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

Addendum

UNEP-Live enabling framework for a migration to targeted assessments on thematic priority areas

Report by the Executive Director

Summary

The present report describes the requirements for a migration to targeted assessments in thematic priority areas and, in particular, the characteristics of a supporting framework for such assessments referred to as "UNEP-Live", as called for in section III of Governing Council decision 25/2 of 20 February 2009.

The report notes that the strategic nature of any such migration would require an equally strategic and sustained level of commitment by both the United Nations Environment Programme and by the partners with whom the journey would have to be undertaken, and discusses the investment in national technical and institutional capacities that would be required. It emphasizes the importance of the task, yet to be undertaken, of ascertaining the requirements of both users and consumers of environmental assessment products and findings and determining the costs of meeting those needs. It also emphasizes the crucial necessity of aligning and coordinating with existing and planned major global assessment efforts, while ensuring the maximum use and reuse of existing data, information, systems, services, expertise and institutional arrangements

Introduction

1.   By its decision 25/2, on the world environmental situation, the Governing Council of the United Nations Environment Programme (UNEP) requested the Executive Director to elaborate further on the requirements for a migration to targeted assessments on thematic priority areas supported by a UNEP-Live enabling framework and to report thereon to the Governing Council as its twenty-sixth session in 2011. In a footnote, the Governing Council specified that such a framework would be one where decision makers had easy access to assessment findings, syntheses, summaries and technical briefs.

2.   The present report[1] has been prepared in response to that decision. It focuses primarily on means of establishing a framework to support and facilitate a migration to targeted assessments in thematic priority areas, which is conceived of as a broad, strategic and integrated transformation of UNEP assessment processes over the coming five or six years.

3.   The report describes what must be done to identify the UNEP-Live[2] framework's target audience and their requirements, along with what must be done to engage partners in its implementation. It also proposes a phased approach to implement the framework over the period 2011–2015.

4.   Initial proposals featured in the report include one to establish a prototype framework to demonstrate in practical terms, using case studies, some benefits of the proposed platform, including improved, and easy, access by decision makers to assessment findings, data and summaries. The prototype would be limited in size and scope, and its development would take place over the coming two years. The prototype would include findings from completed and continuing assessments in thematic areas such as biodiversity, chemicals and the green economy. The proposed prototype would also point to gaps, needs and requirements of a fully functional live platform that could support future UNEP global and thematic assessments. Gaps and requirements include the type of federated approach needed for the framework (i.e., institutional cooperation and coordination), common data and content, infrastructures and tools and the financial implications and resource requirements of the framework.

5.   If fully realized, the UNEP-Live framework would provide an overarching conceptual framework for understanding and organizing global environmental knowledge activities and capacity-building for assessment and reporting. It would benefit countries by catering for specific country interests and priorities more flexibly, in particular by supporting national efforts to meet assessment and reporting obligations by providing common information content, technology infrastructure, standards, and guidelines. By organizing assessment knowledge and information, it will also support policy makers involved in the debate on international environmental governance by facilitating access to necessary information.

6.   The report further proposes to achieve this through a step-wise and phased approach to the development of a fully functional federated "UNEP-Live" over the coming five to six years. It highlights further what is needed to achieve this, including long-term strategic commitment from all partners, a thorough assessment of users' requirements, the establishment and maintenance of the necessary coordination mechanisms and the resources necessary to build national institutional and technical capacities. It recognizes that phases 2 and 3 in particular will depend entirely on sponsorship and mobilization of funds for their realization.

I.   Context

7.   The context in which a framework such as UNEP-Live would be implemented is highly dynamic, providing many valuable opportunities for partnership.

8.   UNEP derives its mandate from resolution 2997 of 15 December 1972, by which the General Assembly established UNEP. The resolution states in part that UNEP should keep the global environment under review, a function for which integration with other strategic environmental

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1   UNEP has received invaluable support in preparing the report from over a dozen invited experts from around the world. Contributors provided extensive advice and guidance drawing from their experience in environmental information management and sharing developments in national Governments, regional bodies, academic institutions and commercial technology development. Any errors or omissions are the fault of UNEP rather than the invited experts.

