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**Inventory of UNEP capacity-building and technology
support activities**

Note by the secretariat

**I. Definition of and legislative mandate for the United Nations
Environment Programme's capacity-building and
technology support activities**

A. Definition of capacity-building and technology support

1. Capacity-building

1. For the purpose of presenting the inventory of UNEP activities the term capacity-building¹ refers to strengthening abilities, relationships and values that enable organizations, groups and individuals to improve their performance and achieve their sustainable development objectives. It includes strengthening the institutions, processes, systems and rules that influence collective and individual behaviour and performance in all development endeavours. It also means enhancing people's ability to make informed choices and their willingness to play new developmental roles and adapt to new challenges.

¹ As agreed at the Inter-Agency Consultative Meeting on Capacity Building in Geneva, 20–22 November 2002, the terms capacity-building and capacity development can be used interchangeably to mean the same thing.

2. Technology support

2. Technology support² encompasses the diffusion of technologies and technology cooperation across and within countries. Specifically, it comprises the process of learning to understand, utilise and replicate a given technology, including the capacity to choose it, adapt it to local conditions and integrate it with indigenous technologies. Technology-support activities involve various stakeholders: Governments, private sector entities, financial institutions, non-governmental organizations and research and education institutions.

3. The distinction between capacity-building and pure technology support activities is very thin, as the later invariably comprises a large part of capacity-building. In presenting the inventory of activities this paper addresses – jointly or separately, as appropriate – aspects that are central to both areas. The inventory is not static; it is constantly being updated to add new projects and activities, and refined to improve the quality and relevance of information. Detailed information on each of the projects is available in an electronic database of the inventory.

4. The inventory is prepared pursuant to decision SS VIII/1, taken by the UNEP Governing Council/Global Ministerial Environment Forum at its eighth special session, in Jeju, Republic of Korea, in March 2004, requesting the Executive Director of UNEP “to make available relevant reports, including an inventory of existing capacity-building and technology support activities of the United Nations Environment Programme and of other relevant international organizations, to assist the high-level working group, as necessary ...”. The inventory reflects capacity-building and technology support activities in all UNEP divisions, as well as those undertaken directly by UNEP regional offices. The inventory builds upon previous biennial publications in which UNEP highlighted its capacity-building profile.

B. UNEP legislative mandate

5. The UNEP legislative mandate on capacity-building, and indeed UNEP’s leadership role as the environmental conscience of the United Nations, flows from United Nations General Assembly resolution 2997 (XXVII) of 15 December 1972, which, among other things, established the UNEP Governing Council. The resolution mandates UNEP to promote international cooperation in the field of environment, to recommend policies to this end and to provide policy guidance for the coordination of environmental programmes in the United Nations system. In addition, UNEP is tasked with keeping under review the world environmental situation, and promoting the acquisition, assessment and exchange of environmental information.

6. A key aspect of the mandate was underscored by General Assembly resolution 3436 (XXX) of 9 Dec 1975, which calls on UNEP, on request, to assist developing countries with respect to national and international environmental law and implementation of multilateral environmental agreements.

7. Agenda 21 (chapter 37), adopted at Rio de Janeiro in 1992, makes clear the nature and importance of capacity-building. It is the key to the successful implementation of Agenda 21. Without the necessary capacity, developing countries and countries with economies in transition will be unable to identify and solve their development problems.

8. Chapter 38 (International Institutional Arrangements) of Agenda 21 clearly identifies 13 key priority areas for UNEP, including environmental assessment and reporting; information dissemination and exchange; development and implementation of environmental law; impact assessment and use of economic instruments in environmental management; and environmental emergencies. UNEP is also required to facilitate information exchange on environmentally sound technologies, to promote subregional and regional cooperation, including supporting relevant initiatives and programmes, and to play a leading role in regional environmental mechanisms.

² This document adopts the definition of “technology transfer” used by the Intergovernmental Panel on Climate Change: “a broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change amongst different stakeholder”. This definition need not be limited to climate change, and indeed is appropriate to a much wider range of issues.

9. In its five-year review of Agenda 21 in 1997, the UNEP Governing Council/Global Ministerial Forum adopted the Nairobi Declaration on the Role and Mandate of the United Nations Environment Programme, reaffirming UNEP's leadership role and the core elements of its focused mandate. Subsequently, the General Assembly, in resolution 53/187 of 15 Dec 1998, reaffirmed this role.

10. The Malmö Ministerial Declaration of the UNEP Governing Council/Global Ministerial Forum of 2000 and the United Nations Millennium Development Goals further put in place concrete environment-related challenges that need to be addressed and goals to be met. Further specific roles and responsibilities have been entrusted to UNEP through multilateral environmental agreements and decisions of their conferences of parties.

11. In February 2002, the UNEP Governing Council at its seventh special session, at Cartagena, pursuant to the international environmental governance process, further reinforced UNEP's capacity-building and technology support mandate with a focus on increasing country-level delivery. Decision SS VII/1 laid emphasis on inter-agency collaboration, especially with the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF), among others, in increasing country-level coordination and delivery of capacity-building and technology support activities. Recognizing the need for an integrated approach, the Governing Council/Global Ministerial Environment Forum at its seventh special session also laid the foundations for the development of an intergovernmental strategic plan on capacity-building and technology support.

12. The Plan of Implementation of the World Summit on Sustainable Development, adopted in the same year, highlights key issues underlying environmental degradation, as well as the required capacity-building measures and the need for partnerships with Governments, the United Nations system, the private sector, financial institutions and civil society.

II. UNEP strategic approach to capacity-building and technology support

A. Overall strategic approach and areas of focus

13. Over the past three decades, the international community has endeavoured to identify and prioritize the capacity-building and technology-support needs of, in particular, developing countries and countries with economies in transition. The key needs include:

(a) To ensure widespread access to scientific and technological information. Key challenges in this context include the need to protect intellectual property rights and to avoid neglecting environmentally sound indigenous technologies, as well as the collection, analysis and dissemination of data and information;

(b) To enhance access to environmentally sound technologies. This includes, but is not limited to, supporting the commercial viability of new technologies by facilitating their financing;

(c) To support capacity-building activities. This includes a wide range of efforts, from human resources development to institutional and information capacity development. It further entails the longer-term integration of these efforts into national policies and plans;

(d) To ensure effective linkages between technology support and capacity-building in maximizing the synergies between both interventions.

14. UNEP, as the voice for the environment within the United Nations system, is tasked with promoting the incorporation of environmental protection into development planning at all levels. UNEP enhances environmental capacity in developing countries and countries with economies in transition in four principal ways:

(a) By facilitating and supporting institution building at the regional, subregional and national levels through regional advisory services, technical and legal assistance, mentoring and training of local experts and support to regional and subregional environmental initiatives such as the New Partnership for Africa's Development (NEPAD);

(a) By developing and testing environmental management tools and instruments in collaboration with national Governments, regional and sub regional institutions and various agencies;

- (a) By promoting public participation in environmental management and enhancing access to environmental information;
 - (a) By supporting multilateral environmental agreements.
15. UNEP responsibilities in capacity-building and technology support include:
- (a) Environmental assessment and monitoring of the state of the global environment, including identification of emerging issues, as well as the collection, analysis and dissemination of environmental data and information;
 - (b) Atmosphere and climate change encompassing ozone, air pollution, and climate change adaptation, etc;
 - (c) Biodiversity conservation and resource management;
 - (d) Chemicals and waste management;
 - (e) Economics, trade and environment issues;
 - (f) Energy issues related to policy, efficiency, alternatives, financing, etc.;
 - (g) Environmental law: development and implementation of international and national laws, compliance with and enforcement of multilateral environmental agreements, etc.;
 - (h) Production and consumption;
 - (i) Water;
 - (j) Technology support;
 - (k) Cross-cutting issues including environmental awareness, education and outreach.

B. Collaboration with United Nations agencies

16. In line with its mandate to provide leadership on environment and in order to attain maximum impact in the environmental field, UNEP works in close collaboration and partnership with other United Nations agencies, the private sector, civil society and major groups, regional and national institutions and other organizations in implementing its work, including its work on capacity-building.

