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Item 4 (a) of the provisional agenda*

Policy issues: state of the environment

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

Report of the Executive Director[1]

Summary

The present report summarizes the key scientific and policy issues emanating from the assessment and early warning activities of the United Nations Environment Programme (UNEP) that need to be brought to the attention of the Governing Council/Global Ministerial Environment Forum at its twenty-seventh session and also to policymakers at the relevant level.

The issues are drawn from the findings of various integrated and thematic assessments conducted over the past two years at the global and regional levels in response to the UNEP mandate of keeping under review the world environmental situation. In particular the report highlights the findings of the Fifth Global Environment Outlook (GEO-5) report and its Summary for Policy Makers, and which have been presented at the United Nations Conference on Sustainable Development (UNCSD) in Rio de Janeiro to inform the deliberations of the Conference.

The report also provides an update of recent developments in relation to UNEP-Live, the Global Environmental Alert Service (GEAS), Eye on Earth, and the Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA).

* UNEP/GC.27/1.

[1] The mention of firm names and commercial products does not imply the endorsement of the United Nations.

I. Suggested action by the Governing Council

1. The Governing Council may wish to consider the adoption of a decision along the lines suggested by the Executive Director. The suggested action will be submitted separately to the Committee of Permanent Representatives in support of its preparation of draft decisions.

II. Keeping the world environmental situation under review: background on underpinning assessment with sound science

2. The aim of the present report is to provide the Council/Forum with an overview of recent scientific assessment findings, focusing on key policy issues at the global and regional levels, and to highlight related initiatives and processes that support UNEP's core mandate to keep the world environmental situation under review.

3. It should be noted that, at its twenty-seventh session, the Council/Forum has before it a number of associated documents to inform its deliberations, including:

(a) The Fifth Global Environment Outlook (GEO-5) report and its Summary for Policy Makers;

(b) The UNEP *Year Book 2013*, which is presented in document UNEP/GC.27/INF/2,

(c) A progress report on UNEP-Live in response to section III of decision 25/2 (INF/10);

(d) A progress report on the Eye on Earth initiative (INF/11)

(e) A progress report on the Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA) (INF/12).

4. At the United Nations Conference on Sustainable Development (Rio+20) held in Rio de Janeiro, Brazil from 20 to 22 June 2012, Heads of States and Government and high-level representatives renewed their commitments to sustainable development and to ensuring the promotion of an economically, socially and environmentally sustainable future for our planet and for present and future generations. In the outcome document consideration was given to the environmental pillar in the context of sustainable development, and in particular invited the General Assembly at its sixty-seventh session to adopt a resolution strengthening and upgrading UNEP.

5. As the principal body for the environment in the United Nations system, UNEP has a mandate to keep the global environment and causes of environmental impacts under review. UNEP operates at the science-policy interface by ensuring the flow of knowledge from basic and applied research and that it is translated into policy action for the benefit of societies. Importantly, it also encourages the flow of information from the policy arena back to the scientific community.

III. Keeping the world environmental situation under review: summary of findings of assessments conducted at the global, regional, national and city levels since the twenty-sixth session of the Governing Council

A. Global

6. The Fifth Global Environment Outlook report (GEO-5) was launched in Rio de Janeiro, Brazil on 6 June 2012 as well as in 12 other cities worldwide[2]. The negotiated and endorsed GEO-5 Summary for Policy Makers was launched at the 12th Special Session of the GC/GMEF on 20 February 2012. Some of the main messages, findings and response options contained in GEO-5 are as follows.

7. There is evidence of continuing deterioration in many places and international environment and development goals have only been partially achieved. For many goals there was insufficient data to assess the status.

i. **Atmosphere:** Despite attempts to develop low-carbon economies in a number of countries, atmospheric concentrations of greenhouse gases continue to increase to levels likely to push global temperatures beyond the 2°C above the pre-industrial average. Strategies to address

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Panama City, Lima, Washington, New York, London, Brussels, Geneva, New Delhi, Nairobi, Addis Ababa, Bahrain and Beijing

short-lived climate forcers – black carbon, methane and tropospheric ozone – could if implemented widely, significantly reduce the rate of temperature increase in the near term while delivering substantial co-benefits for human health and food security.

ii. **Land:** Pressure on land resources has increased during recent years.. Due to competing demands for food, feed, fuel, fibre and raw materials which are helping to drive deforestation. However, there now is a concerted global effort to create more sustainable land systems.