2   UNEP-Live is a working name, and may well change to reflect a wider participatory approach across a range of organizations.

processes is crucial. Today, such processes include the UNEP Global Environment Outlook process, the Global Reporting and Assessment of the Marine Environment, the proposed intergovernmental science-policy platform on biodiversity and ecosystem services, the Intergovernmental Panel on Climate Change and the Group on Earth Observation/Global Earth Observing System of Systems. The UNEP-Live framework will facilitate such integration.

9.   To deliver on its mandate, UNEP, together with its partners, will also need to build on knowledge of the global assessment landscape.[3] In each case emphasis will be laid on identifying policy-relevant outputs that singly or in combination promise to contribute to achieving the types of outcomes sought in each UNEP priority area.

10.   Governments and their institutions are obviously key to UNEP efforts to keep the global environment under review, both as contributors of data and information networks and as users of the tools that UNEP-Live would deliver. Examples of national and regional initiatives include, in West Asia, the Abu Dhabi Global Environment Data Initiative; in Europe, the European Environment Information and Observation Network, the European Environment Information and Observation Network and Global Monitoring for Environment and Security; in North America the likes of the Inter-American Biodiversity Information Network: and, in Latin America, the GeoSUR Programme (Red Geoespacial de América del Sur, or South American Georeferenced Network). There are also pan-regional initiatives operating in Meso-America, East Africa and the Himalaya/Hindu Kush subregions, such as the Regional Visualization and Monitoring System (Sistema Regional de Visualización y Monitoreo) for Latin America and the Caribbean. It will be necessary in each case to define the precise roles to be played by each party in these relationships.

11.   On the input side the UNEP-Live framework would build partnerships between organizations for the delivery of materials and the identification and promotion of synergies while avoiding duplication. Numerous significant efforts are under way worldwide to build networks and technical infrastructures for sharing and reusing environmental information.[4] Examples of national environmental information-sharing initiatives include the Canadian Geospatial Data Infrastructure, Western Australia's Shared Land Information Platform and geodata.gov in the United States of America. The European Environment Information and Observation Network is an example of federated country efforts on a broad regional scale. More recently the European Union, pursuant to directive 2007/2/EC of the European Parliament and the European Council, established the Infrastructure for Spatial Information in the European Community,[5] an ambitious pan-European data-sharing activity for a broad set of environmentally significant thematic domains.

12.   The aim of each of these activities is to provide an environment in which stakeholders can cooperate in an efficient, cost-effective way better to achieve common objectives of improved collection, management, access to and use of environmental information, working across a wide range of scales, from local to global, and across thematic domains. Thematic content providers, as key sources of input, will include United Nations bodies such as the Food and Agriculture Organization of the United Nations in the realms of forests, forestry and ecosystem services; environmental conventions such as the Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (the Ramsar Convention), on wetlands ecosystems; and operational programmes maintaining data and information resources such as the Global Environment Monitoring System water programme and the World Database on Protected Areas.

13.   There have been calls for the world community to create a multiscaled and multithematic global information network of national, international and independent scientific expertise for keeping the impact of environmental change on human well-being under review and to enable early warning. The network would be facilitated by a web-based facility for the sharing of up-to-date and reliable information with support provided through an inter-agency cooperation arrangement. The network would underpin the development and evolution of UNEP-Live.

14.   Thematic content providers would also be key sources of input to the network. They could include bodies such as the Food and Agriculture Organization of the United Nations with regard to forests, forestry and ecosystem services; and conventions such as the Ramsar Convention with regard to wetlands ecosystems.

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3   For a discussion of the assessment landscape see document UNEP/GC.26/INF/13.

4   The website for the Global Spatial Data Infrastructure (www.gsdi.org/) lists some 100 such activities at the multinational, national, regional and local levels, along with activities relating to specific domains of interest.

5   http://inspire.jrc.ec.europa.eu/.

15. The aim of each of these activities is again to provide an environment in which stakeholders can cooperate in an efficient, cost-effective way better to achieve common objectives of improved collection, management, access to and use of environmental information, working across a wide range of scales and across thematic domains.

II. Goals, objectives, results and benefits of UNEP-Live

16. One goal of UNEP-Live is to provide a coordinating node for displaying and having access to a global federation of assessment and reporting systems. The beneficiaries will be Governments and the general public, who will be better able to make available, identify and gain access to assessment findings, syntheses, summaries and technical briefs.