17. Environmental coordination in the United Nations system was initially carried out through the Environment Coordination Board (ECB) set up under the auspices of the Administrative Committee on Coordination pursuant to General Assembly resolution 2997, “in order to provide for the most efficient coordination of United Nations environmental programmes”. This function later devolved to the Inter-Agency Environment Coordination Group, and then the Environmental Management Group.

18. Examples of interagency cooperation include the project on Partnership for the Development of Environmental Law and Institutions in Africa (PADELIA) which, since 1994, has been jointly implemented with UNDP, the Food and Agriculture Organization of the United Nations (FAO), the World Bank, the World Conservation Union (IUCN) and several donor and beneficiary Governments; UNEP capacity-building in post-conflict countries and disaster management, undertaken in close collaboration with the United Nations Office for the Coordination of Humanitarian Affairs, the United Nations International Strategy for Disaster Reduction, the United Nations High Commissioner for Refugees and UNDP. Others include UNEP and UNDP with a range of other agencies in the implementation of GEF-funded activities in the different GEF focal areas.

19. UNEP capacity-building and technology support for chemicals-related multilateral environmental agreements is provided in partnership with other agencies such as the Inter-Organisation Programme for the Sound Management of Chemicals (IOMC), the member organizations of which include UNEP, the World Health Organization, the International Labour Organization, FAO, the United Nations Industrial Development Organization, the United Nations Institute for Training and Research and the member countries of the Organisation for Economic Cooperation and Development (OECD). The Intergovernmental Forum on Chemical Safety provides a forum where government and non-government stakeholders can address such issues.

C. UNEP collaborating centres and partners

20. UNEP centres and partner institutions provide key building blocks in capacity-building and technology support at the regional and national levels. The centres include the International Environmental Technology Centre, the Collaborating Centre on Water and Environment, the Collaborating Centre on Energy and Environment; centres collaborating with UNEP on the Global Environment Outlook (GEO) and partnering with UNEP on the Global International Waters Assessment (GIWA), and GRID-Arendal centres partnering with UNEP and Kalmar on GIWA, etc. At the regional, subregional and national levels, UNEP works with various partners, Government institutions, research institutions and civil society organizations in furthering its capacity-building and technology support activities to respond better to specific country needs and priorities.

21. Examples of such collaboration include UNEP sustainable energy activities, which are implemented through the UNEP Collaborating Centre on Energy and Environment by a group of international scientists, engineers and economists who provide technical and analytical support. UNEP also works with a network of cleaner production centres. Another example is capacity-building for integrated environmental assessment, which involves GEO collaborating centres and partners around the world such as the International Institute for Sustainable Development, as well as global, regional and subregional institutions.

22. Pursuant to Governing Council decision 22/1 III on the UNEP World Conservation Monitoring Centre, a network of collaborating centres in developing countries will be established to cooperate with the centre and to assist it in undertaking relevant parts of its work programme. UNEP, in collaboration with IUCN, is also strengthening the World Database on Protected Areas.

D. Engaging the private sector

23. The private sector plays a key role in capacity-building, technology transfer and promoting the uptake of environmentally sound technologies, which are crucial in the quest for sustainable development. Technology support and transfer and related capacity-building activities thus necessitate UNEP to engage proactively and involve the private sector through innovative initiatives such as the financing initiatives for market driven uptake of environmentally sound technologies. Realizing the critical role of industry, UNEP at its inception set up an industry office and division to spearhead focused interaction. Another example is UNEP collaboration with BP Shell on developing future scenarios as part of the GEO process.

E. UNEP and the Multilateral Fund for the Implementation of the Montreal Protocol

24. Since 1991, UNEP has been one of the four implementing agencies of the Multilateral Fund for the Implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer. Under the Multilateral Fund, the UNEP OzonAction Programme provides capacity-building and technology support activities to assist developing countries and countries with economies in transition to achieve compliance with the Montreal Protocol. The programme receives additional funding from GEF and bilateral contributions. All projects funded by the Multilateral Fund are tracked via the Multilateral Fund Secretariat's Inventory of Approved Projects database, including projects approved for UNEP.

25. The OzonAction Programme is implementing a work programme with a budget of \$83.44 million, comprising 768 project activities implemented in 143 countries (cumulative figures, as of December 2003). UNEP is the only implementing agency focused solely on "non-investment" activities under the Fund, and deals with all of OzonAction's activities focused on capacity-building and technology support. To date, OzonAction has implemented 96 institutional strengthening projects specifically designed to enhance the human and institutional capacities of national ozone units (NOU's) in participating countries. OzonAction has also assisted 100 countries to date with the development of national strategies to comply with the Protocol, and has prepared numerous publications of a technical and policy nature for assisting all involved in this matter.

26. In addition to its Multilateral Fund role, UNEP is also a GEF implementing agency for ozone layer protection for countries that have GNP per capita below \$4,000 and are not eligible for funding under the Multilateral Fund. In this role, OzonAction capacity-building assistance valued at \$ 5.2 million (cumulative) is provided to 18 countries with economies in transition.

F. UNEP and GEF

27. Consistent with GEF practices for the past ten years, it is recognized that embedding capacity-building components within projects is the most effective means for sustainable capacity development, and it is recommended that this approach continue to be the preferred pathway for capacity-building. UNEP projects within the framework of its GEF activities, in general, focus on:

- (a) Development, testing and demonstration of tools and methods for improved environmental management at the national and regional levels;
- (b) Carrying out environmental analyses and assessments on specific thematic issues;
- (c) Management of transboundary ecosystems;
- (d) Transfer of technology and know-how.

28. As one of the GEF implementing agencies, UNEP is implementing an \$806 million work programme, including \$415 million in GEF resources, comprising 475 project activities implemented in 152 countries. Most UNEP/GEF projects contain a significant capacity-building component. Many UNEP-implemented GEF funded projects are designed to address subregional and transboundary issues, and thus enhance international cooperation in protecting the global environment. A significant share of the UNEP/GEF capacity-building programme comprises enabling activities that aim to assist countries to implement their commitments under environmental conventions for which GEF is the financial mechanism. UNEP is currently assisting 149 countries to implement GEF enabling activities.

G. Support to multilateral environmental agreements

29. Central to UNEP work in the field of environmental law is the development and implementation of multilateral environmental agreements. Internationally, the network of UNEP-sponsored environmental conventions is having an ever increasing effect, largely because UNEP capacity-building and institutional strengthening activities have been building national-level expertise for effective enforcement of and compliance with multilateral environmental agreements. UNEP also provides support to multilateral environmental agreements through its work on inter-linkages and synergies and the development and implementation of subregional environmental agreements, particularly on shared natural resources such as the Carpathian Mountains, the Caspian Sea and the Black Sea

1. Ozone

30. The historic Montreal Protocol on Substances that Deplete the Ozone Layer to the Vienna Convention for the Protection of the Ozone Layer, negotiated under UNEP auspices in 1987, is one of the key areas in which UNEP assists developing countries. The programme has assisted 100 developing countries and countries with economies in transition in preparing their national strategies for complying with the Protocol and establishing their national ozone units through institutional strengthening projects. Through its regionalized component called the Compliance Assistance Programme, based largely in the UNEP regional offices, and using innovative mechanisms such as regional networks of national ozone units and an international information clearinghouse, UNEP has strengthened the capacity of those countries so that most achieve or exceed their compliance commitments under the protocol (more information on the Multilateral Fund is covered above).

2. United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa

31. UNEP, as the task manager for Chapter 12 of Agenda 21, supports countries and their regional and subregional organizations in the implementation of the United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa. UNEP supports African countries with their

convention-related reporting through the framework of the African Ministerial Conference on Environment (AMCEN) and in collaboration with the convention secretariat, the UNDP Office for Combating Desertification and Drought and sub-regional organizations. Furthermore, UNEP assists in promoting awareness on the mobilization of financial resources for the implementation of the convention in those areas of concern to the Intergovernmental Authority on Development and the Southern African Development Community.

3. Basel, Rotterdam and Stockholm conventions

32. UNEP has successfully assisted developing countries and countries with economies in transition to participate in the negotiation and implementation at the national level of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, and the Stockholm Convention on Persistent Organic Pollutants.

