an indicator section, and a section on emerging issues. The issue highlighted in 2005 will be diseases emerging due to environmental change and changes in ocean circulation. The *GEO Year Book* will also include a feature focus on gender and environment in support of the deliberations of the current session of the Council/Forum. It provides the Council/Forum with recent findings relevant to its considerations of the state of environment. The Council/Forum may wish to consider the findings in the light of its mandate, outlined in General Assembly resolution 2997 (XXVII), 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. It may also wish to consider whether further attention or action by Governments, the Executive Director, international organizations and other stakeholders are needed in that context.

### **C. Global Data and Information**

5. The participants at the first Earth Observation Summit, which took place in July, 2003, declared that there was a dire need for "timely, quality, long-term, global information as a basis for decision-making." Following this declaration, a process was initiated to develop the Global Earth

Observation System of Systems (GEOSS). The process will culminate in February, 2005, with the adoption of a ten-year implementation plan for GEOSS. The purpose of GEOSS is to achieve comprehensive, coordinated, and sustained Earth observations for the benefit of humankind. This will result in improved monitoring of the state of the Earth and will significantly add to UNEP capabilities for integrated environmental assessment. The Council/Forum may wish to encourage greater participation by UNEP, as a major user of global data and information, in GEOSS.

#### **D. Addressing environmental challenges**

6. Policy responses and actions needed to halt and reverse environmental degradation and bring about sustainable development in all countries must be based on the best available scientific data and information. The increasing complexity of environmental challenges and emerging issues requires not only sound thematic and integrated assessments that produce policy-relevant findings for decision makers but also the formulation of law and policy that aim to protect environmental resources and human well-being augmented by the implementation of practical measures to improve the quality of the environment and achieve sustainable development. The contribution of UNEP in addressing environmental challenges is reflected in the present state of the environment overview document and elaborated upon in the following addendum documents.

7. Chemicals, particularly mercury, are among the most hazardous and persistent of all pollutants affecting land, air and water, and having a significant impact on human health. The sound management of chemicals, including a progress report on the new Strategic Approach for International Chemicals Management (SAICM), is addressed in document UNEP/GC.23/3/Add.1. Disasters continue to impact the most vulnerable members of society and severe environmental degradation has occurred in many countries that have experienced conflicts. Accordingly, responses to environmental emergencies are dealt with in document UNEP/GC.23/3/Add.2. The work of UNEP in the area of environmental law, particularly the Programme for the Development and Periodic Review of Environmental Law for the First Decade of the Twenty-First Century (also known as the Montevideo III Programme), is described in document UNEP/GC.23/3/Add.3 and related work in that area, such as support to multilateral environmental agreements, monitoring and compliance, and the progress of the Intergovernmental Panel on Climate Change is summarized in document UNEP/GC.23/3/Add.4. Water policy and water-related issues remain a top priority for all countries and document UNEP/GC.23/3/Add.5 outlines the UNEP water policy and strategy.

8. The 46 small island developing States share similar sustainable development challenges, including small population, lack of resources, remoteness, susceptibility to natural disasters, excessive dependence on international trade and vulnerability to global developments. The vulnerability of small island developing States to environmental change, particularly climate change, continues to be a significant threat. Document UNEP/GC.23/3/Add.6 summarizes UNEP work with those States. Finally, the environmental problems of Africa are among the most challenging, and they are inextricably linked with the downward spiral of poverty. Support to Africa and poverty alleviation in all developing regions remains high on the UNEP list of priorities and continues to be the focus of interventions by donors and multilateral lending institutions. Those issues are dealt with in document UNEP/GC.23/3/Add.7.

### **III. Evaluation of the conclusions and recommendations on strengthening the scientific base of UNEP**

#### **A. Background**

9. The conclusions and recommendations of the intergovernmental consultation on strengthening the scientific base of UNEP, held in Nairobi on 14 and 15 January 2004, were presented at the eighth special session of the Governing Council/Global Ministerial Environment Forum held in Jeju from 29 to 31 March 2004 (UNEP/GC.23/3/Add.4, annex I), as requested by Governing Council decision 22/1/IA, which was a follow-up to Governing Council decision SS.VII/1 of 15 February 2002 on international environmental governance.

10. Governing Council decision SS.VIII/1 II on international environmental governance requested UNEP to evaluate the conclusions and recommendations of the intergovernmental consultation on strengthening the scientific base of UNEP, and the Governing Council to review the implementation of

the conclusions and recommendations contained in the report of the consultation at its twenty-third session. The evaluation is contained in the present report, supplemented by a detailed summary of the UNEP response to the recommendations as contained in annex I of document UNEP/GC.23/INF/18.

11. The conclusions and recommendations of the intergovernmental consultation on strengthening the scientific base of UNEP (the Science Initiative), were presented in annex I of document UNEP/GCSSVIII/5/Add.4, under three main headings reflecting the questions outlined in decision GC22/1 I A, namely:

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

(b) Question 2: How are the United Nations Environment Programme and other organizations currently meeting those assessment needs?

(c) Question 3: What options exist with respect to meeting any unfulfilled needs that fall within the role and mandate of the United Nations Environment Programme?

12. Within those three questions, the conclusions and recommendations were presented under the following sub-headings:

(a) Assessment of existing environmental challenges;

(b) Assessment of interlinkages;

(c) Scientific credibility, legitimacy and relevance in environmental assessment processes;

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

(e) Developing country participation and capacity-building.