17. Those materials in turn will assist in efforts to answer important questions such as:

(a) How should a country design and undertake an assessment of the following type? Where can resources be found to guide the work? How can the most appropriate resources be identified and selected? Who else has used them and what was their experience? Can current efforts be enhanced to build on existing investments?

(b) What is the state of the world? Or this particular aspect of it in a geographic region? Is it improving or deteriorating? And how quickly?

(c) What is a country's standing on this environmental issue? How does that compare with where it stood 20 years ago? How does a country compare with the rest of the world? Its neighbours?

(d) Most important, what options are there for responding to the above?

18. Another goal is to provide ready access to tools and information that support two-way assessment processes at a level that is meaningful to decision makers. Examples of such tools and information include the identification of common data and information requirements underpinning national assessments and reporting, national obligations to report on various multilateral environment assessments, emerging thematic assessment domains such as the proposed intergovernmental science-policy platform on biodiversity and ecosystem services, the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects, and the integrated and thematic assessment processes of UNEP. The beneficiaries will be Governments, assessment practitioners and policy makers, which will be better placed to produce assessment findings and to participate in global strategic assessments.

19. The objectives of the framework are:

(a) To increase the use and reuse of the results of existing assessment processes and products;

(b) To provide context in which national capacity-development requirements can be identified and presented as candidates for resource mobilization;

(c) To develop and document institutional mechanisms to establish and maintain a global federation of assessment producers and consumers.

20. The anticipated results will be described in following sections describing the phased step-wise implementation.

III. UNEP-Live requirements

21. Migrating to a dynamic platform for developing and delivering thematic and integrated environmental assessments, in ways that improve and increase the use of existing resources while optimizing UNEP programmatic delivery, will require:

(a) Institutional agreement by key partners – especially national Governments – with proposed directions for the development of the framework and a commitment to an agreed set of principles regarding data sharing and access;

(b) Development of a process for UNEP to identify, beginning in 2011, future assessment requirements, including alignment with known drivers such as multilateral environmental agreements and the Intergovernmental Panel on Climate Change and emerging drivers such as the proposed intergovernmental science-policy platform on biodiversity and ecosystem services and the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects;

(c)   Assessment of what support UNEP member States require in respect of environmental assessments, to be reported on to the Governing Council at its twelfth special session, in 2012;

(d)   Building sustainable national capacities – human, institutional and technical – required to meet national and international reporting obligations under regional agreements and global multilateral environmental agreements;

(e)   Establishment of a federation of partners – especially national Governments and regional intergovernmental bodies responsible for existing assets and capabilities such as environmental data repositories, centres of assessment expertise, environmental information networks, and advanced computer facilities – to be convened by UNEP and partners to coordinate the collaborative development of institutional instruments, standards, guidelines and principles of partnership based upon common environmental information needs;

(f)   Partners, including national Governments responsible for strategic assessment processes, willing to engage with UNEP on the basis of mutual, significant, long-term strategic commitment to sustaining the framework;

(g)   Implementation of a strategy for fund-raising to finance both individual phases of the framework's development and its sustainability, once established - perhaps based on a review of existing and innovative models from around the world;

(h)   Implementation with partners of one or more prototypes to provide evidence of the effectiveness and benefits for partners of the proposed UNEP approach, including improved access to assessment findings and results, streamlined data preparation for meeting reporting requirements and improved capacity for participating in UNEP and other assessment processes;

(i)   Establishment of an appropriately funded secretariat body to facilitate coordination and consultations between and with partners, to conduct the assessment of future assessment needs and user requirements and to report regularly on progress.

IV.   Phased approach to implementation

22.   Migration to targeted thematic assessments would be based on an enabling UNEP-Live framework implemented as a global, federated effort building on local, national and regional capacities where they exist, and helping to build them where they do not. The focus would not be on technology development, which is considered to be adequately mature, but rather on the difficult parts of the problem: institutional cooperation and capacity.

23.   The initial focus would be on adapting well-known collaborative models to inspire global participation by subject matter experts in the targeted thematic areas, and to integrate key information sources such as assessment findings, syntheses, summaries and technical briefs, i.e., information rather than data. Subject matter experts from the public and private sectors and the academic community would participate as editors for the thematic areas, topics and categories.