4. Biodiversity conventions

33. UNEP is actively involved in capacity-building efforts in support of the implementation of the biodiversity related conventions and protocols, namely the Convention on Biological Diversity (CBD), the Convention on the Conservation of Migratory Species of Wild Animals, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

5. Climate change

34. UNEP paved the way for the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol. UNEP has successfully assisted countries to prepare national communications to the convention. In addition UNEP is assisting least developed countries to developed climate change national adaptation programmes of action. The convention relies on scientific assessments from the International Panel on Climate Change, a mechanism established and supported by UNEP and the World Meteorological Organization.

6. Regional seas conventions

35. The UNEP regional seas programmes involve more than 140 countries taking part in 13 programmes, each tailored to the specific needs of its country and region participants. UNEP has been responsible for forging agreements with eight international conventions and fifteen protocols and agreements in addition to action plans on the protection of regional seas.

7. GPA as an example of UNEP capacity-building and technology support under “soft” multilateral environmental agreements

36. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) -- an important soft law instrument for which UNEP acts as secretariat -- has gained significant momentum since its inception in 1995. It received unanimous support at its first intergovernmental review meeting, in October 2001. A core element of GPA is an information and data clearing house to mobilize experience and expertise for effective scientific, technical and financial cooperation and capacity-building. The clearing house provides a rapid and direct referral system to relevant information and data so Governments can receive appropriate and timely advice and assistance. Both the regional seas programme and GPA are key UNEP mechanisms in implementing the United Nations Law of the Sea Convention, Part XII.

8. Linking multilateral environmental agreements and trade conventions

37. The continuing expansion of international environmental and trade laws is increasing the need for policy coherence and coordination at all levels, and in particular between multilateral environmental agreements and the World Trade Organization (WTO). UNEP facilitates information exchange and coordination and collaboration between WTO and multilateral environmental agreement secretariats in order to enhance synergies between these institutions. Activities include the development of policy response packages to realize the objectives of multilateral environmental agreements. Currently, UNEP assists multilateral environmental agreements to explore possibilities for the use of integrated assessment and

economic instruments in furthering their implementation of the biodiversity-related -related multilateral environmental agreements (CITES, the Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, CBD).

III. Inventory of UNEP capacity-building and technology support activities

A. Assessment

38. Environmental assessment and early warning are central to UNEP's mandate. To support the assessment process UNEP works with national, subregional and global institutions, centres of excellence and other partners to facilitate its work. To better work with these centres and partners in developing countries, UNEP has instituted an elaborate and comprehensive capacity-building programme to strengthen them and harmonize data gathering and synthesis. In developing national assessment and networking capacity, UNEP follows four stages of programme implementation:

- (a) Needs assessment upon request from a Government or collaborating centre;
- (b) Feasibility studies and pilot activities resulting in medium- and long-term capacity-building proposals;
- (c) Implementation using local and international expertise and consultants, in collaboration with partners;
- (d) Operational network participation in national, regional and international environmental assessments and related activities.

39. Through its capacity-building and technology support activities, UNEP assessment activities focus on achieving the following:

- (a) Comprehensive capacity-building to produce integrated environmental assessments (IEA's) at global, regional, sub-regional, national and city level using the GEO IEA methodology and approach;
- (b) Strengthening capacity for data and information management and exchange to support national level integrated environmental assessment and reporting as well as regional processes;
- (c) Establishing and/or strengthening environmental monitoring facilities and networks based on common methodologies and standards;
- (d) Building capacities of developing countries in the use of remote sensing data and the application of earth observation technologies for environmental analysis;
- (e) Technology support through the provision of satellite data for environmental and socio-economic planning and management;
- (f) Promoting access to environmental and socio-economic data through the development of a global data portal and the development of capacity to produce regional data portals;
- (g) Promoting best practices to increase the availability and accessibility to environmental data and information.

40. Specific assessment-related capacity-building programmes are listed in the following paragraphs.

1. Global capacity-building in integrated environmental assessment

41. This is a comprehensive capacity-building programme for integrated environmental assessment and reporting for decision-making in support of the GEO process. A range of high quality integrated environmental assessments (global GEO, regional and subregional environment outlooks) are being prepared using sound, compatible and harmonized methodologies which can be used to underpin policy and decision-making at appropriate levels. The following have been undertaken:

- (a) Strengthened Regional Networks of specialised partner institutions producing training and expertise for integrated environmental assessment and reporting at national, sub-regional and regional levels.
- (b) An updated integrated and harmonized capacity-building package comprising:
 - (i) A revised integrated environmental assessment and reporting training manual and support materials (printed, CD ROM, web versions, and other language versions);
 - (ii) Specialized in-depth modules of training package focusing on such areas as policy analysis, scenarios and modelling, data integration and analysis, indicators, awareness raising for decision makers, and development of multi-media products;
 - (iii) A training methodology to support the development of regional versions of the GEO data portal;
 - (iv) A train-the-trainers guide and course materials;
 - (v) More than 15 training workshops carried out in Africa, Asia and the Pacific, Latin America and the Caribbean and West Asia, based on specific needs and demand;
 - (vi) Twinning of institutions and joint projects and programmes emanating from the twinning arrangements being addressed during 2004-2005.

2. Regional capacity-building to strengthen national and subregional institutions in environmental assessment

42. Regional components of the comprehensive capacity-building for integrated environmental assessment programme described above in the following regions have helped to standardize the GEO methodology, harmonize data collection and analysis and strengthen national and subregional capacity, resulting in production of subregional and national state of the environment reports:

- (a) Africa;
- (b) East and Central Europe, e.g., the Caspian Sea region (in a transboundary context);
- (c) Latin America and the Caribbean;
- (d) West Asia;
- (e) GEO for cities.

3. The Millennium Ecosystem Assessment

43. The Millennium Ecosystem Assessment is a process designed to improve the management of ecosystems and their contribution to human development by helping to bring the best available information and knowledge on ecosystem goods and services to bear on policy and management decisions and building capacity at all levels to undertake integrated ecosystem assessments and act on their findings.

4. GIWA

44. Through GIWA, UNEP has assisted national and sub-regional institutions in 66 subregions around the world since 1999. Teams of local experts have been trained in the GIWA protocol.

5. Environmental information management and exchange

45. The Africa Environment Information Network (AEIN) project provides a framework for strengthening data and information management and sharing at the national level to support integrated environment assessment and reporting and also provides input into the regional reporting processes to produce the Africa Environment Outlook (AEO) report. The following 13 countries received direct assistance: Burkina Faso, Cameroon, Egypt, Ethiopia, Gabon, Ghana, Lesotho, Mauritius, Senegal, Seychelles, Tunisia, Uganda, Zambia.

46. The Asia Pacific Sub regional Environment Management and Information Systems (SEMIS) covers five countries, namely, Cambodia, China, Lao People's Democratic Republic, Myanmar, Thailand and Viet Nam.

47. Capacity-building for GEO (formerly ENRIN in CEE&NIS) and the Aarhus service in Central and Eastern Europe, the Caucasus region and Central Asia covers 24 countries.

48. INFOTERRA aims to improve access to environmental information at the national level through a mix of electronic and non-electronic mechanisms (in response to UNEP Governing Council decision 20/5) by involving focal points in 177 countries spread across Asia and the Pacific, Europe, Latin America and the Caribbean and West Asia.

6. Land assessments

49. The GEF/UNEP/FAO Land Degradation Assessment in Drylands programme has been developed, tested and disseminated and has led to an improved needs-based and process-driven approach to dryland degradation assessment.

50. The FAO/UNEP Global Land Cover Network (GLCN) is based on the recommendations of the UNCED/Agenda 21, which were endorsed by the Johannesburg Summit. It uses remote sensing and ground truthing together with geographical information system (GIS) technologies for coordinated, systematic and harmonized collection and assessment of data on land cover and environmental conditions, and especially for monitoring degradation. GLCN involves 26 countries in Africa (Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Mali, Mauritania, Niger, Nigeria, Senegal, Togo), Asia (Bangladesh, Bhutan, China, India, Indonesia, Lao People's Democratic Republic, Mongolia, Nepal, Philippines, Sri Lanka, Thailand, Viet Nam) and the Middle East (Iran).

