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**Governing Council
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Environment Programme**

**Twenty-seventh session of the Governing Council/
Global Ministerial Environment Forum
Nairobi, 18–22 February 2013**
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 of 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 report and its summary for policymakers, which were presented at the United Nations Conference on Sustainable Development to inform the deliberations of the Conference.

The report also provides a summary of recent developments in relation to UNEP-Live, the Eye on Earth initiative and the Programme of Research on Climate Change Vulnerability, Impacts and Adaptation. More detailed information on these initiatives is set out in the UNEP *Yearbook 2013* (see UNEP/GC.27/INF/2) and in other related information documents.

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* UNEP/GC.27/1.
[1] The mention of names of firms and commercial products does not imply the endorsement of the United Nations.

I. Suggested action by the Governing Council

1.   The Governing Council of the United Nations Environment Programme 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 UNEP Committee of Permanent Representatives for its use in the preparation of draft decisions for consideration by the Council.

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

2.   The aim of the present report is to provide the Governing Council/Global Ministerial Environment 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 the core mandate of UNEP to keep the world environmental situation under review.

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

(a)   The fifth Global Environment Outlook report and its summary for policymakers;

(b)   The UNEP *Yearbook 2013* (see UNEP/GC.27/INF/2);

(c)   A progress report on UNEP-Live in response to section III of decision 25/2 (UNEP/GC.27/INF/10);

(d)   A progress report on the Eye on Earth initiative (UNEP/GC.27/INF/11);

(e)   A progress report on the Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (UNEP/GC.27/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 State 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 for present and future generations. In the outcome document of the Conference,[2] consideration was given to the environmental pillar in the context of sustainable development, and the General Assembly was invited to adopt, at its sixty-seventh session, 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 that knowledge flows 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 was launched in Rio de Janeiro and 12 other cities worldwide on 6 June 2012.[3] Its negotiated and endorsed summary for policymakers was launched at the twelfth special session of the UNEP Governing Council/Global Ministerial Environment Forum, on 20 February 2012. The main messages, findings and response options contained in the report include the following:

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[2] General Assembly resolution 66/288, annex.

[3] Addis Ababa, Beijing, Brussels, Geneva, Lima, London, Manama, Nairobi, New Delhi, New York, Panama City and Washington, D.C.

(a)   There is evidence of continuing environmental deterioration in many places and international environmental and development goals have been only partially achieved. There was insufficient data to assess the status of many of those goals:

(i)   **Atmosphere**. Atmospheric concentrations of greenhouse gases continue to increase to levels likely to push global temperatures beyond 2 degrees Celsius above the pre-industrial average. Strategies to address short-lived climate pollutants, including black carbon, methane and tropospheric ozone, could, if implemented widely, significantly reduce the rate of temperature increase in the near term while delivering substantial benefits for human health and food security;

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

(iii)   **Water.** Human water demands are increasing, with only limited improvements in efficiency, and are already unsustainable in many regions. Despite some improvements, water quality remains the largest cause of human health problems worldwide, and climate change and further population growth are likely to result in even greater water shortages in many regions. Improved water supply and sanitation is probably the single most cost-effective means of reducing water-related deaths and disease globally. Although the target of the seventh millennium development goal was met in 2010 with regard to water supply and is likely also to be met in 2015, the target for sanitation is unlikely to be met by 2015;

(iv)   **Biodiversity.** The pressure on biodiversity continues to increase. Habitat loss and environmental degradation as a result of agricultural and infrastructural development, over-exploitation, pollution and invasive alien species remain predominant threats. There has been some progress in terms of policy responses, such as increasing the coverage of protected areas and sharing access to and the benefits of genetic resources. The adoption of the Strategic Plan for Biodiversity 2011–2020, including the Aichi Biodiversity Targets, and the acceptance of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization also provide an opportunity to stop and reverse the decline of biodiversity;

(v)   **Chemicals.** Over the past decade, chemical production has shifted to the developing world. Emerging issues that need to be better understood and require prompt action to prevent harm to health and the environment include the sound management of electronic and electrical wastes (e-waste), endocrine-disrupting chemicals, plastics in the environment, open burning and the manufacture of nanomaterials;

(b)   When international treaties and agreements have tackled goals with specific and 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 environmental and development targets and for stronger accountability in international agreements;