24.   The UNEP-Live framework would be implemented in a phased approach to minimize the cost of participation while maximizing the benefits of existing assessment mechanisms through the refinement and continuous improvement of international standards and best practices. The goal is to achieve migration between 2012 and 2015. Phases could be implemented end-to-end with checkpoints (and possible stop points) between each phase or, conversely, be implemented with some degree of overlap should the Governing Council choose to accelerate the framework's implementation.

25.   Implementation of phases 2 and 3, in particular, will depend entirely on sponsorship and mobilization of funds for their realization.

A.   Phase 1: Consolidation and exploration of future options (2011–2012)

26.   The main goal of phase 1 would be to broaden the use of what already exists as inputs to or the results of environmental assessment processes – data, assessments, information systems, methodologies, expertise, institutional relationships, regional and thematic information-sharing networks and the like. This initial phase would focus on two key tasks: first, a knowledge management task to organize and begin to make UNEP assessment products more accessible and useful; and, second, characterization of UNEP assessment partners and their needs and requirements.

27.   One approach would be to select, for example, an indicator for goal 7 of the Millennium Development Goals, which is also commonly used in state of the environment assessments, to obtain the data from reports over the past 10 years, and display the data and the indicator in a variety of ways. One criterion for selecting this item could be its relevance to the current development of the fifth

Global Environment Outlook report or the Global Chemicals Assessment. Another could be focus on data sources for which UNEP already invests effort collaborating with national providers for input, such as the World Database on Protected Areas and the Global Environment Monitoring System – Water Programme (GEMS-Water).

28.   Employing the approach outlined in the preceding paragraph would tease out issues relating to the availability and flow of data and initiate the process for engaging scientists and experts in policy matters. Steps could then be taken to add indicators and to increase the rate of data acquisition for the initial indicator until the rate of acquisition was near real-time, where feasible and relevant.

29.   Phase 1 would require UNEP and its partners:

(a)   To engage a reference group, whose composition would be determined based on consultation between the secretariat and the Governing Council, through the Global Ministerial Environment Forum, to represent and support decision makers as the users and drivers of the priority themes for UNEP-Live;

(b)   To build a cooperative network of communities (national and regional institutions and existing networks) to ensure the flow and accessibility of a range of common data, information and assessments (to be identified), along with the modelling processes needed to underpin future monitoring and assessment tasks, including in new and emerging domains such as the green economy;

(c)   To facilitate the availability and accessibility of existing assessment findings, syntheses, summaries and technical briefs, by locating, geo-coding and delivering them online;

(d)   To implement a prototype with selected partners to increase accessibility to information by developing tools for locating documents and content, and to identify and facilitate common information and data streams to streamline processes for complying with national, regional and international assessment and reporting requirements;

(e)   To start the development of elaboration mechanisms so that they will be ready to use when phase 2 begins. This will include designing an architecture for the framework, developing and testing components and articulating the standards, protocols and accepted methods needed to ensure interoperability in the future;

(f)   To build tools that facilitate access to existing assessments and their methodologies, experience and lessons learned ensuring that links are forged to related capacity-building activities, and to consolidate all UNEP assessment products, including new-generation products such as the Global Environmental Alert Service bulletins, in a compendium of documents, data, methods and analyses, including those in production such as the Global Environment Outlook and the Global Chemicals Outlook, that is distributed throughout UNEP;

(g)   To develop and demonstrate prototype visualization tools.

30.   Phase 1 would make extensive use of existing resources, building on existing data sources in and beyond those of UNEP (e.g., those held by countries and regional organizations) and on related activities in the current UNEP programme of work (e.g., the networking project and the Environmental Data and Indicators Platform project); existing data and information assets (e.g., the Prototype Environmental Assessment and Reporting Landscape, the Global Environment Outlook Data Portal, the World Database on Protected Areas and the Global Environment Monitoring System water programme) and align with the broader knowledge management task areas of UNEP.

31.   The results at the end of phase 1, estimated to last for about one year, would be as follows:

(a)   Selected assessment partners would be participating in a functioning network with effective coordination, governance and common purpose;

(b)   A road map for the continuing assessment of users' requirements and expectations would be in place;

(c)   A simplified means for locating and using key assessment findings would be in use.