iii. **Water:** Human water demands, with only limited improvements in efficiency, are increasing and are already unsustainable in many regions. Despite some improvements, water quality remains the largest cause of human health problems worldwide; at the same time, climate change and further population growth are likely to result in even greater water shortages in many regions. Recognition of ecosystem water will help protect life-supporting ecosystem services. Improved water supply and sanitation is probably the single most cost-effective means of reducing water related death and disease globally. Although the MDG 7 target on water supply was met in 2010 and is likely to be met in 2015, the MDG target on sanitation is unlikely to be met by 2015.

iv. **Biodiversity:** The pressure on biodiversity continues to increase. Habitat loss and degradation from agriculture and infrastructure development, over-exploitation, pollution and invasive alien species remain predominant threats. The world failed to reach the Millennium Development Goal (MDG) target of a significant reduction in the rate of biodiversity loss by 2010, however, there has been some progress in terms of policy responses, such as increasing the coverage of protected areas and sharing access and benefits of genetic resources. An opportunity to develop a concerted global approach to stop and reverse the decline of biodiversity is provided by the recent adoption of the strategic Plan for Biodiversity (2011-2020) including the Aichi Biodiversity Targets and acceptance of the Nagoya Protocol on Access and Benefit Sharing.

v. **Chemicals:** Over the last decade, chemical production has shifted to the developing world. Emerging issues requiring better understanding and prompt action to prevent harm to health and the environment and include the sound management of electronic and electrical waste (e-waste), endocrine disrupting chemicals, and plastics in the environment, open burning, and the manufacture of nanomaterials.

8. Where international treaties and agreements have tackled goals with specific, measurable targets—such as the phase out of ozone-depleting substances and lead in petrol—they have demonstrated considerable success. There is a need for clear long-term environment and development targets and for stronger accountability in international agreements.

9. Evidence-based policy-making requires more reliable data. Standardized approaches to data collection are needed, international cooperation and capacity building for collecting data should also be strengthened.

10. GEO-5's regional assessments have identified policy responses based on best practices that have been successfully adopted in one or more regions and that could be made more effective through mainstreaming.

11. There is a need for a greater focus on policies that target the drivers of environmental change – such as population growth and urbanization, unsustainable consumption patterns, fossil fuel-based energy consumption and transport, and globalization.

12. Delivering results requires a combination of technology, investment, governance and management measures, together with sustainable consumption and production patterns. Changes need to be both short- and long-term, and to combine technology, investment and governance measures along with lifestyle modifications grounded in a mindset shift towards sustainability- and equity-based values. The transition process needs to be based on adaptive governance and management should be based on learning-by-doing processes. Even though national and regional responses have begun to address environmental challenges, a polycentric governance approach is needed to attain effective, efficient and equitable outcomes.

13. Environmental responses are attracting greater financial flows but these still fall short of the resources needed. The Organisation for Economic Co-operation and Development (OECD) countries' aid commitments to the three UN conventions on biodiversity, climate and desertification grew from US$5.1 billion in 1999 to US$17.4 billion in 2009. Yet, the cost for developing countries to adapt to climate change alone has been estimated at US$70–US$100 billion a year for 2010–2050.

14. GEO-5 identified strategies and response options that can be implemented at the global level:

i. Framing environmental goals in the context of sustainable development, and monitoring outcomes;

ii. Enhancing the effectiveness of global institutions;

iii. Investing in enhanced capacities for addressing environmental change;

iv. Supporting technological innovation and development;

v. Strengthening rights-based approaches and access to environmental justice through recognition, enforcement and implementation in global and regional institutions;

vi. Deepening and broadening stakeholder engagement; and

vii. A redefinition of wealth that goes beyond Gross Domestic Product to a more sustainable metric could boost the quality of life and well-being of all communities, especially those in developing nations;

15. Two companion publications to the main GEO-5 report were produced which detail how the world and the global environment have changed since the first Rio Conference for Sustainable Development in 1992. The first of these two reports, *Keeping Track of our Changing Environment: from Rio to Rio+20*, highlights major trends in different environmental and other realms (air, land, water, biodiversity, chemicals and wastes, governance, energy, materials use and resource efficiency, technological advances etc.), and demonstrates how few improvements have occurred in the human and physical environment during these two decades. The second report, entitled *Measuring Progress: environmental goals and gaps*, examines 35 international environmental measures to see how useful these have proven to be, or not. The main conclusion is that clear, measurable goals and targets are needed for such advances in governance to be effective, and more/better monitoring data to measure any progress. These two reports are available, respectively, at: www.unep.org/GEO/pdfs/Keeping_Track.pdf and www.grid.unep.ch/products/3_reports/Measuring_Progress.pdf.