(c)   Evidence-based policymaking requires more reliable data. Standardized approaches to data collection are needed and international cooperation and capacity-building for collecting data should be strengthened;

(d)   The fifth Global Environment Outlook regional assessments have identified policy responses based on best practices that have been successfully adopted in one or more regions that could be made more effective through mainstreaming;

(e)   There is a need for greater focus on policies that target the drivers of environmental change;

(f)   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 the transition process needs to be based on adaptive governance. 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;

(g)   Environmental responses are attracting greater financial flows, but these still fall short of the resources needed. The most significant source of environmental financing is official development assistance from the countries of the Organization for Economic Cooperation and Development. These aid commitments, which support the objectives of the United Nations

conventions on biodiversity, climate change and desertification, grew from $5.1 billion in 1999 to $17.4 billion in 2009. The same countries allocated $22.9 billion to official development assistance for climate change mitigation and adaptation in 2010. Nevertheless, the cost for developing countries to adapt to climate change alone has been estimated at between $70 billion and $100 billion a year for the period 2010–2050.

7.   The fifth Global Environment Outlook report identifies the following strategies and response options that can be implemented at the global level:

        (a)   Framing environmental goals in the context of sustainable development, and monitoring outcomes;

        (b)   Enhancing the effectiveness of global institutions;

        (c)   Investing in enhanced capacities for addressing environmental change;

        (d)   Supporting technological innovation and development;

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

        (f)   Deepening and broadening stakeholder engagement;

        (g)   Redefining wealth in terms of a more sustainable metric that goes beyond gross domestic product could boost the quality of life and well-being of all communities, especially those in developing nations.

8.   Two companion publications to the fifth Global Environment Outlook report were produced which provide information about how the world and the global environment have changed since the United Nations Conference on Environment and Development, held in 1992. The first, *Keeping Track of our Changing Environment: From Rio to Rio+20,*[4] highlights major trends in a number of areas, including air, land, water, biodiversity, chemicals and wastes, governance, energy, the use of materials and resource efficiency, and shows how little improvement has occurred in the human and physical environment over the past two decades. The second, *Measuring Progress: Environmental Goals and Gaps,*[5] examines the effectiveness of 35 international environmental measures with a view to determining how useful they have proved to be. The main conclusion is that clear and measurable goals and targets are needed if advances in governance are to be effective. In addition, there is a need for more comprehensive monitoring of data to measure progress.

9.   The data on the state and trends of the environment and the policy solutions proposed in the fifth Global Environment Outlook report offer an extensive repository of knowledge for policymakers to inform their decisions, support national priorities and identify solutions to national problems.

10.   The Global Chemicals Outlook report, *Towards Sound Management of Chemicals: Synthesis Report for Decision Makers*, was launched in 2012. The report formulates recommendations to mobilize the attention and action of policymakers and key stakeholders to strengthen the implementation and the partnership spirit of the Strategic Approach to International Chemicals Management. General recommendations focus on issues related to institutional, economic and development policies, while more specific technical and managerial recommendations address the main challenges with regard to trends and indicators, economic implications and instruments and approaches.

11.   Sound chemicals management is a vital element that underpins each aspect of a green economy and should be integrated into investments in natural capital in the realm of agriculture, fisheries, forest and water. The report entitled "Baseline assessment report on the costs of inaction on sound management of chemicals", to be launched in early 2013, states that a key driver for mainstreaming sound chemicals management is data and information on the costs of inaction and the benefits of action with regard to the three pillars of the environment, public health and national development planning. The emerging data on unsound chemicals management in the areas of health, environment and development planning, although fragmented and difficult to compare, clearly reveal that there are substantial costs and huge negative economic consequences.

12.   Since the twenty-sixth session of the Governing Council, the Intergovernmental Panel on Climate Change has released two special reports, *Renewable Energy Sources and Climate Change Mitigation* and *Managing the Risks of Extreme Events and Disasters to Advance Climate Change*

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[4] Available at www.unep.org/GEO/pdfs/Keeping_Track.pdf.

[5] Available at www.unep.org/geo/pdfs/geo5/Measuring_progress.pdf.

Adaptation. The first assesses existing literature on the future potential of renewable energy for the mitigation of climate change. It indicates that the technical potential of renewable energy technologies to supply energy services exceeds current demand and that renewable energy is already competitive in various settings, although its costs are still higher than existing energy prices. Reviewing a number of scenarios, it shows that renewable energy has a large potential to mitigate greenhouse gas emissions, and that growth in renewable energy will be widespread around the world. A transition to a low-greenhouse gas economy with higher shares of renewable energy would imply increasing investment in technologies and infrastructure.