51. A network survey and evaluation of existing networks and bodies relevant to implementation of the United Nations desertification convention supports Africa's SADC Anglophone countries in a pilot evaluation of the capacities of potential partners to implement the convention.

52. People, Land Management and Environmental Change (PLC) is a multi-country programme covering over 12 countries in Africa, Latin America and the Caribbean and Asia and the Pacific. PLC's objective was to develop sustainable and participatory approaches to biodiversity management and conservation.

53. The Desert Margins Programme (DMP) involves eight countries in Africa, namely, Botswana, Kenya, Mali, Namibia, Niger, Senegal, South Africa, and Zimbabwe, to assess dryland management practices, including traditional small-holder knowledge; improve understanding of the causes, extent, severity, and processes of soil and ecosystem degradation; and develop natural resource management strategies.

B. Atmosphere and climate change

54. The success of UNEP capacity-building and technology support in atmosphere and climate change hinges on the following three main interventions:

(a) Information exchange: developing, maintaining and disseminating current and relevant awareness-raising material, training tools and technical documents supported by scientific and technical panels of experts;

(b) Country programmes and institutional strengthening: providing technical assistance, advisory services and resource mobilization to assist countries in formulating their country programmes, national communications, action plans, etc., and to strengthen capacities of national institutions;

(c) Training and regional networking: training and regional networking promotes South-South technical cooperation and increases in-country expertise to further implement national programmes.

1. Ozone

55. Capacity-building and technology support activities are implemented under the GEF, the Multilateral Fund Montreal Protocol on Substances that Deplete the Ozone layer, and bilateral funding from donor countries. The activities include:

(a) The OzonAction Programme direct assistance to countries under its regionalized Compliance Assistance Programme, a global programme with a regional approach aimed at assisting countries to achieve compliance with obligations and commitments under the Montreal Protocol and its amendments in due time and with respect to control measures scheduled in 2005, 2007 and 2010. Examples of regional programmes include:

- (i) Capacity-building and training projects in 11 countries of the Middle East, namely, Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen;
- (ii) Country programmes for phasing out ozone-depleting substances in Latvia and Azerbaijan;
- (iii) A programme for phasing out ozone depleting substances in Armenia, Azerbaijan, Estonia, Latvia, Lithuania, Tajikistan, Turkmenistan, and Uzbekistan;

(b) The OzonAction Programme under the Multilateral Fund information clearing house, a global programme with emphasis on developing countries that operate under Article 5 of the Montreal Protocol, which has produced over 100 guidebooks, manuals, videos, posters and CD-ROMs and provides e-news and web services and a business-to-business web portal to facilitate the trade of ozone-depleting substances to avoid new production of hazardous chemicals.

(c) Promotion of interlinkages in cost-effective implementation of multilateral environmental agreements related to chemicals and atmospheric clusters (OzonAction Programme) through a global programme being undertaken to build the capacity of Governments and industry through activities such as “green customs” or best practices in emission reduction of greenhouse gases.;

(d) A programme to promote the early phase-out of methyl bromide through awareness raising, policy development and demonstration and training activities in 11 countries in Europe, namely, Bulgaria, Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Moldova, Poland, Slovenia and Uzbekistan;

(e) Refrigerant management plans in 10 Asia Pacific countries, namely, Bangladesh, Cambodia, Fiji, Lao People's Democratic Republic, Maldives, Mongolia, Nepal, Republic of Korea, Sri Lanka, and Viet Nam, aim to develop the capacity of refrigeration technicians to reduce emissions of ozone-depleting substances through good practices in refrigeration servicing and to train customs officers to effectively control the trade in ozone-depleting substances.

2. Air Pollution

56. The Partnership for Clean Fuels and Vehicles is a global programme that focuses initially on two priority areas: the elimination of lead in gasoline and the phase-down of sulphur in diesel and gasoline fuels, concurrent with the adoption of cleaner vehicle technologies.

57. UNEP is providing assistance to enhance national capacity and to address the increasing threat of transboundary air pollution in support of the Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects for eight countries in South Asia, namely, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan and Sri Lanka.

58. The project on prevention and control of dust and sand storms in northeast Asia, with a focus on China and Mongolia, aims to facilitate cooperation and coordination of interventions by the major stakeholders in northeast Asia to address the transboundary environmental problem of dust and sandstorms.

59. Legal advisory services are being provided to the Association of South-East Asian Nations (ASEAN) for the negotiation and adoption of the ASEAN Transboundary Haze Pollution Agreement. The following 10 countries were supported: Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Myanmar, Malaysia, Philippines, Singapore, Thailand, Viet Nam.

3. **Climate Change**

60. The Greenhouse Gas Emission Reduction from Industry in Asia and the Pacific (GERIAP) programme involved 9 countries in addressing climate change by becoming more energy efficient and thereby reducing greenhouse gas emissions and costs: Bangladesh, China, India, Indonesia, Mongolia, Philippines, Sri Lanka, Thailand, and Viet Nam.

61. Sustainable Building and Construction is a global programme aimed at enabling the construction sector to move towards sustainable development. Also related is an online course on sustainable construction developed to generate awareness of the environmental impacts of construction activities and to explain the importance of sustainability in everyday decisions and actions of local stakeholders

62. Through GEF funding for climate change, UNEP is assisting 24 countries to prepare national communications to UNFCCC in accordance with article 12.1 of the convention. UNEP will be supporting these and 12 other countries to prepare second national communications to UNFCCC through a global UNEP/UNDP/GEF project, approved in November 2003.

63. In addition, UNEP is assisting 15 least developed countries develop climate change national adaptation programmes of action, in accordance with the decisions adopted by the Conference of the Parties to UNFCCC at its seventh session:

(a) The Assessment of Impacts of and Adaptation to Climate Change in Multiple Regions and Sectors (AIACC) project aims to develop capacity to address assessment gaps through training, technology transfer and interaction with international assessment teams. So far, 24 selected research projects have been finalized, and studies commenced, and more than 100 scientists from 45 developing countries have been involved;

(b) A programme on capacity-building and infrastructure and participation in the assessment, methodology development, and other activities of the Intergovernmental Panel on Climate Change (IPCC) is a global capacity-building programme that aims to enhance and strengthen scientific and technical capacity of developing countries and countries with economies in transition through their experts' participation in IPCC activities;

(c) Country case studies on climate change impacts and adaptations assessment offer support to 4 countries (Antigua and Barbuda, Cameroon, Estonia and Pakistan) to test and improve methodologies and guidelines through a series of country studies for assessing climate change impacts and adaptation and supports stage I adaptations measures as approved by the Conference of the Parties to UNFCCC at its first session;

(d) Country case studies on sources and sinks of greenhouse gases in Gambia, Mexico, Poland, Senegal, Tanzania, Uganda, Venezuela and Costa Rica;

(e) Phase I of a programme on the economics of greenhouse gas limitation in the following 8 countries: Ecuador, Estonia, Hungary, India, Mauritius, Senegal, Viet Nam and Argentina;

(f) Over 22 projects on climate change enabling activities for the preparation of initial communication related to UNFCCC have been carried out in Africa (e.g., Cameroon, Comoros, Côte d'Ivoire, Djibouti, Kenya, Lesotho, Libya, Mauritius, Rwanda, South Africa, Tanzania, Zambia,), Eastern and Central Europe (e.g., Czech Republic, Estonia, Georgia, Hungary, Kyrgyzstan, Latvia, Lithuania, Mauritania, Moldova, Poland, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan), Latin America and the Caribbean (e.g., Cayman Islands, Costa Rica, El Salvador, Haiti, Honduras, Guatemala, Mexico, Nicaragua, Panama) Asia and the Pacific (e.g., Bangladesh, Mongolia, Nepal, Niue, Pakistan, Philippines, Viet Nam,) and the Middle East (e.g., Bahrain);

(g) The national communications programme for climate change is a global programme that provides capacity-building and financial assistance for up to 130 countries to prepare second national communications to UNFCCC in which UNEP assumed implementation support to 30 countries to promote integration of climate change policy into national development priorities;

(h) Over 13 projects on expedited financing of climate change enabling activities also entail capacity-building. UNEP has undertaken activities in Africa (Comoros, Côte d'Ivoire, Kenya, Lesotho, Mauritania, Mauritius, Tanzania, Zambia, Zimbabwe), Asia and Pacific (China, Nepal, Niue, Viet Nam), Europe (Kazakhstan, Russian Federation) and the Middle East (Iran);

(i) Redirecting Commercial Investment Decisions to Cleaner Technologies - A Technology Transfer Clearinghouse is a global programme that facilitates the mitigation of up to one million tons of carbon emissions by redirecting pending commercial investment decisions towards cleaner technologies.