16. The Global Chemicals Outlook (GCO): The *Challenges and Responses to the Sound Management of Chemicals Throughout Their Life Cycle - Synthesis Report for Decision Makers* was launched in 2012. The report formulates recommendations to mobilize the attention and action of policy decision makers and key stakeholders in order to strengthen the implementation and the partnership spirit of SAICM. General recommendations focus on institutional, economic and development policy related issues, while more specific, technical and managerial types of recommendations address the main challenges raised in the report related to trends and indicators, economic implications and instruments and approaches.

17. Sound chemicals management is a vital element that underpins each aspect of a green economy and should be integrated not only in the investments in natural capital in the realm of agriculture, fisheries, forest and water. The *Report on the Costs of Inaction on Sound Management of Chemicals, Baseline Assessment* was launched in 2012. A key driver for mainstreaming sound chemicals management is data and information on the costs of inaction and benefits of action for the three pillars of environment, public health and national development planning. The emerging data on the economic consequences related to negative health, environment, and development planning effects of chemicals, although fragmented and difficult to compare, clearly points to substantial costs, and reveals huge economic consequences of unsound chemicals management.

18. Intergovernmental Panel on Climate Change (IPCC): Since the twenty-sixth session of the Governing Council, IPCC has released two special reports, namely: the Special Report on Renewable Energy Sources and Climate Change Mitigation (SRREN), and the Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX). The SRREN assesses existing literature on the future potential of renewable energy for the mitigation of climate change. The report indicates that the technical potential of renewable energy technologies to supply energy services exceeds current demands and that, although renewable energy costs are still higher than existing energy prices, in various settings renewable energy is already competitive. The scenario review in this Special Report indicates that renewable energy has a large potential to mitigate GHG emissions, and that growth in renewable energy will be widespread around the world. A transition to a low-GHG economy with higher shares of renewable energy would imply increasing investments in technologies and infrastructure.

19. The SREX indicates that climate extremes, or even a series of non-extreme events, in combination with social vulnerabilities and exposure to risks can produce climate-related disasters. Some important conclusions delivered by the SREX include: (i) Medium confidence in an observed increase in the length or number of warm spells or heat waves in many regions of the globe; (ii) likely increase in frequency of heavy precipitation events or increase in proportion of total rainfall from heavy falls over many areas of the globe, in particular in the high latitudes and tropical regions, and in winter in the northern mid-latitudes; (iii) medium confidence in projected increase in duration and intensity of droughts in some regions of the world, including southern Europe and the Mediterranean region, central Europe, central North America, Central America and Mexico, northeast Brazil, and southern Africa. The report also provides improved differentiation of observed and projected changes in extremes of temperature, precipitation and drought across the continents of the globe.

B. Regional

20. The third Africa Environment Outlook (AEO-3) Report was launched in 2013. The theme of the report is health and environment interlinkages. The key messages from the report include the following:

i. **Indoor air pollution** is a profound health problem in Africa, but it has been inadequately addressed.

ii. **Biodiversity** is a crucial provider of goods and services which promote human health.

iii. **Use of chemicals** has beneficial and negative effects on human health.

iv. **Widespread poverty** limits people's capacity to cope with a changing climate, impacting their health.

v. **Access to safe water** and adequate sanitation need to be scaled up by eliminating poor infrastructure, polluted water sources, poor hygiene, cultural taboos and gender disparities.

vi. **Sustainable land management** provides the resource base for the delivery of ecosystems services – the food, fibre and medicines – central to human health.

21. The *Resource Efficiency-Economics and Outlook for Asia and the Pacific* report highlights the dynamic growth of the region over the past few decades, which has reduced poverty and increased wealth and per capita incomes. However, this has come at a price that is "exacting a high –current and future-- environmental cost. Problems include pollution including greenhouse gas emissions, biodiversity loss, deteriorating ecosystems and rapid resource depletion". Asia Pacific currently accounts for more than half of the world's total resource use—in large part because it also accounts for over half the world's population and nearly 30 per cent of the world's GDP. The report underlines that Asia Pacific has however enormous opportunities to dramatically improve resource efficiency and in doing so boost economic growth, generate new kinds of clean tech industries and reduce if not overturn costs linked with environmental degradation.

22. The *Pacific Environment and Climate Change Outlook* report: UNEP supported the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Pacific Island Countries cooperated on this integrated environmental assessment and reporting process in the Pacific. The report examined progress and experience of 22 Pacific Island Countries and Territories in implementing sustainable development and addressing environmental challenges since the 1992 Earth Summit on Environment and Development. The report was endorsed by 23rd SPREP Meeting of Officials, in September 2012 in New Caledonia as the region's official state of environment (SoE) report, and is expected to be launched at the UNFCCC COP18 (Qatar, November 2012).