13. For the purpose of the present evaluation, a new first heading, "General conclusions and recommendations", has been added to address some general recommendations made. In view of a certain amount of overlap between conclusions and recommendations, for the purpose of the present evaluation, they have been clustered under the six sub-headings and are presented verbatim in the first column of annex I of document UNEP/GC.23/INF/18. In addition, the UNEP response to the clusters of conclusions and recommendations is provided in the second column of that annex. The UNEP response is an indication of where UNEP can respond to recommendations through existing or planned activities under its programme of work, and to what extent it is able to respond, either fully or partially. The following subsections provide a brief synthesis of the information in annex I and the implications for UNEP.

## **B. General conclusions and recommendations**

14. The general conclusions and recommendations on strengthening the scientific base of UNEP are mainly derived from the considerations of question 3: What options exist with respect to meeting any unfulfilled needs that fall within the role and mandate of the United Nations Environment Programme. The intergovernmental consultation recognized that its conclusions and recommendations implied additional activities for UNEP, which would require the strengthening of the capacities and expertise of UNEP as well as additional staffing and budgetary resources (see reference to paragraphs 30, 32 b. and 32 e of annex I). A key vehicle for responding to the conclusions and recommendations are the existing and planned activities outlined in the programme of work (see annex I).

15. In the proposed biennial 2006–2007 programme of work, the Executive Director has presented a strengthened subprogramme 1 on environmental assessment and early warning with a 14.4 per cent budget allocation increase from the Environment Fund compared with the 2004–2005 programme. The subprogramme is focused on addressing gaps and needs identified by the intergovernmental consultation. It should also be noted that UNEP assessment and monitoring activities are also undertaken with substantial support from external budgetary resources, including from the Global Environment Facility, bilateral extrabudgetary funding and through cooperation with other international organizations. The UNEP secretariat spends a significant amount of time and resources on mobilizing such funding, responding to priorities and reporting requirements set by the Governing Council/Global Ministerial Environment Forum and other entities, and coordinating efforts internally.

16. Keeping the world environmental situation under review and ensuring that emerging environmental problems are considered by Governments is a formidable challenge which requires action beyond that undertaken by UNEP alone. The intergovernmental consultation suggested that

UNEP could serve as an umbrella for coordination of assessment activities by taking periodic stock of those activities. The Executive Director has initiated a pilot activity to “map the assessment landscape” (see also chapter V, section A, below). The consultation also identified the need for an assessment of data collection and monitoring methodologies, including cost-effectiveness, standardization and interoperability of data sets to facilitate exchange of environmental information, which is addressed in chapter V, section D, below. Those activities are important in order to identify the basis for concerted action by the different actors in the field but further measures would be needed to promote a more coherent approach.

17. The intergovernmental consultation also reiterated the central role of the Governing Council/Global Ministerial Environment Forum in determining priorities for assessments and monitoring, and the need to strengthen existing mechanisms in a coherent fashion. Options for doing so included setting priorities within the context of development goals in the form of a coherent environmental assessment partnership framework and exploring the requirements for interactive mechanisms for strengthening the interface between science and policy. Given the difference of views on the establishment of an intergovernmental panel on global environmental change, the Executive Director recommends that actions on how to further strengthen the efforts for keeping the environment under review should focus on function rather than institutional form. In pursuance of the call for a more coherent approach, it is suggested that a dynamic framework for keeping the environment under review, tentatively called “Environment Watch”, should be developed to further strengthen the scientific base of UNEP. A process for the development of a framework through further intergovernmental and multi-stakeholder consultations is outlined in chapter IV below.

18. The need to mainstream gender perspectives into environmental assessment and early warning activities was stressed during the intergovernmental consultation. The Executive Director has commissioned an independent study on how to strengthen mainstreaming of gender perspectives into environmental assessment and early warning activities, which will provide an important impetus for further action in this area.

### **C. Assessment of existing environmental challenges**

19. The Governing Council/Global Ministerial Environment Forum is the main intergovernmental body mandated to keep under review the state of the global environment, to continually assess environmental challenges, to identify new and emerging issues and to set assessment priorities. The Executive Director supports the Council/Forum by managing the processes for environmental networking, monitoring, data collection and management, compilation of statistics and indicators, assessment and early warning and providing relevant data and information for its consideration. The intergovernmental consultation highlighted the need:

- (a) To establish long-term assessment priorities;
- (b) To continue the assessment of environmental challenges;
- (c) To identify new and emerging issues;
- (d) To address specific national, subregional, regional, and specialized constituencies such as small island developing States, and requirements, including water, land degradation, forests, chemicals, biological diversity, ecosystem services, consumption and production, environment and human health, and the environmental dimensions of pre-conflict and post-conflict situations.

20. The development of Environment Watch, a coherent and dynamic assessment framework, would strengthen the ability of the Council/Forum in exercising its mandate and addressing the above-mentioned needs. A number of different activities are underway for addressing those needs as outlined in chapter II, section B above and chapter V below.

### **D. Assessment of interlinkages**

21. The intergovernmental consultation identified the need to give greater attention to assessment of interlinkages, to underpin the integration of environmental concerns into sectoral plans and policies, and to assess their social and economic implications. It was stressed that such assessments should be focused, address the key questions, be related to the needs of Governments, cover linkages between environment and development in the context of the internationally agreed goals contained in the Millennium Declaration and the Johannesburg Plan of Implementation, and use the competence and expertise available within the United Nations system, the secretariats of multilateral environmental agreements, intergovernmental organizations and other stakeholders of environmental assessment. It

was noted that the Executive Director of UNEP might outline the draft characteristics of a possible assessment of interlinkages that could be integrated into the *GEO* process and that mapping the assessment landscape would contribute to clarifying interlinkages.