13.   The second report indicates that climate extremes, or a series of non-extreme climate events, in combination with social vulnerabilities and exposure to risks can produce climate-related disasters. Important conclusions contained in the report include the following: (a) medium confidence in an observed increase in the length or number of warm spells or heat waves in many regions of the globe; (b) a likely increase in the frequency of heavy precipitation events or an increase in the proportion of total rainfall from heavy falls over many areas of the globe, in particular in the high latitudes and tropical regions, and in the northern mid-latitudes during winter months; (c) medium confidence in a projected increase in the duration and intensity of droughts in some regions of the world, including southern Europe, the Mediterranean, central Europe, central North America, Central America and Mexico, north-eastern Brazil and southern Africa. The report also provides improved differentiation of observed and projected changes in extremes of temperature, precipitation and drought across continents.

B.   Regional

14.   The third Africa Environment Outlook report was launched in 2011, on the theme of health and environment interlinkages. The key messages included the following:

          (a)   Indoor air pollution is a profound health problem in Africa, but it has been inadequately addressed;

          (b)   Biodiversity is a crucial provider of goods and services that promote human health;

          (c)   The use of chemicals has both beneficial and negative effects on human health;

          (d)   Widespread poverty limits people's capacity to cope with a changing climate, impacting their health;

          (e)   Access to safe water and adequate sanitation needs to be scaled up by eliminating poor infrastructure, polluted water sources, poor hygiene, cultural taboos and gender disparities;

          (f)   Sustainable land management provides the resource base for the delivery of the ecosystem services (food, fibre and medicines) that are central to human health.

15.   The report *Resource Efficiency: Economics and Outlook for Asia and the Pacific* highlights the dynamic growth of the region over the past few decades, which has reduced poverty and increased wealth and per capita income. 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. The Asia-Pacific region currently accounts for more than half of the world's total resource use, mainly because it also accounts for over half of the world's population and nearly 30 per cent of the world's gross domestic product. The report underlines the fact that the Asia-Pacific region has, however, enormous opportunities to dramatically improve resource efficiency and thereby boost economic growth, generate new kinds of clean technology industries and reduce, if not eliminate, costs linked with environmental degradation.

16.   UNEP supported the secretariat of the South Pacific Regional Environment Programme (SPREP) and other regional partners in the preparation of an integrated environmental assessment for the Asia-Pacific region, *Pacific Environment and Climate Change Outlook*. The report examines the progress and experiences of 22 Pacific island countries and territories in implementing sustainable development and addressing environmental challenges since the United Nations Conference on Environment and Development, held in 1992. The report was endorsed by member countries at the twenty-third SPREP Meeting of Officials, held in Noumea, New Caledonia, in September 2012, as the region's official state of the environment report, and was launched at the eighteenth Conference of the Parties to the United Nations Framework Convention on Climate Change, held in Qatar, in November 2012.

17.   The report *Freshwater under Threat: Pacific Islands* was produced by UNEP and the Applied Geoscience and Technology Division of the secretariat of the Pacific Community. Pacific island countries and territories face unique challenges in managing water, constrained by human and

financial capacities, an almost total dependence on rain-fed agriculture, intense rainfall and flooding, especially on larger volcanic islands, and a lack of any significant natural water resources on small, remote, low-lying islands. The report applied a vulnerability assessment methodology and index to analyse water resource stresses, development pressures, ecological insecurities and management challenges on specific islands. Options to reduce freshwater vulnerabilities differ by island, but could include rainwater harvesting and storage (both traditional and innovative options), assessing the role of desalination for everyday supply and in emergency situations, and applying management frameworks and technologies to increase water use efficiency throughout the water cycle (including use of brackish water and wastewater).

18.   The report *Assessment of Freshwater Resources: Vulnerability to Environmental and Climate Change: Implications for Shared Water Resources in the West Asia Region* was published in 2011.[6] Among its other findings, the assessment stresses that increasing water demand is a key concern for the region; it is therefore important to improve "demand side" as well as "supply side" management of water resources and strengthen legal frameworks and institutions towards a holistic approach. The conclusion of water-sharing agreements is important if tension is to be avoided between riparian countries. Municipal wastewater has considerable potential as a water resource for the region, and increasing reliance on desalinated water is inevitable in the future.