C. Biodiversity

64. UNEP capacity-building and technology support activities in the area of biodiversity can be grouped under three categories as follows:

(a) Institution strengthening in integrated policy design and implementation, information management, assessment and planning;

(b) Research, training and education of scientific, technical and managerial personnel;

(c) Technology support and facilitation of technology transfer.

65. The following listing provides examples of key capacity-building and technology support projects in relation to biodiversity:

(a) An Ecosystem Approach to Restoring West African Drylands and Improving Rural Livelihood through Agro-forestry-based Land Management Interventions, in 5 countries (Burkina Faso, Mali, Mauritania, Niger, Senegal);

(b) Renewable Energy Resources and Conservation of Flora Species in the Drylands of the Mega-Chad Sub-Region, covering 4 countries (Nigeria, Chad, Niger, Cameroon);

(c) The Impact of Desertification on Food Security in Southern Africa, a case study for Zimbabwe (UNEP/International Soil Reference and Information Centre/Government of Zimbabwe project);

(d) A feasibility study on the establishment of a gene bank for plant genetic resources, which strengthened the capacity of 20 Arab countries in the Middle East (Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen) and Africa (Algeria, Comoros, Djibouti, Egypt, Libyan Arab Jamahiriya, Mauritania, Morocco, Sudan, Tunisia);

(e) A project to provide technical support on land degradation control to ensure sustainable use of Yemen's natural resources;

(f) Study and Regional Database on Sustainable Water Resources and Vegetation Cover Management in West Asia, focusing on 11 countries, namely, Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen;

(g) Integrated natural resource management -- Implementation of start-up activities to establish institutional and community arrangements on integrated natural resource management in four countries in the Middle East: Jordan, Lebanon, Yemen and Syria;

(h) Service for implementing national biodiversity strategies and action plans (Biodiversity Service) in 24 countries of Central and Eastern Europe, the Caucasus region and Central Asia;

(i) Regional Strategy for Biodiversity and Protocols: Establishment of Protected Areas in the ROPME and PERSGA Regions is a multi-country project in 11 countries: Djibouti, Egypt, Eritrea, Iran, Jordan, Kuwait, Oman, Saudi Arabia, Somalia, Sudan and Yemen, ;

(j) Supporting the Implementation of the Pan-European Biological and Landscape Diversity Strategy (PEBLDS) in the 53 member countries of the United Nations Economic Commission for Europe (UN-ECE);

(k) Implementation of biodiversity conventions and national action plans and preparation for the seventh session of the Conference of the Parties and the first Meeting of the Parties in 20 countries in the Middle East (Lebanon, Bahrain, Iraq, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen), and Africa (Algeria, Comoros, Djibouti, Egypt, Libyan Arab Jamahiriya, Mauritania, Morocco, Sudan, Tunisia);

(l) The Implication of International Conventions on the Development of National Policies and Legislations Related to Biodiversity Conventions in the Middle East (Bahrain, Iraq, Kazakhstan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia) and Africa (Algeria, Comoros, Djibouti, Egypt, Libyan Arab Jamahiriya, Mauritania, Morocco, Sudan, Tunisia);

(m) Third round of country projects: integrated assessment of trade liberalization in the agricultural sector (with focus on the rice sector) is a multi-country project that involved seven countries in Asia (China, Colombia, Indonesia and Viet Nam) and Africa –(Ivory Coast, Nigeria and Senegal);

(n) Training courses on marine turtle conservation carried out in the framework of the implementation of the action plan for the protection of marine turtles for 6 countries (Cyprus, Egypt, Israel, Lebanon, Syria, Tunisia).

66. Through GEF funding for biodiversity, UNEP capacity-building and technology support activities include the following:

1. Biosafety

67. To build capacity to implement the Cartagena Protocol on Biosafety to CBD, UNEP, with funding from GEF, is implementing a global programme of national projects in 123 countries to develop national biosafety frameworks. As pilot projects, UNEP/GEF is also supporting eight countries to implement national biosafety frameworks developed in an earlier phase of the programme. In addition, UNEP is supporting 50 countries to access the Biosafety Clearing-House.

2. Biodiversity strategies, enabling activities and clearing-house mechanism

68. Through biodiversity enabling activities, UNEP is assisting 28 eligible countries to: (a) prepare national biodiversity strategies and action plans in accordance with article 6 of CBD; (b) prepare national reports to the Conference of Parties in accordance with CBD article 26; and (c) access the Biodiversity Clearing-House.

69. Through AMCEN, UNEP is also supporting African countries through a programme on capacity-building for the development of subregional environmental action plans under NEPAD.

70. Support to the National Plan of Action for the Protection of the Arctic Marine Environment from Anthropogenic Pollution in the Russian Federation.

3. Needs assessments

71. As the first step in implementing the GEF strategic approach to enhancing capacity-building, GEF and its three implementing agencies have launched a national capacity needs self-assessment programme for global environment management, in which countries identify national needs and priorities for capacity-building to implement the Rio Conventions. Examples include:

(a) Assessment of capacity-building needs and country-specific priorities in the conservation of biodiversity (article 8j) and preparation of a second national report to CBD for Colombia;

(b) Assessment of capacity-building needs in country-specific priorities in biodiversity management and conservation in Egypt;

(c) Over 26 biodiversity enabling activity: additional clearing-house mechanism module;

(d) Biodiversity enabling activity: additional funding for assessment of capacity-building needs for biodiversity, participation in the clearing-house mechanism and preparation of a second national report;

(e) China: capacity-building of clearing-house mechanism and preparation of a second national report to the Conference of the Parties.

4. **Drylands and land degradation**

72. Activities in this area include the following:

(a) A Strategy for the Integrated Conservation of Dryland Biodiversity through Land Rehabilitation in the Arid and Semi-Arid Regions of Mozambique, Zambia and Zimbabwe;

(b) An indicator model for dryland ecosystems in Latin America (Brazil, Chile and Mexico) to provide a modelling tool for identifying vulnerable dryland ecosystems and communities, develop appropriate management plans and monitor change following implementation of these plans;

(c) Building Scientific and Technical Capacity for Effective Management and Sustainable Use of Dryland Biodiversity in West African Biosphere Reserves in Benin, Burkina Faso, Cote d'Ivoire, Mali, Niger, and Senegal;

(d) Promoting Best Practices for Conservation and Sustainable Use of Biodiversity of Global Significance in Arid and Semi-Arid Zones in Africa (Burkina Faso, Mali, Morocco, Nigeria, Senegal and Tunisia) Latin America (Brazil, Jamaica, Mexico); the Middle East (Jordan, Kuwait, Syria); and Asia (Mongolia, Pakistan);

(e) Management of Indigenous Vegetation for the Rehabilitation of Degraded Rangelands in the Arid & Semi-Arid Zone in Kenya, Mali, and Botswana;

(f) Biodiversity Conservation through Participatory Rehabilitation of Degraded Lands of Arid and Semi-Arid Transboundary Areas of Mauritania and Senegal;

(g) Global support to facilitate the early development and implementation of land degradation programmes and projects under GEF Operational Programme 15.