22. The Executive Director has examined the characteristics of a possible assessment of interlinkages through a series of informal consultations. It should be noted that in 1998, UNEP, the National Aeronautics and Space Administration (NASA) and the World Bank produced an interlinkages report entitled "Protecting our planet, securing our future: linkages among global environmental issues and human needs". The Scientific and Technical Advisory Panel of the Global Environment Facility (GEF) has recently completed an assessment of interlinkages and their implications for the GEF focal areas. Other assessments have also been undertaken under the auspices of the Convention on Biological Diversity and the Intergovernmental Panel on Climate Change. There is still a need, however, to take stock of the overall state of knowledge in this respect. The fourth *Global Environment Outlook* report (*GEO-4*), with its proposed overarching focus on the environmental dimensions 20 years after the publication of the Brundtland Commission report, is an opportunity to assess the interlinkages addressed in the consultation by gathering leading experts and practitioners in the field (see chapter V, section B). The mapping of the assessment landscape (see chapter V, section A) and the development of the Environment Watch framework would contribute to a greater awareness of win-win situations and synergies within and between environment and development challenges.

### **E. Scientific credibility, legitimacy and relevance in environmental assessment processes**

23. The conclusions and recommendations of the intergovernmental consultation confirmed the need to strengthen scientific credibility, legitimacy and relevance in environmental assessment processes by highlighting the following key issues:

- (a) The need for engaging the best scientific expertise, taking account of regional balance;
- (b) More effective interaction between science and policy through intergovernmental and multi-stakeholder consultations;
- (b) Strengthening the *GEO* process by increasing linkages with the scientific community, improving the data foundation, improving the scientific peer review process, and improving the scientific credibility of the collaborating centre network in all regions;
- (c) The need to improve the quality, quantity, management and accessibility of data for assessment; and
- (d) The opportunity presented by the Earth Observation Summit to improve environmental assessment and monitoring.

24. UNEP is responding to that cluster of recommendations as a matter of priority, primarily through its programme of work, by focussing on revitalizing and strengthening several inter-related functional areas as follows:

- (a) *GEO* process (see chapter V, section B);
- (b) Thematic assessments (see chapter V, section C);
- (c) Environmental early warning, observing and monitoring (see chapter V, section D);
- (d) Regional activities (see chapter V, section E);
- (e) Environmental indicators (see chapter V, section F); and
- (f) Networking structures for information and data management (see chapter V, section G).

25. All of those activities will be linked with the intergovernmental strategic plan for technology support and capacity-building (see chapter V, section H). A key challenge that could be addressed effectively through the Environment Watch framework is promoting the involvement of Governments and other stakeholders in identifying priorities for action and providing support for mobilization of experts, expert institutions, networking and data in a systematic and sustainable manner.

### **F. Cost-effectiveness, cooperation and strengthening of existing institutions**

26. The conclusions and recommendations relating to cost-effectiveness, cooperation and strengthening of existing institutions focused on the following key issues:

- (a) The need to improve cost-effectiveness, cooperation, strengthening of existing institutions, networking, regional consultations, information-sharing and linking assessments;
- (b) Use of existing mechanisms such as the Environmental Management Group and Earthwatch to maximize synergies and economies of scale;
- (c) Analysing the costs of environmental degradation in relation to social and economic planning.

27. A major response to this cluster of recommendations is the pilot exercise to map the assessment landscape, which will provide a baseline for identifying existing assessment activities, overlaps and gaps. Experience from inter-agency cooperation mechanisms shows that such cooperation is most effective when it is issue-driven. That lesson should be incorporated in further efforts for the follow-up of the Science Initiative. The International Assessment of Agricultural Science and Technology for Development launched recently is a good example of an issue-specific, inter-agency collaboration involving seven co-sponsoring agencies, namely the Food and Agriculture Organization of the United Nations (FAO), UNEP, the United Nations Development Programme (UNDP), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO), World Bank and GEF (see also document UNEP/GC.23/INF/18).

## **G. Developing country participation and capacity-building**

28. The conclusions and recommendations relating to participation and capacity-building of developing countries and countries with economies in transition focused on the following key issues:

- (a) Improving national capacities for data collection, analysis, research and assessment;
- (b) Increasing scientists understanding of and involvement in policy-making processes;
- (c) Increasing the participation of country scientists and institutions in environmental assessment;
- (d) Increased capacity and presence of UNEP regional, subregional and out-posted offices;
- (e) Increased networking and support to national, subregional and regional institutions and initiatives for assessment and early warning of emerging environmental issues;
- (f) Linking ongoing and planned capacity-building activities to the intergovernmental strategic plan for technology support and capacity-building.

29. Responding to this cluster of recommendations is a priority for UNEP over the 2004–2005 and 2006–2007 biennia. The Executive Director has established a separate section within the Division of Early Warning and Assessment that is responsible for implementing the recommendations. Implementation will take place in the context of the programme of work and through the mobilization of extra-budgetary resources. Activities will include: further strengthening of *GEO* capacity-building activities (see chapter V, section B, below); the UNEP contribution to the global earth observation system of systems (see chapter V, section D, part 2, below); support to developing countries and countries with economies in transition for land classification (see UNEP/GC.23/INF/18, annex V, improved data and information management, use of environmental indicators, and revitalized networking structures (see chapter V, below). Further initiatives will depend on the intergovernmental strategic plan for technology support and capacity-building (see chapter V, section H) and the Environment Watch framework.