19.   UNEP has finalized the English translation of the first Environment Outlook for the Arab Region report.[7] The report highlights water scarcity as perhaps the greatest challenge for the region at a time of rapid population growth and increasing risks associated with disasters and climate change impacts, such as drought, desertification and water salinity. On the positive side, it describes tangible progress in the creation of legal environmental frameworks and growing environmental awareness in the region. The report calls for policies that include integrating the environment into development plans, considering the full value of resources in policymaking, more sustainable patterns of consumption and production and a gradual shift to a green economy approach.

20.   The synthesis report *Arab Millennium Ecosystem Assessment* presents the findings of the sub-global assessment for the Arab region, and highlights the commonalities (including water scarcity and desertification) and differences between three focal sites. The recommended response options contained in the report focus on institutional changes and good governance, including the empowerment of communities to manage plans, which would allow for the equitable distribution of the costs and benefits of development and ecosystem services.

21.   The publication *GEO Cities: 10 years of Urban Integrated Environmental Assessment in Latin America and the Caribbean* presents the main findings of work conducted in 46 cities over the past decade[8]. The report illustrates the importance of the Global Environment Outlook process in building national and local capacities for conducting participatory environmental assessments to assist in decision-making at different levels by following the Global Environment Outlook approach.

22.   UNEP, with the technical support of the Mercosur Economic Research Network, prepared a report *Resource Efficiency in Latin America: Economics and Outlook*,[9] focusing on three themes that are important to the region: land use changes; energy and climate change; and water use. From the trends observed, four regional scenarios were developed for the period 2010–2030 to identify viable alternatives with a view to eventually making the best use of the region's potential.

23.   A report on resource efficiency and the economic outlook for the countries of Eastern Europe, the Caucasus and Central Asia was published in 2012. The objective was to examine material flows in the major economic sectors, analyse recent trends and identify where improvements could be made within the region.

24.   UNEP, in partnership with the European Environment Agency, is implementing a project funded by the Government of the United States of America to strengthen information in support of environmental protection and sustainable management of natural resources in Morocco. UNEP is also supporting Morocco in the development of forest accounts, in collaboration with partners such as the European Environment Agency and the United Nations Statistics Division.

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[6] Available at www.unep.org/dewa/westasia/documents/Vulnerability%20Report.pdf.

[7] Available at www.unep.org/dewa/westasia/eoar.

[8] The report is available in Spanish at www.pnuma.org/deat1/pdf/Geo_Ciudades%281-147%29WEB11mayo.pdf.

[9] Available at www.pnuma.org/reeo.

IV. Early warning of environmental threats and emerging issues

25.   Early warning and new emerging issues continue to be identified across thematic areas and geographic levels. The main products used to highlight those issues are the UNEP Year Book 2013, publications from the UNEP Foresight Process and atlases and early warning bulletins issued through the Global Environmental Alert Service (GEAS).

26.   GEAS is an information service that identifies emerging environmental issues and threats, and provides timely information to Governments, humanitarian groups and civil society to influence decision-making, catalyse remedial actions and raise awareness. Scientific findings are also communicated to policymakers, enabling them to make informed policy choices and achieve sustainable solutions to emerging environmental issues.

27.   UNEP has noted extensive global readership of GEAS, as demonstrated by increasing web visits and download statistics. GEAS is highly regarded and used, as evidenced by the fact that it has been referenced in scientific journal articles and newspapers and is regularly cited in the journal *Environmental Development*. Several Governments and international organizations have also expressed satisfaction with the utility of GEAS.

28.   Monthly bulletins on key emerging environmental and related issues are prepared and circulated to a list of recipients, which has now reached approximately 500,000 users globally. The bulletins include new visual evidence of global environmental change resulting from natural processes and human activities and the interaction between them. These "change studies" are described and analysed through photographs, satellite images, maps and narratives, which provide insight into the many ways in which and places where the environment has changed and continues to be modified. Some of the titles of recent bulletins include:

(a)   "Gas fracking: can we safely squeeze the rocks?";

(b)   "Measuring glacier change in the Himalayas";

(c)   "Africa without ice and snow";

(d)   "The end to cheap oil: a threat to food security and an incentive to reduce fossil fuels in agriculture";

(e)   "The drying of Iran's Lake Urmia and its environmental consequences";

(f)   "A glass half empty: regions at risk due to groundwater depletion".