23. The *Freshwater under Threat – Pacific Islands* report: This vulnerability assessment of freshwater resources to environmental change was produced through collaboration between UNEP and the Secretariat of the Pacific Islands Applied Geoscience Commission (SOPAC). The main finding is that the greatest vulnerability in the lack of water resources in low-lying islands, exacerbated by limited human, financial and management resources, and increasing population densities. This new analysis for selected islands also concludes that the Pacific island nations' economies, fragile ecosystems and peoples' livelihoods are particularly vulnerable to climate variability and change pressures. Evidence-based options are presented to address resource, development, environment and management pressures and to target the reduction of these vulnerabilities.

24. The *Vulnerability Assessment of Freshwater Resources to Climate Change: Implications on Shared Water Resources in West Asia Region* report was published in 2012. This national and regional vulnerability assessment contributes to a better understanding of freshwater resources vulnerability to threats and its impacts on development options, human well-being and the environment in West Asia. It identifies the potential impacts of climate change on water resources and assesses the current adaptive capacity of the water sector. It also provides decision makers with strategic responses and policy options to improve water resource management including adaptation measures. The report is available at: http://www.unep.org/dewa/westasia/documents/Vulnerability%20Report.pdf.

25. *Environment Outlook for the Arab Region (EOAR)*: UNEP has finalised the English translation of the first Environment Outlook for the Arab Region (EOAR) which is the first official, comprehensive, and integrated assessment of the state of environment in the Arab region. It is a credible, scientific assessment that provides a base for policy formulation in the region. The report is a milestone and key reference for regional environment work. The report is available at: http://www.unep.org/dewa/westasia/eoar/.

26. *Arab Millennium Ecosystem Assessment Synthesis Report*: The Synthesis Report presents an integration of the findings of the Arab region sub-global assessment, highlighting the commonalities and differences between the three focal sites and how they relate to the national, regional and global ecosystem. The report also presents more detailed findings for selected ecosystem services concerning condition and trends and scenarios, and response options.

27. In Latin America and the Caribbean, the tenth anniversary of the GEO Cities initiative, was marked by the publication in 2012 of *GEO cities: 10 years of urban integrated environmental assessment in LAC*. Ten years after starting the development of the GEO Cities reports in LAC, national and local capacities for integrated environmental assessments have been strengthened and the commitment of local authorities and decision makers has grown to include environmental issues in their work programs. This publication presents the main findings of the 46 reports produced in the past decade in LAC using the GEO participatory methodology for Integrated Environmental Assessment. The report is available in Spanish at: http://www.pnuma.org/deat1/pdf/Geo_Ciudades%281-147%29WEB11mayo.pdf.

28. UNEP, with the technical support of the Mercosur Economic Research Network, prepared a report entitled *Resource Efficiency in Latin America: Economics and Outlook* in order to assess the region's progress towards greater resource efficiency and sustainable development. The study focused on three thematic areas, based on their importance in Latin America: land use changes, energy and climate change, and water use. From the trends observed, four regional scenarios were built for 2010-2030 in order to identify viable alternatives to eventually make the best use of the region's potential. The report is available in English and Spanish at: http://www.pnuma.org/reeo/.

29. *REEO for EECCA*: Production of a Resource Efficiency and Economic Outlook (REEO) report for the countries of Eastern Europe, the Caucasus and Central Asia was published in 2012. The objective of this report was to examine material flows in the major economic sectors, analyse recent trends and identify where efficiencies could be gained within the region.

IV. Early Warning of environmental threats and emerging issues

30. Early warning and new emerging issues were identified across thematic areas and levels. The main products used to highlight issues are the UNEP Year Book, Atlases and Early Warning Bulletins.

31. The *UNEP Year Book 2013* is presented to the Council/Forum in information document UNEP/GC.27/INF/2. The year 2012 marked the 10th anniversary of the UNEP Year Book series of reports.

32. The *Arab Region: Atlas of Our Changing Environment*, currently being finalized, is a unique and powerful publication which will bring to light stories of environmental change at more than 80 locations across the Arab region. Using a combination of ground photographs, current and historical satellite images, and narrative based on extensive scientific evidence, the atlas illustrates how humans have altered their surroundings and continue to make observable and measurable changes to the Arab region and its environment.