## **IV. Towards the Environment Watch framework**

30. The intergovernmental consultation on strengthening the scientific base of UNEP reiterated the central role of the Governing Council/Global Ministerial Environment 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. A key challenge, particularly in developing countries, is to improve the collection, management, analysis, and sharing of reliable environmental data through innovative, cost-effective approaches, enabling countries to manage their environmental resources better and participate effectively in international environmental assessments. It seems clear, therefore, that any such

framework should not be limited to assessments but should cover the wider set of actions related to keeping the environmental situation under review.

31. It is suggested that such a framework, tentatively called “Environment Watch” would address the relevant functions and responsibilities of the Governing Council of UNEP, as outlined in General Assembly resolution 2997 (XXVII), namely to:

- (a) 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;
- (b) Promote the contribution of the relevant international scientific and other professional communities to the acquisition, assessment and exchange of environmental knowledge and information;
- (c) Build capacity and promote technology support for undertaking national and engaging in international processes for monitoring, assessment and early warning.

32. The Executive Director’s proposed process for the development of the Environment Watch framework consists of the following steps:

- (a) Consideration by the Governing Council/Global Ministerial Environment Forum of the proposal presented in working document UNEP/GC.23/3, supported by information document UNEP/GC.23/INF/18 (annexes II to IV) outlining the characteristics and components of the framework, as outlined below;
- (b) Nomination of national focal points for the development of the Environment Watch framework;
- (c) Intergovernmental and multi-stakeholder consultations on the design of the framework;
- (d) Establishment of a trust fund for the development of the framework to complement activities funded by the Environment Fund and extra-budgetary sources;
- (f) Presentation of the proposed framework for the consideration by the Governing Council/Global Ministerial Environment Forum at its ninth special session of the GC/GMEF.

33. The Environment Watch framework would serve the purpose of:

- (a) Promoting the interaction between science and policy-making to address gaps and needs and set priorities for processes related to keeping 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;
- (b) Applying a dynamic set of collaborative processes for networking, monitoring, data collection and management, compilation of statistics and indicators, assessment, information exchange, and early warning in response to policy needs at different spatial scales;
- (c) Strengthening the credibility, legitimacy and relevance of such processes and promoting the use of timely, accurate, relevant and reliable data and information, including local and indigenous knowledge;
- (d) Facilitating access to and development of appropriate tools and methodologies, including environmental indicators and statistics;
- (e) Promoting capacity-building in developing countries and countries with economies in transition, among other things, through the intergovernmental strategic plan for technology support and capacity-building; and
- (f) Facilitating the monitoring, evaluation and periodic stocktaking of processes and activities relevant to the framework;

34. It is suggested that the framework consist of two main components. The first component would be an operational framework, intended to identify a generic framework for keeping the environment under review and ensuring that review findings are considered and if necessary acted upon. This part of the framework would reflect the flexible set of processes, or business model, that comes into play when keeping the environment under review. Its key functions would be strengthening the science-policy interface; mobilizing systems and networks for data gathering, monitoring, observation and information management; delivering products and services; promoting communications and outreach; and building the capacity of collaborating partners.

35. The other component would be a modular framework. This component would recognize that it is impossible to keep the world environmental situation under review without being able to divide it into well-defined modules that can be pieced together as building blocks to reflect the bigger picture, or broken down into smaller pieces to reflect more detailed modular challenges, as and when needed. The modules would be defined by their thematic and geographical scope, and each would be infinitely flexible and could be attuned to the specific geographical scale and theme under consideration. Modules could vary from covering all environmental aspects of the globe to a specific theme for a country.

36. Each module would be covered by the operational framework which would be flexible and could be attuned to a specific geographic scale, time scale, thematic scope, and resources available. The combination of the two framework components, that is to say the application of a common flexible and agreed approach applied at different thematic and geographical scales, could greatly facilitate concerted actions aimed at keeping the entire world environment situation under review. It would make it easier for all actors to orient themselves in the practical and conceptual landscape, and it would make it easier to establish and maintain universal support structures.

37. The overall framework concept is based on past and current experience in the area of data gathering, networking, monitoring and observing systems, information access and exchange, and communications, all of which reflect key functional aspects related to environmental assessment and early warning. GEO assessments and other assessments are produced within a conceptual and analytical framework, which has evolved and matured over time.

38. A more detailed outline of the characteristics and components of the framework is contained in annex II of document UNEP/GC.23/INF/18. The development of such a framework would be a vehicle to maintain the momentum created by the Science Initiative and further strengthen UNEP key functions for keeping under review the world environmental situation and ensuring that emerging environmental problems are considered by Governments.

## **V. Priority actions in strengthening the scientific base for keeping under review the world environment**

### **A. Mapping the assessment landscape**

39. In order to lay the foundation for the framework it is necessary to take stock of the many diverse initiatives on environmental assessment. As a follow-up of the recommendations emanating from the Science Initiative, the Executive Director has initiated a pilot activity to map the assessment landscape with extra-budgetary resources from the Government of Norway. Additional resources will be sought to carry out a fully-fledged and continuous mapping exercise. The objectives of the mapping exercise are:

- (a) To provide a definitive baseline overview of the state of thematic and geographic coverage and scope of environmental assessments at all levels (global, regional, subregional and national) and identify gaps to assist in setting assessment priorities, for example, for the internationally agreed goals contained in the Millennium Declaration and the Johannesburg Plan of Implementation;
- (b) To identify applied research priorities for the future;
- (c) To disseminate the information to the policy-making and decision-making community so as to increase their knowledge and understanding of the thematic and geographic coverage of environmental assessments, specifically highlighting overlaps and gaps in environmental assessments, an indication of the assessment's effectiveness and impact and how this can be determined.