29.   To cite one example, "Africa without ice and snow" highlighted that between 1906 and 2006 African glaciers (on Mount Kenya, Mount Kilimanjaro and the Ruwenzori mountains) lost about 82 per cent of their area, and even the largest have become fragmented. The shrinking of those glaciers is likely to reduce river flows, affect the livelihoods of communities that depend on the aquatic ecosystems that the glaciers support and reduce tourism revenues.

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

31.   The report *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 on the exposure component of vulnerability and examples of good practices implemented in the region for climate change adaptation.

32.   In addition, a detailed report entitled *Policy Implications of Warming Permafrost* was launched at the eighteenth Conference of the Parties to the United Nations Framework Convention on Climate Change.

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

33.   Assessment processes constitute a fundamental component of the UNEP core mandate to keep the world environmental situation under review. They must, however, be underpinned by institutional networks, partnerships and multi-stakeholder collaborative mechanisms, which also

provide a number of support functions, such as facilitating access to and sharing of environmental data and information supporting various levels of decision-making, from global to local.

A.   Multi-stakeholder processes

34.   The development of the fifth Global Environment Outlook report (GEO-5) involved extensive collaboration between UNEP and a network of multidisciplinary experts, research institutions and Global Environment Outlook collaborating centres, all of which offered their valuable time and knowledge to the process.

35.   GEO-5 authors and experts were nominated by Governments and other stakeholders, including GEO collaborating centres, using a transparent process similar to that used to nominate members of the Intergovernmental Panel on Climate Change. The secretariat then selected the experts on the basis of their expertise and of gender and regional balance.

36.   The following three external specialized advisory bodies were established to support the assessment process:

         (a)   The High-level Intergovernmental Advisory Panel, comprising 20 government representatives from all six UNEP regions, identified the internationally agreed goals to be assessed and provided strategic advice to GEO-5 authors and experts in assessing the goals;

         (b)   The Science and Policy Advisory Board, consisting of 18 scientists and representatives from the policy community, 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.

37.   The GEO-5 assessment underwent three rounds of review involving over 300 experts drawn from Governments, the scientific community and the United Nations 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. Regional consultations held in each of the UNEP regions engaged many different stakeholders, identified five to six priority environmental challenges in each region, selected internationally agreed goals of relevant concern, and identified potential policy options in each region. The final open-ended intergovernmental meeting, convened in Gwangju, Republic of Korea, in January 2012, negotiated and endorsed the GEO-5 summary for policymakers.

38.   The outcome of the UNEP Foresight Process on Emerging Environmental Issues, a collaborative process that brought together over 400 scientists from across the world and identified 21 emerging environmental issues, was published in the report *21 Issues for the 21st Century*. UNEP is now planning a similar foresight process for indigenous communities, aimed at identifying the priority emerging environmental issues for those communities, and therefore informing policies related to them.

39.   By its resolution 65/37, the General Assembly endorsed the recommendations adopted by the Ad Hoc Working Group of the Whole that proposed modalities for the implementation of the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects. The General Assembly decided that the Regular Process, as established under the United Nations, was accountable to the 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 should take into account relevant Assembly resolutions. UNEP, the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization, the International Maritime Organization, the Food and Agriculture Organization of the United Nations and other 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, assessment and resource mobilization.

40.   UNEP has also provided support to the Regular Process trust fund to assist experts from developing countries in participating in the World Ocean Assessment. A communication portal, a dedicated website and a document management system have been developed, in cooperation with UNEP/GRID-Arendal, to assist in delivering the first integrated Regular Process report, which is scheduled for completion by 2014.

41.   The Transboundary Waters Assessment Programme (TWAP) is a project coordinated by UNEP and funded by the Global Environment Facility (GEF), under the GEF Transboundary International Waters Assessment Programme. The TWAP process identifies the most serious water

problems or emerging water issues worldwide and TWAP indicators provide 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.

42.   The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) was established in Panama on 21 April 2012 as an independent intergovernmental body by a resolution to which 94 Governments consented (93 States Members of the United Nations and the Cook Islands). Further details are available at www.ipbes.net and in document UNEP/GC.27/INF/16.