33. Monthly *Early Warning Bulletins* on key emerging environmental and related issues were prepared and circulated to a list of recipients which has now reached approximately 20,000 users globally. Some of the titles of recent bulletins are:

- The end to cheap oil - a threat to food security and agriculture
- The need for numbers: Rio+20 and goals, indicators and targets for sustainable development
- Keeping track of our changing environment; from Rio to Rio+20
- One planet, how many people?
- Measuring progress - environmental goals and gaps

34. In addition, an in-depth report entitled *The Policy Implications of Warming Permafrost* is expected to be launched at the UNFCCC Climate Change Conference of Parties CoP-18 (Qatar, November 2012).

35. The *Latin America and the Caribbean Atlas of Vulnerability to Climate Change*, which is currently under development, will provide graphic and easy to understand information about vulnerability to climate change in the region with particular emphasis of the exposure component of vulnerability and examples of good practices implemented in the region for adapting to climate change.

V. Intergovernmental and multi-stakeholder processes, platforms, partnerships and networks

36. Assessment processes constitute a fundamental component of UNEP's response to its core mandate to keep the world environmental situation under review. However, they must be underpinned by institutional networks, partnerships and multi-stakeholder collaborative mechanisms that also provide a number of support functions such as facilitating access to, and sharing of, environmental data and information that provide key services to a wider range of clients at various levels of decision-making from global down to local.

A. Multi-stakeholder processes

37. GEO-5 process: The development of GEO-5 involved extensive collaboration both within UNEP, and between UNEP and a network of multi-disciplinary experts, research institutions and GEO collaborating centres, all of whom made their valuable time and knowledge available to the process.

38. Authors on the GEO-5 report were nominated by governments and other stakeholders including GEO collaborating centres, based on their expertise and using a transparent process drawing from the IPCC nomination process. The nominated experts were then engaged by the Secretariat based on their expertise and including gender and regional balance.

39. Three external specialized advisory bodies were established to support the assessment process.

a. The High Level Intergovernmental Advisory Panel comprised of 20 government representatives from all six UNEP regions. The Panel identified the internationally agreed goals to be assessed, and provided strategic advice to GEO-5 authors and experts in assessment of the goals.

b. The Science and Policy Advisory Board comprised of 18 scientists and representatives from the policy community. The Board was responsible for strengthening the scientific credibility and policy relevance of the assessment by providing guidance throughout the process.

c. The Data and Indicators Working Group provided support to the assessment process on the use of core data sets and indicators.

40. The GEO-5 assessment underwent three rounds of review involving over 300 experts drawn from Governments, the science community and the UN system, covering both the natural and social sciences. The final round of expert review was an independent peer-review process facilitated by the Earth System Science Partnership (ESSP). Regional Consultations held in each of the seven UNEP regions, engaged many different stakeholders, identified five to six priority environmental challenges in each region and selected internationally agreed goals of relevant concern, as well as identified potential policy options in the region. The final open-ended intergovernmental meeting convened in January 2012 in the City of Gwangju, Republic of Korea, negotiated and endorsed the GEO-5 Summary for Policy Makers (SPM).

41. Foresight process: The report on the outcome of the UNEP Foresight Process on Emerging Environmental Issues was a collaborative process that brought together over 400 scientists worldwide and resulted in the identification of 21 Emerging Environmental Issues and published in the report entitled *21 Issues for the 21st Century*. UNEP is now planning a similar *Foresight Process for Indigenous Communities* aimed at identifying emerging environmental issues that are of priority to these communities, and therefore informing policies related to them.

42. GRAME process: Through its resolution 65/37 of 7 December 2010 the General Assembly endorsed the recommendations adopted by the Ad Hoc Working Group of the Whole on the modalities for the implementation of the Regular Process. The General Assembly decided that the Regular Process, as established under the United Nations, was accountable to the General Assembly and should be an intergovernmental process guided by international law, including the United Nations Convention on the Law of the Sea and other applicable international instruments, and take into account relevant General Assembly resolutions. The United Nations Environment Programme (UNEP), the Intergovernmental Oceanographic Commission of UNESCO (IOC/UNESCO), the International Maritime Organization (IMO) and the Food and Agriculture Organization of the United Nations (FAO), and other competent United Nations specialized agencies, as appropriate have been invited to provide technical and scientific support to the Regular Process. In response, UNEP is providing support in the area of capacity building, communication, assessments and resource mobilization.

43. UNEP has also provided support to the Regular Process Trust Fund to support Experts from developing Countries to participate in the World Ocean Assessment. In cooperation with UNEP/GRID-Arendal, a communication portal and a dedicated website including a document management system has been developed to assist with delivering the first integrated Regular Process Report, which is scheduled for completion by 2014.