40. The outputs of the mapping exercise will be:

- (a) A web-based knowledge base, tentatively called prototype environmental assessment and reporting landscape at [www.unep.org/pearl](http://www.unep.org/pearl), of current and past environmental assessment activities and outputs,
- (b) Information products in electronic and hard copy form including maps, a directory of assessments and key assessment information for decision-makers.

## B. Designing the fourth Global Environment Outlook report

41. The intergovernmental consultation on strengthening the scientific base of UNEP commended the bottom-up and consultative approach used in the *GEO* process and called for further strengthening of that process. To that end, possible measures that might be undertaken include:

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

42. The objective of *GEO-4* is to provide a comprehensive, reliable, scientifically credible, policy-relevant, up-to-date assessment of, and outlook for, the state of the global environment. *GEO-4* will draw upon, assess and synthesize the state of knowledge from best available resources, including data and relevant assessments at global and sub-global levels. More specifically, it will analyse environmental conditions, trends and emerging issues; pressures and driving forces; primary and secondary effects; environmental values and costs to society; and policy responses, response options and their future implications. *GEO-4* will be published in 2007, in line with the new five-year reporting cycle requested in Governing Council decision 22/1 I B.

43. The design process for *GEO-4* consists of a number of discrete but progressive steps and parallel planning processes including:

- (a) Initial design meeting, Nairobi, June 2004;
- (b) Planning processes for specific elements of *GEO-4*, July–October 2004;
- (c) Regional ad hoc expert consultations on *GEO-4*, September–October 2004;
- (d) *GEO-4* design meeting, Nairobi, November 2004;
- (e) Regional partners' meetings, November–December 2004;
- (f) Consideration by a *GEO-4* scientific advisory committee, Nairobi, early 2005;
- (g) Global consultation on *GEO-4* (open to all Governments and key stakeholders), Nairobi, early 2005.

44. Interaction between science and policy in the form of intergovernmental and multi-stakeholder consultations at global and sub-global levels is crucial to identify user needs and ensure the legitimacy, relevance and ownership of assessments. For the first time in a comprehensive *GEO* report cycle, a series of regional expert consultations have been held within the design phase of *GEO-4*. Their purpose was to ensure that the assessment is as responsive as possible to policy makers' needs. Recommendations from the consultations will be taken into consideration in the final implementation plan for *GEO-4*.

45. The global consultation will inform Governments and stakeholders of the outcome of the regional consultations and other preparatory work related to the design of *GEO-4*. The consultation will consider the global orientation of *GEO-4* in terms of scope, outline, process, outputs and outreach in the context of a possible Environment Watch framework.

46. Several other United Nations bodies have expressed their willingness to participate more actively in the *GEO* process. UNEP welcomes this interest and will work toward strengthening partnerships with other United Nations agencies by, among other things, highlighting their work more consciously and strategically in *GEO-4*.

47. Prospective United Nations partners were invited to participate in the design phase for *GEO-4* so that appropriate areas for collaboration could be identified.

## C. Undertaking thematic assessments

48. The Science Initiative identified a number of specific thematic assessment needs. In the follow-up to these findings and as an integral input to the *GEO* process and as follow-up of its UNEP is proposing the development of thematic environmental assessment modules including freshwater, marine and coastal, land and air with an objective to:

- (a) Provide the scientific knowledge base for international environmental governance and mainstreaming of environmental concerns into social and economic sectors in support of the internationally agreed development goals, including those contained in the United Nations Millennium Declaration;
- (b) Facilitate the interaction between science and observations on one hand and policy and decision-making on the other hand through conducting processes and producing products of high legitimacy, credibility and utility;
- (c) Build partnerships and capacity for multi-scaled and multi-dimensional integrated environmental assessment processes based on geographic and gender balanced collaborative partnership of institutions and experts – processes which includes extensive critical peer review.

These modules will build on the ongoing thematic assessments undertaken by UNEP in collaboration with other partners as described in document UNEP/GC.23/INF/18.

## D. Promoting environmental early warning, observing and monitoring

49. Early warning is the timely identification and assessment of emerging environmental threats that may impact the long-term vulnerability of people, ecosystems and the services that each provides. Observing systems are necessary for early warning of emerging environmental threats, natural disasters and for vulnerability and risk assessment of people and ecosystems and are necessary, therefore, to fulfil the UNEP mandate.

### 1. Early warning

50. UNEP played an active role in the United Nations International Strategy for Disaster Reduction (ISDR) and its inter-agency task force including providing the chair for the inter-agency task force-working group two on early warning. The working group generated a number of outputs including an inventory of early warning system (accessible through web site <http://database.unep.dkkv.org>) and guidelines for indicators of efficiency of early warning systems. The group was instrumental in developing an international platform on early warning and a programme of action for strengthening international dialogue and action on early warning, which constituted the key outcomes of the second International Conference on Early Warning held in Bonn, Germany, from 16 to 18 October 2003.