5. **Data and information management**

73. Activities in this area include the following:

(a) Biodiversity country studies to gather and analyze the data required to drive forward the process of developing national strategies, plans or programmes for the conservation and sustainable use of biological diversity in 22 countries in Africa (Burkina Faso, Democratic Republic of Congo, Ghana, Guinea, Madagascar, Morocco, Mozambique, Namibia, Nigeria, Tanzania, Tunisia); Asia and the Pacific (China, Colombia, Malaysia, Papua New Guinea and the Philippines); the Middle East (Jordan, Lebanon and Syria); Latin America and the Caribbean (Bahamas, Cuba and Peru); and Europe (Estonia and Georgia);

(b) Biodiversity Conservation and Integration of Traditional Knowledge on Medicinal Plants in National Primary Health Care Policy in Central America and the Caribbean, in Nicaragua, Panama, Dominican Republic and Honduras;

(c) Biodiversity Data Management Capacitation in Developing Countries and Networking Biodiversity Information, to enhance the capacity of developing countries in data and biodiversity information management to support the implementation of CBD in Africa (Egypt, Ghana, Kenya); Latin America and the Caribbean (Bahamas, Chile, Costa Rica); Asia and the Pacific (Papua New Guinea, Thailand); and Europe (Poland);

(d) Biodiversity Indicators for National Use, aimed at improving the information on which decisions are based in four countries: Ecuador, Philippines, Ukraine and Kenya;

(e) Biodiversity Planning Support Programme is a global programme that draws on the full range of national and global experience to develop and provide the information, tools, training, and communication needed to develop and implement comprehensive, multi-sectoral and timely action plans and to ensure a smooth transition between the development and implementation stages;

- (f) Coral reef data acquisition and monitoring (in collaboration with the International Coral Reef Action Network ICRAN);
- (g) The Coral Reef Road Show: coral reef communication training pack.

6. Resource management

74. Activities in this area include the following:

- (a) Catalyzing Conservation Action in Latin America: Identifying Priority Sites and Best Management Alternatives in Five Globally Significant Ecoregions;
- (b) China: Lop Nur Nature Sanctuary Biodiversity Conservation;
- (c) Conservation and Sustainable Management of Below-Ground Biodiversity (Phase 1);
- (d) Conservation of Graminae and Associated Arthropods for Sustainable Agricultural Development in Africa;
- (e) Development of a Wetland Site and Flyway Network for Conservation of the Siberian Crane and other Migratory Water birds in Asia;
- (f) Sustainable Conservation of Globally Important Caribbean Bird Habitats: Strengthening a Regional Network for a Shared Resource;
- (g) Enhancing Conservation of the Critical Network of Wetlands Required by Migratory Water Birds on the African-Eurasian Flyways;
- (h) Integrated Ecosystem Approach through Collaborative Management to Conserve Biodiversity and Minimize Habitat Fragmentation in Three Selected Model Areas in the Russian Arctic;
- (i) Development of the Econet for Long-term Conservation of Biodiversity in the Central Asia Ecoregions;
- (j) Establishment of a Programme for the Consolidation of the Meso-American Biological Development of Best Practices and Dissemination of Lessons Learned for dealing with the Global Problems of Alien Species that Threaten Biological Diversity;
- (k) Ecosystems, Protected Areas and People, a global programme to enable organizations responsible for protected area policy and management to share lessons in coping with global change factors;
- (l) Integrated Management of Cedar Forests in Lebanon in Cooperation with other Mediterranean Countries;
- (m) In-situ Conservation of Wild Crop Relatives through Enhanced Information Management and Field Application;
- (n) Lake Baringo (Kenya) Community -based Integrated Land and Water Management Project;
- (o) Nature Conservation and Flood Control in the Yangzte River Basin (China);
- (p) Arun Valley Sustainable Resource Use and Management Pilot Demonstration Project in Nepal;
- (q) Reduction of Environmental Impact from Tropical Shrimp Trawling through the Introduction of By-catch Reduction Technologies and Change of Management;
- (r) Emergency Response to Combat Forest Fires in Indonesia to Prevent Haze in South-East Asia;
- (s) Measures for CBD Implementation (Assessment of Capacity-building Needs: Access to Genetic Resources and Benefit-sharing, Conservation and Sustainable Use of Biodiversity Important for Agriculture, Forestry and Research);
- (t) Community Based Management of On-Farm Plant Genetic Resources in Arid and Semi-Arid Areas of Sub-Saharan Africa;

(u) Promoting Ecosystem-based Approaches to Fisheries Conservation and LMEs. This project is supporting capacity-building in developing countries and countries with economies in transition through the transfer of advanced methods, practices and tools for ecosystem-based fisheries management;

(v) Combating Coastal Area Degradation and Living Resources Depletion in the Guinea Current LME through Regional Actions, a project focused on priority problems identified by the 16 GCLME countries that have led to unsustainable use of marine resources, including fisheries, and degradation of marine and coastal ecosystems. The following 14 African countries are involved in the project: Benin, Cameroon, Democratic Republic of Congo, Côte d'Ivoire, Gabon, Ghana, Equatorial Guinea, Guinea-Bissau, Liberia, Nigeria, São Tomé and Príncipe, Sierra Leone, Togo and Angola;

(w) ICRAN joint monitoring expedition - Singapore and Thailand;

(x) A workshop in Indonesia to train stakeholders in implementing co-management for Gilli Islands Marine Recreation Park Outcome: Engagement of stakeholders in managing their resources;

(y) Implementation of the action plan for the protection of cetaceans, marine vegetation and the Monk Seal;

(z) Komodo National Park ICRAN project on coral reefs and marine management;

(aa) Marine park management (coral reefs) course in Ninh Thuan Province, Viet Nam;

(bb) Development and implementation of a sustainable resource management plan for Marsabit mountain(Kenya) and its associated watersheds.

D. Chemicals and waste

75. UNEP capacity-building and technology support in the field of chemicals starts with the awareness raising, making Governments aware of the issue and its inter-relationships with broader issues of environment, health and sustainable development. When the negotiation of a multilateral environmental agreement is pending, attention is given to the issue that will be of particular relevance in the negotiation. UNEP provides technical and policy support to Governments in negotiating and implementing multilateral environmental agreements. General principles followed include integrated implementation and use of multilateral environmental agreements, intra-government coordination and stakeholder involvement and ownership. UNEP is also promoting interlinkages in cost-effective implementation of multilateral environmental agreements related to chemical and atmospheric clusters (OzonAction Programme).

1. Persistent organic pollutants

76. PCB inventories and national action plans is a multi-country project in Africa, East and Central Europe and Latin America and the Caribbean, the objective of which is to develop inventories of polychlorinated biphenyls PCBs (Stockholm Convention) to be managed and disposed of.

77. The global programme on monitoring and assessment of persistent organic pollutants (POPs) collects information necessary to monitor the presence of POPs in the environment in a harmonized manner and provide assistance to countries in developing and maintaining monitoring networks.

78. The POPs alternatives programme assists 50 countries around the world in moving away from POPs and other pesticide use and developing an integrated health and agriculture approach in seeking alternatives and assists countries in meeting their obligations under the Stockholm Convention;

79. Training in the use of the dioxin/furan inventories toolkit assists developing countries globally in using the dioxin/furan toolkit to develop and harmonize inventories.

80. Dioxin/Furan Inventories in Asia and Latin America is a project for managing dioxin/furan releases to the environment which covers eight countries, namely, Argentina, Brunei Darussalam, Cuba, Jordan, Lebanon, Paraguay, Philippines, and Viet Nam.

81. Through GEF funding to support implementation of the Stockholm Convention on Persistent Organic Pollutants (POP's), UNEP is currently assisting 52 countries to prepare national implementation plans for POPs in accordance with article 7 of the Convention. Specific capacity-building and technology support activities include:

(a) Assessment of existing capacity and capacity-building needs to analyse POPs in developing countries, a global project the aim of which is to assess convention-driven country needs for laboratory analysis and assess the feasibility of establishing fully equipped laboratories in a developing country that may be able to analyze all twelve POPs, including dioxins and furans;

(b) Development of a national plan for the implementation of the Stockholm Convention, a multi-country programme that aims to strengthen national capacity to manage POPs and assist countries meet their obligations under the Stockholm Convention in 11 countries, namely, Bulgaria, Chile, Ecuador, Guinea, Lebanon, Mali, Micronesia, Papua New Guinea, Slovenia, Zambia and Belarus;

(c) Enabling activities for the Stockholm Convention: national implementation plans for Africa (Benin, Cameroon, Côte d'Ivoire, Gambia, Madagascar, Mauritania, Mozambique, Kenya, Senegal, South Africa and Zimbabwe), Asia and the Pacific (Cambodia, Fiji, Kiribati, Marshall Islands, Nauru, Palau, Sri Lanka, Thailand, Tonga and Vanuatu), Eastern and Central Europe (Kyrgyz, Serbia and Montenegro, Tajikistan, Ukraine and Yugoslavia); Latin America and the Caribbean (Antigua and Barbuda, Argentina, Cuba, Haiti, Paraguay, Peru, Saint Lucia and Uruguay,) and the Middle East (Jordan, Oman, Syria and Yemen);

(d) Regional Program of Action and Demonstration of Sustainable Alternatives to DDT for Malaria Vector Control, a project that aims at strengthening national and local institutional capacity to control malaria without the use of DDT and the elimination of DDT stockpiles in eight participating countries in Latin America (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama);

(e) Persistent Toxic Substances, Food Security and Indigenous Peoples of the Russian North, and the global programme Regional-Based Assessment (RBA) of Persistent Toxic Substances, which support countries efforts' to assess threats from persistent toxic substances and prioritize possible future interventions.