44. Transboundary Water Assessment Programme (TWAP) process: TWAP is a UNEP coordinated GEF funded project under the GEF Transboundary International Waters Assessment Programme.. The TWAP Medium Size Project (MSP) produced methodologies for assessing transboundary water systems, published as *Methodology for the Assessment of transboundary Aquifers, Lake basins, River basins, Large Marine Ecosystems and the Open Ocean* and available at (http://twap.iwlearn.org/publications/databases/view). The TWAP process identifies the most serious water problems or emerging water issues worldwide and the TWAP indicators provides a tracking tool to assess the impact of interventions in promoting more effective use of resources and addressing transboundary concerns and water conflicts between countries.

B. Platforms, partnerships and networks

45. UNEP-Live: In response to Decision 26/2, UNEP is developing in collaboration with a wide array of partners, the web-based platform called UNEP-Live to promote access and use of environmental information for keeping the state of environment under review. A proof-of-concept prototype, available at this link: www.uneplive.org, has been developed with key support from ESRI, the European Environment Agency, and the Eye on Earth partnership, and presents environmental data and indicators, as well as information on environmental assessments.

46. UNEP-Live will enable governments and the public to access environmental data, indicators and assessment findings, including emerging issues, and policy reviews. As part of UNEP's broad capacity-building activities, UNEP-Live will enable countries to deliver up-to-date State of the Environment reporting based on a common set of priority data and indicators harvested through national monitoring processes. Additionally, UNEP-Live will support assessment tasks of UNEP by improving efficiency and cost effectiveness of assessment processes and data exchange. The online platform will also facilitate wide participation in consultations underpinning assessment processes.

47. A phased approach is being taken towards the implementation of UNEP-Live. The initial focus is on organizing UNEP's assessment products and supporting UNEP-led assessment processes. The next phase addresses capacity development at national and regional levels for environmental assessment and reporting under a revitalized capacity building programme in accordance with the Bali Strategic Plan. A partnership between UNEP and Environment Agency Abu Dhabi (EAD) is developing a deployable software toolkit for supporting the management of data and State of the Environment reporting. Governments will be able to choose for information generated by national toolkits to be available for integration into regional analyses, or into global services including UNEP-Live, thus helping to fill important data gaps.

48. The "My Country" component of UNEP-Live will provide access to national level data and information, including that from the national platforms, and a collaborative platform called "SOE-Live" will facilitate dynamic reporting on the state of the environment. The African Ministers of Environment at their 14th Regular Session (AMCEN 14, September 2012) endorsed the development of AEO-live as a platform for sharing environmental information in Africa. When fully developed, AEO-Live and UNEP-Live will complement each other entirely. Further information on the implementation of UNEP-Live, including elements of a business plan and a costing, is presented to the Council/Forum for consideration in information document UNEP/GC.27/INF/10)

49. Eye on Earth: In follow-up to the Eye on Earth Declaration (Abu Dhabi, December 2011), UNEP in collaboration with the Environment Agency Abu Dhabi has established the joint Secretariat to oversee the implementation of the eight Special Initiatives and commitments of the Eye on Earth Summit, aimed at bridging the environmental knowledge gap by connecting and strengthening existing network initiatives. Further information on the Eye on Earth initiative is provided in information document UNEP/GC.27/INF/11).

50. Particularly pertinent to UNEP-Live is the special initiative Eye on Global Network of Networks, a partnership with over thirty governmental, non-governmental, inter-governmental, commercial, not-for-profit and academic partner agencies. It provides guidance on the technical protocols, standards and practices that ensure that UNEP-Live will most efficiently and effectively interlink with the national platforms. It also provides access to information technologies that will enable UNEP-Live to complement other global (such as GEO/GEOSS) and regional environmental information sharing activities, such as the European Environment Agency's EIONET, and the Africa Environment Information Network (AEIN). AEIN is a framework to increase access to environmental information and support policy and development planning at national and regional level. It is being strengthened and the process is taking on board lessons from like-minded networks, including EIONET. The key areas of focus include improving the use of common standards, strengthening national capacities for information management, building partnerships with African and other centres of excellence, support for the development of products that increase the integration of the environmental dimension in national development planning, and enabling increased access to information.