51. Early warning activities at regional level, especially in relation to human vulnerability, include case study reports for the African Environment Outlook, for Latin America and the Caribbean on forest fires, and a new series of newsletters on early warning issues at the global levels and regional European level. UNEP is playing an active role in preparing inputs to the World Conference on Disaster Reduction that will take place in Kobe, Japan, in January 2005.

### 2. Global observing systems

52. The intergovernmental consultation on strengthening the scientific base of UNEP identified the need for an assessment of data collection and monitoring methodologies, including cost-effectiveness, standardization and interoperability of data sets to facilitate exchange of environmental information. The Executive Director recommends that this need should be addressed in the context of UNEP activities in support of the global observing systems process, namely GEOSS and the integrated global observing strategy partnership. UNEP is currently co-Chair of the integrated global observing strategy partnership process that is preparing strategic documents for future activities of the partnership, and for the implementation of the strategy themes such as carbon, water, ocean, geo-hazards, coral reefs and atmospheric chemistry.

53. UNEP also participates actively in the GEOSS process and the development of the GEOSS ten-year implementation plan, which will be the blueprint for the realization of the system. The executive heads of FAO, UNESCO, Intergovernmental Oceanographic Commission (IOC), World Meteorological Organization (WMO) and UNEP have developed two joint United Nations statements of support to

GEOSS, one for the second Earth Observation Summit in Japan (April 2004) and the other for the Group on Earth Observations special session on governance held in Brussels on the 27 and 28 of September 2004. UNEP is a member of several working groups that deal with different strategic aspects of the System of Systems, such as the international cooperation subgroup (governance issues), the capacity-building subgroup (social benefits and developing countries issues). In collaboration with the Government of South Africa and the GEOSS capacity-building sub-group, UNEP has organized a special session on the system of systems within the fifth conference of the African Association of Remote Sensing of the Environment held on 21 October 2004. See annex IX of document UNEP/GC.23/INF/18 for further information.

54. The success of the Environment Watch framework discussed above would depend on high quality, timely data and information on environmental change as fundamental for policy development. UNEP uses a variety of data and information to support its assessment activities, from space-based satellite data to ground-level, community based, indigenous knowledge. While all of these forms are equally valued, there is a recognized need for a harmonized global earth observing system that is driven by the needs of organizations like UNEP and its constituent bodies and partners. GEOSS will greatly enhance UNEP capabilities in the access to and use of global data and information. In turn, GEOSS can benefit from the role of UNEP as a major user of this data and a clear conduit for capacity-building in data compilation and analysis at the regional, subregional and national levels.

### 3. Environment and conflict prevention

55. UNEP has established an initiative on environment and conflict prevention that has produced the publication entitled *Understanding, Environment, Conflict and Cooperation* (see: <http://www.unep.org/PDF/ECC.pdf>). A case study on the Great Lakes region of Africa was initiated and this is the first in a series of case studies that will be carried out in developing regions. The purpose of the Great Lakes region case study is to understand the role of environmental resource management in relation to conflict in the region as a basis for developing policies and measures for prevention of conflict.

56. The initiative organized a preparatory meeting on environmental issues in the Great Lakes region for the International Conference on the Great Lakes Region of Africa. The conference is composed of a series of preparatory meetings leading to the first main meeting of heads of States (Dar Es Salaam, November 2004). It is hoped that recommendations formulated by participants to the UNEP meeting will be endorsed in the declaration of the conference and will be transformed into real action plans at the second main meeting to formulate the plan of action. The declaration and plan of action will constitute the pact for security and development of the Great Lakes region.

57. Other main actions of the initiative are:

- (a) An experts group on environment and conflict prevention that gives guidance and scientific support to the initiative (the first meeting will take place in Bonn in March 2005);
- (b) A web site on the initiative and UNEP conflict-related projects and actions;
- (c) Studies and papers on environment and conflict prevention and cooperation.

### E. Strengthening the regional dimensions of assessment, monitoring and early warning activities

58. UNEP is responding to the call resulting from the Science Initiative for an increased capacity and presence of UNEP regional, subregional and out-posted offices. This response is illustrated through the many environmental assessment and early warning activities implemented by UNEP in the regions (see document UNEP/GC.23/INF/18). In addition to facilitating the preparation of environment outlook reports at regional, subregional, national and subnational levels, UNEP also facilitates capacity-building activities, which benefit both individuals and institutions. Taking into account the findings and recommendations from the Science Initiative, the scientific community is becoming increasingly involved with those regional activities. A further strengthening of those efforts requires a clear strategic approach that can be promoted through the development of the Environment Watch framework, the intergovernmental strategic plan for technology support and capacity-building and revitalized networking structures for information and data management.

## F. Promoting the use of environmental indicators

59. Indicators help translate complex data into comprehensible information and are frequently aggregated to show progress towards a target. The reporting products are generally shorter and more concise than traditional comprehensive and lengthy environmental reports. Over the years a number of environmental indicators have been produced. The growing list has demonstrated that lack of data, especially of reliable time series data, is the key limiting factor for the use of those indicators. On the other hand, obtaining an agreement on a set of key indicators where data is or can be made available, is a way of structuring and creating an incentive for long-term monitoring and data collection.