B.   Platforms, partnerships and networks

43.   In response to Governing Council decision 26/2, UNEP is developing, in collaboration with a wide array of partners, a web-based platform called UNEP-Live to promote access to and the use of environmental information, with a view to keeping the world environmental situation under review. A proof-of-concept prototype (see www.uneplive.org) has been developed with key support from Esri, the European Environment Agency, and the Eye on Earth partnership, and currently presents environmental data, indicators and information on environmental assessments. Further information on the implementation of UNEP Live, including elements of a business plan and a cost estimate, is contained in document UNEP/GC.27/INF/10 for the consideration of the Council/Forum.

44.   UNEP-Live is being designed to significantly enhance the efficiency and cost-effectiveness of the future approach to keeping the world environmental situation under review by:

(a)   Facilitating a continuous worldwide assessment process and developing the current GEO process from a four- or five-year endeavour to a more regularly updated approach;

(b)   Utilizing, sharing and providing access to the best available data and information;

(c)   Improving the quality and timeliness of data through exposure and transparency, thereby increasing its policy relevance;

(d)   Contributing, as appropriate, to the reporting obligations of multilateral environmental agreements and the Millennium Development Goals;

(e)   Providing a collaborative platform to facilitate the social process that brings together experts during assessment activities at the national, regional and global levels;

(f)   Providing technology support to enable and facilitate national level state of the environment reporting;

(g)   Making assessment outcomes more accessible, more current and more dynamic, and improving communication of assessment findings;

(h)   Providing opportunities to compare and learn, helping countries build capacities to develop their own assessments.

45.   Governments and the public will have open access to environmental data, indicators and assessment findings, including emerging issues and policy reviews, consolidated from within UNEP, other relevant United Nations agencies and partners. Access to data and information will be organized according to certain themes and geographical dimensions to enhance their value and utility to user communities. As part of the broad capacity-building activities of UNEP, UNEP-Live will assist countries in delivering up-to-date state of the environment reporting, using common approaches, based on priority data and indicators harvested through national monitoring processes.

46.   A phased and iterative approach is being taken towards the implementation of UNEP-Live. The initial focus is on organizing the UNEP assessment products and supporting UNEP-led assessment processes. The next phase will address capacity-building at the national and regional levels for environmental assessment and reporting, under a revitalized capacity-building programme based on stated country needs and in accordance with the Bali Strategic Plan for Technology Support and Capacity-building. A partnership between UNEP and the Environment Agency of Abu Dhabi, with an initial focus on the region of Western Asia, will provide lessons and best practices for up-scaling in other regions and with relevant regional partners and networks.

47.   The "my country" component of UNEP-Live will, in partnership with Governments, provide access to national-level data and information, including that from national platforms, and provide Governments and stakeholders with the opportunity to use a collaborative platform called "SOE Live" to facilitate dynamic reporting on the state of the environment. The fourteenth session of the African Ministerial Conference on the Environment, held in September 2012, endorsed the development of a platform for sharing environmental information in Africa.

48.   GEAS (see paras. 25–27 above) is also part of UNEP-Live. In the next phase of its development, GEAS will aim to increase its capacity to disseminate timely information through a dedicated website interface equipped with a feedback mechanism, automate real-time alerts to e-mail GEAS users with links to real-time web-mapping visualization and add a capacity-building component to help develop national research, monitoring and assessment capacity.

49.   In follow-up to the Eye on Earth Summit Declaration (Abu Dhabi, December 2011), UNEP, in collaboration with the Environment Agency of Abu Dhabi, established a 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 (see UNEP/GC.27/INF/11).

50.   Especially pertinent to UNEP-Live is the Eye on Global Network of Networks special initiative, a partnership with over 30 governmental, non-governmental, intergovernmental, commercial, non-profit and academic partner agencies. It provides guidance on the technical protocols, standards and practices that ensure that UNEP-Live will efficiently and effectively interlink with national platforms. It also provides access to information technologies that will enable UNEP-Live to complement other global and regional environmental information-sharing activities, such as the European Environment Information and Observation Network (EIONET) of the European Environment Agency and the Africa Environment Information Network, which is a framework aimed at increasing access to environmental information and supporting policy and development planning at the national and regional levels. It is being strengthened and the process is taking on board lessons from similar 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, providing support for the development of products that increase the integration of the environmental dimension in national development planning, and facilitating increased access to information.