1. Management of chemicals and hazardous wastes

82. Regional capacity-building and training on industrial waste management is a global programme to improve the capacity of national officials and trainers to undertake national-level training (train the trainers) and to give national officials insight into policy and technical options for prevention and management of waste.

83. The mercury risk reduction programme covers a total of 140 countries globally, providing technical assistance, training and awareness raising to reduce risks from mercury poisoning.

84. The clearinghouse on sound management of chemicals is a global programme to assist countries to improve their capacity with respect to the sound management of chemicals.

85. A regional workshop on sewage sludge reuse and disposal aimed at familiarizing countries in the wider Caribbean region with common techniques as well as alternative and new techniques for sewage sludge treatment. A total of 21 countries and territories were involved: Anguilla, Aruba, Bahamas, Barbados, Belize, Costa Rica, Cuba, Dominica, Grenada, Guyana, Haiti, Honduras, Jamaica, Netherlands Antilles, Nicaragua, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago.

86. The programme for support for implementation of the Rotterdam Convention assists 100 countries globally to improve convention implementation, enhance risk reduction and implement and ratify the convention.

87. Training courses on the analysis of organic and inorganic contaminants build capacity for the implementation of national monitoring programmes in Mediterranean countries.

88. Training on municipal wastewater management aimed to enable municipal managers in a growing number of countries to improve the management of wastewater collection and treatment facilities. It covered the following countries: Bonaire, Brazil, Kenya, Mozambique, Philippines, South Africa, Sri Lanka, Tanzania and Turkey.

89. The Reducing Pesticide Runoff to the Caribbean Sea programme focused on three countries: Colombia, Costa Rica and Nicaragua.
90. Regional capacity-building in Waste Management advances the transfer, adoption and use of environmentally sound technologies (EST's) through capacity-building and information exchange in 11 Middle East countries namely, Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen;
91. Other projects include:
- (a) A Directory of Environmentally Sound Technologies for the Integrated Management of Solid, Liquids and Hazardous Wastes in the Caribbean;
 - (b) Regional Capacity Building in Chemicals Management in 10 Middle East countries namely, Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Syria, United Arab Emirates, and Yemen;
 - (c) Institutional strengthening projects in 19 countries in Asia and the Pacific (Brunei Darussalam, Cambodia, Fiji, Kiribati, Democratic People's Republic of Korea, Lao People's Democratic Republic, Maldives, Marshall Islands, Micronesia, Mongolia, Myanmar, Nepal, Palau, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu, Viet Nam);
 - (d) Obsolete pesticides clean up project - South Pacific, and disposal of Caribbean and African stockpiles;
 - (e) Technical guidance on management of chemicals;

E. Economics and Trade

92. UNEP aims to enhance the capacities of countries to analyze interlinkages between trade, environment and economic policies, and to design and implement policies which maximize sustainable development gains. The four areas of focus are:
- (f) Integrated assessment and planning,
 - (g) Economic incentives,
 - (h) Sustainable trade,
 - (i) Support for multilateral environmental agreement implementation.
93. UNEP supported capacity-building on environmental impact assessment, integrated assessment of plans, programmes and policies and economic instruments through the provision of reference and training resource manuals, regional training activities and country projects at national level. It has assisted countries in assessing the economic, social and environmental implications of policies, including trade policies, through three rounds of country-led case studies. These studies have supported the development of detailed methodologies on integrated assessments, and strengthened capacities with respect to participatory processes, inter-ministerial coordination and policy design and implementation.
94. UNEP also supports countries in the design and implementation of economic instruments to promote the sustainable management of natural resources, including forestry, fisheries and agricultural products. Aiming to address the poverty-trade-environment linkage, UNEP is currently assisting nine governments to integrate economic, social and environmental considerations into planning processes, with a focus on poverty reduction and sustainable trade promotion.
95. Specific examples of the main activities include the following:
- (a) UNEP/UNCTAD Capacity-Building Task Force, launched in 2000, combines the expertise of UNEP and UNCTAD to provide stronger support for a wider range of capacity-building activities related to environment, trade and sustainable development. The task force aims to assist developing countries to better understand trade, environment and development interlinkages and participate effectively in related negotiations and discussions. In the first three years, it carried out a wide range of capacity-building activities in different regions, including thematic research, country projects, regional training seminars, development and dissemination of training materials. Its programme for the period 2004–2006 will continue these activities and address needs identified in the first phase.

- (b) Training and workshops, including the following:
- (i) A multi-stakeholder forum on capacity-building on policy and legal aspects of trade and environment, covering 50 countries globally;
 - (ii) A regional capacity-building in trade, environment and development project to develop and improve the capacities of countries in the application of assessment methodologies and incentive tools in nine Middle Eastern countries: Bahrain, Iraq, Jordan, Kuwait, Lesotho, Oman, Qatar, Syrian Arab Republic, United Arab Emirates and Yemen;
 - (iii) Training on environmental impact assessment in the Mediterranean countries;
 - (iv) A workshop on the impact of free trade on small and medium-sized textile firms in the Mediterranean countries;
 - (v) Application and use of economic instruments for sustainable development for the African region, covering nine countries, namely, Egypt, Ethiopia, Ghana, Kenya, Nigeria, Senegal, South Africa, Tanzania, Uganda;
 - (vi) UNEP workshops on environment, trade and sustainable development.
96. Reference materials, manuals and guidelines in this area include the following:
- (a) Development of a reference manual on integrated assessment of trade-related policies as a global project;
 - (b) Development of reference material and country projects on the impact of fishery subsidies on the environment involving Argentina, Bangladesh, Mauritania, Senegal and Uganda;
 - (c) Development of reference material on energy subsidies in 10 countries: Chile, Czech Republic, India, Indonesia, Iran, (Islamic Republic of), Republic of Korea, Russian Federation, Senegal and Slovakia;
 - (d) Development of a training module: introduction to capacity-building on trade, environment and sustainable development as a global project;
 - (e) Dissemination of the UNEP Environmental Impact Assessment (EIA) Training Resource Manual globally;
 - (f) Reference material on the use of economic instruments for environmental policy making;
 - (g) Second phase country projects: implementation of policy response packages to assist countries in choosing and designing policy instruments, especially economic instruments, in specific sectors and effectively implement them (involved Argentina, China and Senegal).

F. Energy

97. The goal of UNEP's energy programme is to promote a longer-term, environmental dimension into energy sector decisions. The emphasis is on building human capacities and increasing opportunities for development while contributing towards significant reductions in the harmful effects of energy production and use. Working with a wide range of partners, UNEP helps develop and implement approaches for analysing various energy policies, climate change mitigation options, energy sector reform, industrial energy efficiency and the environmental implications of transport choices. Capacity-building and technology support activities on energy cover the following areas: renewable energy, energy efficiency, energy policy, energy finance, and transport.

1. Renewable energy

98. The Rural Energy Enterprise Development Initiatives (REED) are enabling the private sector to deliver affordable energy services based on clean and renewable energy technologies. REED programmes are currently running in 5 African countries, in Brazil and in China.

99. UNEP has helped Natural Resources Canada to enhance the performance of the RETScreen™ renewable energy pre-feasibility analysis software by adding a greenhouse gas emissions ‘calculator’ and developing a renewable energy training programme.