51. Global Environmental Alert Service (GEAS): UNEP provides an important environmental early warning service — the Global Environmental Alert Service (GEAS) which focuses on identifying and communicating on emerging environmental issues to raise public awareness. GEAS provides timely information on such threats to governments, humanitarian groups and civil society, media enabling them to act in response to adverse impacts on the well-being of people and on the services that different ecosystems provide. GEAS is also integrated with UNEP-Live. Monthly Global Environment Alert Bulletins are distributed widely through email and website postings to Member States, decision makers, staff and community. The bulletins document visual evidence of global environmental change resulting from natural processes and human activities and the interaction between them. The "change studies" are described and analyzed through photographs, satellite images, maps and narratives that provide insight into the many ways and places the environment has changed and continues to be modified.

52. GEAS will continue to provide the global community with access to dynamic and compelling, easy to understand, policy-relevant information about environmental changes as they occur with the goal of mitigating environmental harm. In the next phase of its development, GEAS will aim to (1) increase its capacity to disseminate timely information through a dedicated, single website interface equipped with a feedback mechanism, (2) automate real-time alerts to email to all GEAS users with links to real-time web mapping visualization, and (3) add a capacity building component to help develop national research, monitoring and assessment capacity.

53. Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA): PROVIA addresses the lack of international coordination of research on climate change vulnerability, impacts and adaptation (VIA), and identifies research gaps and initiates processes to close them. It responds to the call by the scientific community for a more cohesive and coordinated approach on VIA research works, and the critical needs to harmonize, mobilize, and communicate the growing knowledge-base on vulnerability, impacts and adaptation. United Nations Environment Programme (UNEP) took the initiative to establish PROVIA and currently provides it with secretariat support. PROVIA serves a new and growing network of scientists, practitioners and decision-makers working towards identifying research gaps and meeting policy needs in climate change vulnerability, impact and adaptation research in collaboration with its implementing partners.

54. The PROVIA Work Programme for 2010-11 (Initial Phase) consisted of four priority activities, agreed by the Interim Scientific Steering Committee. Two important publications have been issued: 1) Global VIA research priorities - the gap analysis of this work is based on a broad range of sources including the Intergovernmental Panel on Climate Change (IPCC) Working Group Reports, peer-reviewed articles; books; white papers; and conference, workshop, and meeting proceedings, presentations and notes, and 2) the revised VIA guidelines and assessment tools that need to be delivered to governments, international agencies and individual experts. PROVIA is critical in filling the knowledge gaps identified in IPCC reports, and will provide a platform to coordinate research in an efficient and cost effective manner. Further information on PROVIA is provided in information document UNEP/GC.27/INF/12.

VI. Technology support and capacity-building

55. The Bali Strategic Plan for Technology Support and Capacity-building provides the overarching framework for UNEP's support to countries. The development of tools and methodologies to keep the world environmental situation under review and the application of these tools remains a primary focus at the global, regional and national levels.

A. Tools and methodologies

56. Existing tools and methodologies are updated continuously, customized for regions and made available in different languages, subject to the availability of resources. New tools and methodologies are developed in response to users' needs.

57. The Integrated Environmental Assessment Community Platform (IEACP) (www.unep.org/ieacp/) includes an eight-volume on-line training manual in integrated environmental assessment, including aspects such as data and indicators, and scenarios, which governments and other partners conducting assessments can use to guide the process. IEACP also includes thematic modules (e.g., on climate change, freshwater resources and the ecosystem approach) as well as tailored regional and language versions. UNEP, together with the Caribbean Community and Common Market (CARICOM), the International Institute for Sustainable Development (IISD) and other partners recently finalized a module on the use of integrated environmental assessment tools for achieving national and sectoral development policies and improved implementation of multilateral environmental agreements (MEA) and associated policy review. This module is available at (http://www.unep.org/ieacp/files/pdf/mea/IEA_Training_Module_MEAs.pdf)

58. The GEO Cities Manual/Guidelines for Integrated Environmental Assessment of Urban Areas, developed for the Latin America and Caribbean region, has been customized to the Arab region and translated into Arabic. The manual provides a step-by-step approach to the GEO Cities methodology and the IEA process in order to build capacity in the Arab Region for integrated environmental assessment and reporting at city and local levels. In addition, a course on Strategic Environmental Assessment (SEA) has been developed for the Latin America and Caribbean region.

B. Capacity-building interventions

59. Technology support and capacity-building interventions are carried out at the global, regional and national levels in support of environmental assessment and early warning and in response to the Bali Strategic Plan.