60. A number of important lessons can be drawn, however, from successful examples in the social and economic fields. In recent years, the trend seems to move towards development of a few indicators as reflected by the *10 Indicators for Environment* by the Organization for Economic Cooperation and Development (OECD) (2001), *Headline Indicators* by the European Environment Agency (EEA) in *Environmental Signals* (2002) and by a similar approach by the Canadian National Round Table on the Environment and the Economy (2003). Within the United Nations system, a major paradigm shift has taken place due to the internationally agreed goals contained in the Millennium Declaration. Goal 7 in the Millennium Declaration, to ensure environmental sustainability, addresses important environmental issues by looking at the interaction between the environment and the other two components of sustainable development. The goal addresses the loss of natural resources and the impact of the economy on the environment through the use of the environment as provider of goods and services, such as timber and non-timber products and energy resources, and as a provider of sinks for pollutants, such as emissions of CO<sub>2</sub>, ozone-depleting substances. The interaction of the environmental domain with social issues are also addressed, including the need to promote equitable access to and adequate supplies of water, improved sanitation, to reduce exposure to indoor air pollution and to improve the lives of slum dwellers.

61. A framework of eight goals, 18 targets and 48 indicators to measure progress towards the internationally agreed goals contained in the Millennium Declaration was adopted by a consensus of experts from the United Nations Secretariat, the International Monetary Fund, OECD and the World Bank. UNEP has been contributing towards the internationally agreed goals contained in the Millennium Declaration indicators as an input to the United Nations Secretary-General's report to the General Assembly through the interagency expert group on internationally agreed goals contained in the Millennium Declaration indicators.

62. UNEP, in cooperation with the Scientific Committee on the Protection of Environment, organized a workshop on the assessment of sustainability indicators. UNEP carried out an extensive review of the indicators related to environmental vulnerability in the publication entitled *Assessing Human Vulnerability To Environmental Change*, and those pertaining to coastal vulnerability in the forthcoming report entitled "Assessing coastal vulnerability: a proof of the concept". A number of regional initiatives have been undertaken for tracking environmental trends. Work has continued towards the development of a preliminary composite index for environment. UNEP has been providing access to indicator databases through the *GEO* data portal. A set of indicators is also provided in the *GEO* Year Books (see UNEP/GC.23/INF/2). A partnership has been developed with the United Nations Statistics Division and other data providers for capacity-building in environmental statistics at the national level, where the majority of data collection and compilation activities are undertaken. Document UNEP/GC.23/INF/15 presents work undertaken by the United Nations Statistics Division in the area of environment.

63. The internationally agreed goals contained in the Millennium Declaration have provided an operational framework for coherent action within the United Nations system and for identification of how best it might support national efforts. The Millennium Declaration specifies outcomes and is proving to be a useful instrument for mobilizing the international community around a set of common goals and targets. Furthermore, the internationally agreed goals contained in the Millennium Declaration have set a new trend towards developing policy relevant indicators. Further action by the Executive Director in contributing to this trend will focus on:

(a) Tracking progress towards internationally agreed targets and goals, such as the internationally agreed goals contained in the Millennium Declaration and targets agreed at the World Summit on Sustainable Development, by a few leading performance-based indicators which would serve as the basis for analysing trends and comparative analysis of countries over time;

(b) Presenting indicators and related analysis in assessments and other publications such as the *GEO Year Book* ;

(c) Identifying, through intergovernmental and multi-stakeholder consultations, gaps in observations and the need for the development of reliable and time series data;

(d) Addressing such gaps and needs by improving the quality and timeliness of data, and mobilizing resources for capacity-building in partnership with organizations; and

(e) Working towards the development of an outcome-based composite index for environment similar to the human development index.

## **G. Revitalizing networking structures for information and data management**

64. The conclusions of the intergovernmental consultation on strengthening the scientific base of UNEP highlighted a number of important needs in the broad areas of environmental monitoring, data collection and analysis, integrated assessment and information exchange. Sound assessments must be based on reliable data and, for most environmental issues, data quality, quantity and accessibility needs to be improved. The data issue was identified as a key component underpinning scientific credibility of assessments. A key challenge, particularly in developing countries, is to improve the collection, management, analysis and sharing of reliable environmental data through innovative, cost-effective approaches.

65. The intergovernmental consultation called for a strengthening of national capacities in developing countries to enable them to manage their environmental resources better and participate effectively in international environmental assessments. Specific requirements included development of institutional capacities, staff training and the transfer of appropriate technologies and methodologies. At the technical level, there was a need for an assessment of data collection and monitoring methodologies, including cost-effectiveness, standardization and inter-operability of data sets to facilitate exchange of environmental information. At the institutional level, regional consultation, cooperation and networking were identified as critical factors for linking assessments across differing scales and strengthening information sharing.

66. The data issue can only be resolved by re-examining UNEP working arrangements with key national institutions that are involved in the collection, management and dissemination of environmental data and information. This is a vital component of the Environment Watch framework (see document UNEP/GC.23/INF/18). The process must be aggregated upwards to the subregional, regional and global levels by involving other key stakeholders that can analyse, interpret and synthesize national data to support integrated assessment processes at those higher levels.

67. UNEP needs to work with those institutions that are authoritative sources of relevant and reliable data and information on environmental issues in order to support early warning, assessment, reporting and information-exchange activities. UNEP needs to project one single networking presence in each country in order to eliminate the confusion caused by multiple networking initiatives. One national point of contact in each country is therefore highly desirable for effective communication and coordination of assessment programme activities and streamlining of networking structures. Within the Environment Watch framework, the design, development and implementation of a new model for environmental information networking is proposed at the national level. That model would be two-tiered, comprising:

(a) A Government -designated national focal point based in the principal environmental authority with responsibility for environmental assessment and reporting;

(b) A national environmental information network comprising a small number of key institutions coordinated by the national focal point and organizing an agreed national programme of work.