51.   The Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA) addresses the lack of international coordination with regard to research on climate change vulnerability, impacts and adaptation. It identifies research gaps and initiates processes to close them, and is responding to the scientific community's call for a more cohesive and coordinated approach to vulnerability, impacts and adaptation research, and the critical need to harmonize, mobilize, and communicate the growing knowledge-base related to this issue. 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.

52.   The PROVIA work programme for the biennium 2010–2011 (initial phase) consisted of four priority activities, agreed by the Interim Scientific Steering Committee. Two important publications have been issued. The first is entitled *Responding to the Adaptation Challenge: A Global Agenda of Research on Vulnerability, Impacts and Adaptation.* The gap analysis of this work is based on a broad range of sources, including the Working Group reports of the Intergovernmental Panel on Climate Change (IPCC); peer-reviewed articles; books; white papers; and conference, workshop, and meeting proceedings, presentations and notes. The second publication, *PROVIA Guidance on Assessing Vulnerability, Impacts and Adaptation to Climate Change*, contains the revised guidelines and assessment tools that need to be delivered to Governments, international agencies and individual experts. PROVIA is committed to 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 set out in document UNEP/GC.27/INF/12.

VI.   Technology support and capacity-building

53.   The Bali Strategic Plan for Technology Support and Capacity-building provides the overarching framework for UNEP support to countries. The development of tools and methodologies to keep the world environmental situation under review and their application remains a primary focus at the global, regional and national levels. Increasingly, UNEP is called upon to support countries to implement best practices for the regular monitoring and use of data and indicators for environmental reporting. The findings of GEO-5 and many UNEP-led assessments repeatedly highlight the lack of necessary data and indicators to assess the status of the world environmental situation and enable Governments to report on the achievement of agreed goals and environmental agreements. UNEP is taking the approach of "collect once, use often" in respect of identifying and promoting the use of appropriate data and indicators useful for multiple reporting purposes, in an effort to streamline and reduce the reporting burdens that countries experience.

A. Tools and methodologies

54. 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.

55. The Integrated Environmental Assessment Community Platform includes an eight-volume online training manual on integrated environmental assessment, including aspects such as data and indicators, scenarios and the use of integrated environmental assessment to implement national and sectoral development policies. The training manual is available in the six official languages of the United Nations and includes thematic modules by region on climate change, freshwater resources, and the ecosystem approach, among others. Governments, development partners and civil society organizations can use these tools to guide assessment processes, with or without technical assistance from UNEP. The tools can be accessed at www.unep.org/ieacp.

56. The publication *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 integrated environmental assessment process, to build capacity in the Arab region for integrated environmental assessment and reporting at the city and local levels. In addition, a course on strategic environmental assessment has been developed for the Latin America and Caribbean region.

B. Capacity-building interventions

57. In Africa, the Marketplace for Environmental Training and Online Resources provides support for the development of the Pan-Africa e-Learning for the Environment Network (see www.unep.org/mentor/africa) in response to decision 12/6 on environmental education and technology-supported learning, adopted by the African Ministerial Conference on the Environment at its twelfth session. Training was conducted in 18 African countries and the Network is now operational through a set of subregional hubs and national centres. Additional outcomes from this process include the development of an electronic 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 electronic waste management.

58. In Morocco, UNEP, in partnership with the State Department of the United States and the European Environment Agency, is providing support in the form of tools, best practices, networks and approaches in the area of environmental information, which contribute to the protection of the environment and the sustainable management of natural resources in Morocco. An important component of this work is the development of a forestry resource account for Morocco.

59. UNEP is providing technical support and capacity-building initiatives for the development of the South Asia Environment Outlook 2013/14 under the auspices of the South Asian Association for Regional Cooperation. The process will identify emerging issues and provide recommendations for timely action to address the priority issues identified. The South Asia Environment Outlook 2013/14 would benefit from another capacity-building project under discussion between UNEP and the South Asia Cooperative Environment Programme to establish an environmental data and information management system for South Asia, for which funding is currently being sought.

60. Technical assistance and capacity-building support is being provided to Bangladesh, Bhutan, Myanmar, Pakistan and Papua New Guinea using the integrated environmental assessment approach to review environmental states and trends and their impacts on human well-being and economic development with a view to supporting informed decision-making processes at the national level. UNEP is providing support to countries in Western Asia for the development of national environment outlooks. It is also providing integrated environmental assessment training and facilitating the state of the environment reports of Iraq and Saudi Arabia. Training on integrated environmental assessment includes introducing the concept, methodology and practical application of developing a framework for the process.