32.   The cost of phase 1 is estimated at $400,000, approximately $250,000 of which would be for developing and demonstrating the prototype.

B.   Phase 2: Elaboration (2012–2013)

33.   The main goal of phase 2 would be to design a future assessment support system that meets defined user needs. A key task during this phase would be the refinement of the assessment and reporting needs and requirements of UNEP and its partners. Phase 2 would require UNEP and its partners:

(a)   To review potential additional users and user needs, including identification and exploration of links to other international processes;

(b)   To investigate and, where possible, tackle intellectual property and other legal issues relating to data and information sharing, licensing and similar matters;

(c)   To develop fully costed implementation plans, including sustainable strategies for delivering environmental data and information services, especially assessment findings, over the foreseeable future and for developing national institutional and technical capacities better to meet national assessment and reporting obligations while increasing participation in strategic global assessment activities;

(d)   To put in place partnerships and collaboration agreements, wherever necessary (for example, national environmental authorities, statistical offices, research institutions and other, able to make data and methodologies available through UNEP-Live). Such actions would require the participation of UNEP legal advisors to determine the correct legal instruments to be used;

(e)   To begin the development of the national institutional and technical capacities needed to meet national assessment and reporting obligations better;

(f)   To demonstrate and communicate prototypes to a wide audience at both the national and international levels;

(g)   To develop a scoping document as a basis for review with potential users and collaborators and design a reference assessment support system model based on the revised scoping document and user feedback;

(h)   To develop a UNEP-Live common language, i.e., semantics, ontologies and data models, which is critical to underpinning the delivery of meaning in UNEP assessment products;

(i)   To test what is built with users at various levels and to and adjust it accordingly.

34.   The end product of phase 2, estimated to last for about two years, will be a fully designed network and technical infrastructure.

C.   Phase 3: Transformation (2014–2015)

35.   The main goal of phase 3 will be to increase the use of UNEP-Live as designed and tested during the previous two phases by UNEP and its partners.

36.   Phase 3 would therefore require UNEP and its partners:

(a)   To continue with the development and expansion of activities that were part of phase 2, to expand them to address new users and to increase and strengthen institutional partnerships and collaboration;

(b)   To continue the development of national institutional and technical capacities to meet national assessment and reporting obligations better;

(c)   To develop new and more sophisticated tools (e.g., models and scenarios), designing them together with other assessment processes and existing and new partners;

(d)   To review continually the value of UNEP-Live to users to ensure cost-effectiveness, to facilitate reporting on its use and impact and to respond to needs;

(e)   To start the migration towards interactive and dynamic assessment delivery;

(f)   To test and calibrate modelling processes and scenario generators against past assessments;

(g)   To drive forward-looking scenarios as a contribution to the identification of emerging environmental issues.

37.   The end product of phase 3, estimated to last for about two years, will be a fully operational UNEP-Live framework, based on institutional cooperation, which will enable migration to targeted and thematic assessments and build capacity in countries for assessment and reporting.

V. Conclusions

38.   Developing and implementing a federated UNEP-Live framework is an ambitious but appropriate and feasible coordination undertaking for UNEP. It can only succeed on the basis of strategic partnerships that ensure that the best possible use is made of existing efforts and that provide a key contribution to the international environmental governance initiative.

39.   If developed, UNEP-Live will bring benefits to countries and other UNEP partners and stakeholders in the form of streamlining the management and exchange of environmental data and information required to meet national, regional and international assessment and reporting requirements, including through capacity-building, while increasing national participation in and contribution to global strategic assessment activities, including the Global Environment Outlook. The cooperative UNEP-Live enterprise will provide increased opportunities for peer-to-peer learning and streamlining capacity-building between UNEP partners.

40.   Partnerships with Governments, regional organizations and the private sector are central to a complex initiative such as UNEP-Live. There are strong preliminary indications that some such stakeholders are willing to accompany UNEP in the development of UNEP-Live, starting with the phase 1 prototype.

41.   The suggested action for consideration by the twenty-sixth session of the Governing Council/Global Ministerial Environment Forum can be found in document UNEP/GC.26/4.

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