68. The national network structure should:

(a) Be endorsed by a UNEP Governing Council decision;

(b) Be formally established possibly through a partnership agreement;

(c) Comprise key institutions that are authoritative national reference centres with the expertise to handle both multi-functional and multi-thematic aspects of environmental data and information;

- (d) Be recognized and accepted as the principal environmental information network of UNEP in each country;
- (e) Be coordinated through a workable mechanism established by each country taking into account national environmental governance structures and related factors;
- (f) Organize a national set of activities, possibly through a programme of work under Environment Watch;
- (g) Have a clear and formally agreed communication process with UNEP at both the policy level and programmatic level;
- (h) Act as a two-way channel for information exchange between UNEP and its partners in each country.

69. Should Environment Watch be approved, the capacity-building component of the programme in developing countries and countries with economies in transition will be targeted, upon request, at the institutions participating actively in the national environmental information network. This will be done within the framework of the UNEP intergovernmental strategic plan for technology support and capacity-building.

70. Any global, regional or subregional networking initiative established under the UNEP assessment programme should be based on the building blocks of national structures and should be supported by effective coordination mechanisms that have political endorsement at the relevant level, for example, the African Ministerial Conference on the Environment endorsement of the Africa Environmental Information Network. From a global perspective, the new network structure is, in effect, a network of networks, and there are obvious synergies to be gained by countries and individual institutions from their participation in such a structure that spans thematic and geographic boundaries with respect to environmental data and information management.

## **H. Promoting the links between the Science Initiative and the intergovernmental strategic plan for technology support and capacity-building**

71. There are close links between the initiative on strengthening the scientific base of UNEP and the development of an intergovernmental strategic plan for technology support and capacity-building. First and foremost, both initiatives aim strategically at reinforcing the operations of the Governing Council/Global Ministerial Environment Forum. The Science Initiative aims at strengthening the science, data and knowledge basis for policy-making, while the strategic plan aims at strengthening the capacity of stakeholders to participate in, and implement, those policies.

72. Secondly, there are commonalities in the challenges faced under the two initiatives. A number of institutions are already working actively in both areas. Both initiatives are dependent on effective collaboration between a broad set of partners. A key challenge for UNEP under both initiatives is to facilitate monitoring, evaluation and periodic stocktaking of existing activities in order to identify gaps and needs and promote synergies and cooperation. In both cases, there is also a need to develop a framework that facilitates priority-setting, concerted action and oversight.

73. Thirdly, the two initiatives support each other directly. The consultations that have taken place under the Science Initiative clearly point to the need for technology support and capacity-building to enable developing countries and countries with economies in transition to undertake national activities relating to data, monitoring and assessments and to and participate in like activities at the international level. On the other hand, science and technology are key components in the promotion of capacity-building. Science and information, together with norms, good practices and resources, constitute the foundation for sustainable institutions for environmental management and mainstreaming. Scientific capacity is also a key prerequisite for adaptation of technologies to local conditions and for further technological innovation. In summary, the two initiatives are mutually reinforcing and this should be reflected in the further developments of both.

## **VI. Conclusions**

74. The intergovernmental consultation on strengthening the scientific base of UNEP, referred to as the Science Initiative, has resulted in a rich set of conclusions and recommendations. While it is acknowledged that UNEP since its inception has leveraged support for keeping the environment under review through a number of concrete activities in partnership with the scientific community and other

intergovernmental institutions, it is also acknowledged that a number of needs and gaps still have to be addressed. The Science Initiative has provided the Executive Director with most valuable guidance for developing a further strengthened, more focused and cost-efficient subprogramme 1 on environmental assessments and early warning for the biennium 2006–2007. The present evaluation report shows how a number of the conclusions and recommendations from the Science Initiative will be implemented through concrete activities. A number of those activities are being supported from sources other than the Environment Fund, including the Global Environment Facility, bilateral extra-budgetary funding and through cooperation with other international organizations.

75. It is recognized that its conclusions and recommendations emanating from the Science Initiative imply additional activities for UNEP that would require strengthening its capacities and expertise and additional staffing and budgetary resources. It should also be noted that the relatively limited availability of environmental data and information still represents a serious constraint on the ability of the international environmental governance structure both to monitor and make progress towards internationally agreed goals and targets. The review by the Governing Council/Global Ministerial Environment Forum at its twenty-third session of the implementation of the conclusions and recommendation contained in the report of the intergovernmental consultation represents an opportunity to address that challenge.

76. The Executive Director recommends that Governments take active part in further actions to strengthen the scientific base of UNEP. The Council/Forum may wish to endorse the development of the Environment Watch framework, as outlined in chapter IV above, which would aim at supporting the Council/Forum in carrying out its relevant functions and responsibilities. In that context, Governments may wish to:

(a) Play an active role in intergovernmental and multi-stakeholder consultations in order to address gaps and needs and set priorities for a dynamic set of processes related to keeping under review the world environmental situation, which respond to policy needs;

(b) Provide funding for those processes, including through in-kind support for the participation of national scientific experts and institutions in the processes and authorize the Executive Director to establish a trust fund to finance the activities;

(c) Consider how the Council/Forum might best review the findings of the processes in order to ensure that emerging environmental problems of wide international significance receive appropriate and adequate consideration by Governments;

(d) Appoint a national focal point for the development of the Environment Watch framework and communicate this to the Executive Director, revitalize and streamline existing national networking structures and partnerships so that all relevant institutions are engaged in the provision of data and information for environmental reporting and dissemination.

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