61. In the region of Latin America and the Caribbean, UNEP is providing capacity-building support to countries with regard to integrated environmental assessment and reporting at the city and local levels. The year 2012 marked the tenth anniversary of the UNEP GEO for Cities programme, which has applied the integrated environmental assessment approach in 40 cities since its inception in Latin America and the Caribbean.

VII. Strengthening the science-policy interface in response to the outcome document of the United Nations Conference on Sustainable Development

62.   UNEP establishes connections between the scientific and policymaking communities through its numerous thematic and global assessments, panels and information networks with a view to making environmental research and scientific information more policy relevant, and policy development and implementation more science based. The Rio+20 outcome document, entitled "The future we want", called for strengthening the role of UNEP, including its role in promoting a strong science-policy interface.

63.   In response to the Rio+20 call and in line with the UNEP Science Strategy, UNEP will continue to strengthen the science-policy interface through the following activities:

        (a)   Carrying out an assessment of scientific knowledge about key policy issues and communicating it to policymakers through the UNEP environmental assessment process and the preparation of the Global Environment Outlook reports;

        (b)   Convening scientists to evaluate options for acting on the sustainability challenge and to provide scientific input on key policy issues, through reports such as *The Emissions Gap Report*, *Near Term Climate Protection and Clean Air Benefits: Actions for Controlling Short-Lived Climate Forcers* and *The Environmental Food Crisis*;

        (c)   Undertaking processes for identifying new scientific issues of importance to the policy community, through the UNEP Foresight Process on Emerging Environmental Issues and the Global Environmental Alert Service, among others;

        (d)   Providing opportunities for policymakers to influence the scientific agenda so that more research time is spent on issues critical to the sustainability challenge, through UNEP involvement in the Future Earth initiative, through its organization of the climate science-policy dialogue and through its support of PROVIA.

64.   Ongoing and future developments will serve to enhance the assessment capacities of UNEP, provide mechanisms to improve efficiency and cost-effectiveness, and improve the effectiveness of UNEP assessment products. UNEP will use its experience in integrated assessment, data and indicators to spearhead the global effort requested by the Rio+20 outcome document in terms of bringing together dispersed information and assessments, including global sustainable development reports, and building on existing assessments. Proven and tested methodological approaches will be offered as a means of strengthening ongoing capacity-building efforts for data collection and analysis in developing countries.

65.   A proposed outcome of Rio+20 is for policymakers to elaborate a series of universal sustainable development goals with a view to complementing and addressing the shortcomings of the Millennium Development Goals. 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 sustainable development goals, to analyse current commitments and goals, identify priority areas and track and monitor the implementation of goals.

66.   A core set of sustainable development indicators for the Arab region has been translated into Arabic, providing guidelines for the development and use of environmental and sustainable development indicators. The guidelines provide a basis for the countries of the region to develop their national core set of sustainable development indicators. Several countries in the region have now embarked on developing those indicators.

67.   The publication *ILAC: Regional Indicators Revision 2011* presents regional data drawn from the indicators used in the Latin American and Caribbean Initiative for Sustainable Development. 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 region 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 at www.geodatos.org.

VIII.   Conclusion

68.   Over the biennium 2014–2015, a new subprogramme, entitled "Environment under Review", will take a holistic approach towards addressing the UNEP core mandate of keeping the world environmental situation under review. The aim of the new subprogramme, which brings together critical work that was previously embedded in other subprogrammes, is to enhance integrated assessment, interpretation and coherence of environmental, economic and social information to assess the state of the environment, identify emerging issues, track progress towards environmental sustainability, including existing internationally agreed goals and targets, such as the Aichi Biodiversity Targets, and facilitate global policymaking. UNEP will work with national, regional and global partners to support capacity-building efforts for environmental monitoring and sharing technology best practices to make environmental data and information on public platforms accessible in line with Principle 10 of the Rio Declaration on Environment and Development and the information pillar of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. Furthermore, UNEP will work towards increasing stakeholder participation in the environmental decision-making processes, including the generation, analysis, packaging and dissemination of integrative environmental information, in accordance with the outcome document of the United Nations Conference on Sustainable Development.