60. In Africa, MENTOR is providing support for the development of the Pan-Africa e-Learning for the Environment Network (www.unep.org/mentor/africa) in response to decision 6, on environmental

education and technology-supported learning, adopted by the 12th Session of the African Ministerial Conference on the Environment (AMCEN). Training was conducted in 18 African countries and the Network is now operational through a set of sub-regional hubs and national centres. Additional outcomes from this process include the development of an e-learning strategy for the environment sector in Kenya, covering over 20 institutions, and the development of guidelines on e-waste which will culminate in a government regulation on e-waste management.

61. UNEP has provided technical support and capacity building for development of the South Asia Environment Outlook 2013/14 under the auspices of the South Asian Association for Regional Cooperation (SAARC). The process will identify emerging issues and provide recommendations for timely action to address the priority issues identified. The process will benefit from another capacity building project by UNEP and the South Asia Co-operative Environment Programme (SACEP) to establish an Environmental Data and Information Management System for South Asia, which still requires funding.

62. Technical assistance and capacity development support is being provided to Bangladesh, Bhutan, Myanmar, Pakistan and Papua New Guinea using the Integrated Environmental Assessment (IEA) approach to review environmental state and trend and their impacts on human well-being and economic development, to support informed decision-making processes at national level.

63. UNEP is providing support to countries in West Asia for the development of National Environment Outlooks, providing IEA training and facilitating Iraq, Saudi Arabia their State of the Environment (SoE) reports. Training on IEA includes introducing the concept, the methodology, and the practical application of developing a framework for the process.

VII. Strengthening the Science-Policy interface (in response to Rio+20 outcome statement *The Future We Want*)

64. Through its numerous thematic and global assessments (GEO, AEO, etc), panels (REP, etc) and information networks (AEIN, etc) UNEP establishes connections between the scientific and policy-making communities to help make environmental research and scientific information more policy relevant and policy development and implementation more science based. The final outcome document, *The Future We Want*, of the United Nations Conference on Sustainable Development (UNCSD) held in Rio de Janeiro in June 2012 called for strengthening UNEP's role including its role in promoting a strong science-policy interface.

65. UNEP will engage its experience and track record in integrated assessments, collection and management of data and indicator as well as fairly developed monitoring and reporting efforts to leverage and spearhead the global effort requested by UNCSD in bringing together dispersed information and assessments, including in the form of a global sustainable development report, building on existing assessments. The methodological approaches developed and tested in established processes will be offered as a spring board for achieving the goals of strengthening ongoing efforts of capacity-building for data collection and analysis in developing countries.

66. A proposed outcome of Rio+20 is for policy makers to elaborate a series of universal sustainable development goals with the view of complementing and addressing the shortcomings of current Millennium Development Goals (MDGs). Recognizing the need for global, integrated and scientifically based information on sustainable development, and its mandate and experience in convening, collecting and compiling evidence-based information, UNEP will contribute to setting clear and targeted goals for sustainable development goals (SDGs), to analyzing current commitments and goals, identifying priority areas and tracking and monitoring implementation of goals.

67. The *Core Set of Sustainable Development Indicators for the Arab Region*, which has been translated into Arabic, provides guidelines for the development and use of environmental and sustainable development indicators for the Arab region. The guidelines provide the basis for the countries of the region to develop their national cores set of sustainable development indicators. Several countries in the region have now embarked on developing those indicators.

68. *Regional Indicators Revision of the ILAC Initiative*: This publication presents regional data drawn from the indicators used in the Latin American and Caribbean Initiative for Sustainable Development (known by its Spanish acronym ILAC). This set of indicators covers, among other issues, those related to biodiversity, human development, human settlements, institutional arrangements, and consumption and production patterns. The indicators provide a tool to gauge the progress that Latin America and the Caribbean (LAC) has made with regard to sustainable development, and supplies information on a number of environmental trends that demand more immediate attention. The report is available in English and Spanish: www.geodatos.org.

VIII. Conclusion

70. In the 2014-15 biennium, a new sub-programme entitled *Environment Under Review*, will take an holistic approach towards addressing UNEP's core mandate of keeping under review the world environmental situation. Bringing together critical work that was previously embedded in other subprogrammes, this new subprogramme will aim to enhance integrated assessment, interpretation and coherence of environmental, economic and social information to assess the environment, identify emerging issues, and track progress towards environmental sustainability, including targets such as the Aichi biodiversity targets, to facilitate global policy-making. UNEP will work to support capacity building efforts in developing countries that commit to environmental monitoring and commit to post environmental data and information on public platforms in line with Principle 10 of the Rio Declaration. Furthermore, UNEP will work towards increased participation of stakeholders in environmental decision-making processes, including the generation, analysis, packaging, availability and dissemination of integrative environmental information, in accordance with the outcome of UNCSD.