100. Solar and wind energy resource assessment (SWERA) demonstrates the use of solar and wind resource data and geographic information assessment tools in investment and policy decision-making, and builds local capacities for their continuous use. Thirteen countries have developed solar and wind energy plans.

101. The Global Programme on Women and Uptake of Renewable Energy Technologies covered 30 countries globally, with additional follow up activities in 17 countries in Africa. The objective was to raise awareness and promote knowledge and skills of women leaders in making energy choices and participating in decision-making on projects related to renewable energy

102. The Joint Geophysical Imaging (JGI) Methodology for Geothermal Reservoir Assessment is a project in Kenya aimed at reducing the cost and impacts of geothermal power below those of fossil fuel plants by locating high-production geothermal wells.

103. Other projects include:

(a) Generation and Delivery of Renewable Energy Based Modern Energy Services in Cuba: the case of Isla de la Juventud;

(b) Development of a Strategic Market Intervention Approach for Grid-Connected Solar Energy Technologies (EMPower);

(c) Renewable Energy Based Electricity Generation for Isolated Minigrids in Zambia.

1. Energy efficiency

104. Projects in this area include:

(a) Promoting Industrial Energy Efficiency through a Cleaner Production/Environmental Management System Framework, in the following 6 countries: China, Czech Republic, Hungary, India, Slovakia and Viet Nam;

(b) Energy Management and Performance Related Energy Savings Scheme (EMPRESS) for the Czech Republic and Slovakia. The project is helping establish specialized energy service companies (ESCOs) that provide services to industrial and commercial clients in CEE countries;

(c) Investigation of ways to overcome financial sector barriers to lending for energy efficiency projects in Brazil, China, and India;

(d) Capacity-building for integration of cleaner production and energy efficiency in Czech Republic, China, Hungary, India, Slovakia and Viet Nam. This GEF-funded project is helping national cleaner production centres integrate energy efficiency into their mainstream production and consumption programmes;

(e) Energy Savings in Cities is a global project aimed at raising awareness among decision makers on the importance of energy-saving technologies at the country level.

1. Energy policy

105. UNEP has underway efforts aimed at helping Governments in sub-Saharan Africa with power sector reform, energy sector finance, energy subsidy reform and climate change policy.

106. The Global Network on Energy for Sustainable Development (GNESD) promotes sustainable energy approaches through coordinated programmes of policy analysis, practical advice, targeted research and investment promotion.

107. UNEP conducted a series of regional workshops on environmental, social and economic impacts of energy subsidies and their reform.

1. Energy finance

108. By working with various types of financial institutions, insurance companies and Export Credit Agencies, UNEP is exploring ways to direct finance and investment flows to sustainable energy projects, particularly in developing countries.

109. UNEP is working with rural Indian finance institutions to develop a credit facility for solar system purchases that uses UN Foundation resources to buy down the initial risks of lending to this sector.

110. Sustainable Energy Finance Initiative (SEFI) is being undertaken jointly with UNEP FI and the Basel Agency for Sustainable Energy to strengthen the understanding of financial institutions of the characteristics of renewable energy projects so that more financing can flow to these non-conventional alternatives.

1. Transport

111. UNEP manages a Mobility Forum for discussion and joint activities involving representatives of major automotive manufacturers. Also, a campaign on environmentally friendly driving behaviours is being designed.

112. The Partnership for Clean Fuels and Vehicles is a global programme to assist developing countries to reduce vehicular air pollution by providing technical assistance and encouraging exchange of experiences and successful practices.

113. The UNEP/OECD publication, *Phasing Lead out of Gasoline – An Examination of Policy Approaches in Different Countries*, describes successful programmes to eliminate the use of lead in gasoline.

G. Environmental law

114. Partnerships with global, regional and national institutions engaged in environmental law are vital for UNEP's programme for the development and implementation of environmental law in developing countries. Among the institutions that have a mutually beneficial partnership with UNEP in this field are the Hans Seidel Foundation, the Commonwealth Secretariat, the Universities of Pretoria and Auckland, the Ford Foundation, United Nations University and the United Nations Institute for Training and Research.

115. Assistance in the development of relevant sectoral legislation has also been rendered by several United Nations agencies such as FAO, WHO, the United Nations Educational, Scientific and Cultural Organization (UNESCO), etc. International organizations such as IUCN have also made a significant contribution in the development of national environmental legislation in several developing countries. The World Bank and regional development banks have also assisted in development of sectoral legislation related to their loan agreements.

116. Pursuant to its mandate to build the capacity of developing countries and countries with economies in transition on environmental law, UNEP has provided assistance to more than 75 developing countries, at their request, to develop national environmental legislation and related institutions. Such assistance includes review of existing national legislation and related institutions, drafting of general and sectoral environmental legislation and elements for use in drafting legislation, preparation of legal components of national environmental and conservation strategies and legal advice on appropriate legislation and institutions for environmental management. The capacity-building activities focus on the following key aspects:

(a) Providing technical support and advisory services to enhance the participation of representatives, including civil society, in international meetings and negotiations related to environmental policy and law;

(b) Assisting countries to adopt, implement, comply with and enforce multilateral environmental agreements and strengthen regulatory and institutional capacity at the national level;

(c) Providing training in integrated policy design and implementation, promoting education and training in environmental law, including developing and disseminating capacity-building tools and materials, particularly on comparative environmental legislation.

117. Specific examples of key UNEP capacity-building activities in environmental policy and law are described in the following paragraphs.

1. Symposia for judges

118. Symposia for judges have the following overall goals: To provide a global perspective on the importance of the judiciary in promoting sustainable development through the rule of law at the national level; to lay a foundation for a well structured, coordinated and sustained programme of support for capacity strengthening of national judiciaries around the world in the area of environmental law; and to enhance the profile and the level of understanding of approaches taken by the judiciary in the implementation of environmental law. The following symposia have been held so far, involving more than 70 countries globally

(a) Global Judges Symposium on Sustainable Development and the Role of Law, with participation of 58 countries: Africa – 18; Asia Pacific – 12; Europe – 9; Latin America and Caribbean – 7; Middle East – 9; North America – 2;

(b) Judges Ad Hoc Meeting for the Development of a Plan of Work as a Follow-Up to the Global Judges Symposium Relating to Capacity-Building of Judges, Prosecutors, and Other Legal Stakeholders, involving the following 19 countries: Africa (Egypt, Kenya, Senegal, South Africa, Tanzania) Asia and Pacific (Australia, Philippines); Europe (Belgium, France, Greece, Italy, Romania, United Kingdom); Latin America and Caribbean (Brazil, Mexico, Saint Lucia); North America (Canada, United States of America); Middle East (Jordan);

(c) Chief justices and Senior Judges Subregional Needs Assessment and Planning, with meetings were held in Eastern and Central Europe, English Speaking Caribbean countries, Latin America, countries of the Mekong Delta and the Pacific Islands;

(d) Pacific Judges Symposium on Environmental Law and Sustainable Development;

(e) Rome judges meeting to sensitize judges on the role of the judiciary for the promotion of sustainable development in Europe;

(f) Conference on the role of the judiciary in the development of environmental law in the Arab region, which involved 11 countries, namely, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, United Arab Emirates and Yemen.

2. Development and implementation of environmental law

119. The programme on compliance with and enforcement of multilateral environmental agreements is a global programme that aims to enhance capacities of enforcement officers for implementation and enforcement of multilateral environmental agreements at the national level, taking into account poverty alleviation strategies.

120. The PADELIA project aims to support and promote enhancement of the capacities of African countries for the development and strengthening of environmental law and corresponding national and regional institutions to ensure effective enforcement of laws. A total of 13 countries receive direct assistance: Burkina Faso, Malawi, Mozambique, São Tomé and Príncipe, Botswana, Lesotho, Swaziland, Mali, Niger, Senegal, Kenya, Tanzania and Uganda.

121. A Participatory Approach to Managing the Environment: An input to the Inter-American Strategy for Participation (ISP) is a GEF-funded project which aims to build capacity within the countries of the Americas for the successful incorporation of public participation practices in sustainable development policy formulation and decision-making; to design mechanisms to improve communication; and promote partnership. The following 29 countries were involved: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Saint Vincent and the Grenadines, Guatemala, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Lucia, Trinidad and Tobago, Uruguay, Venezuela, Saint Kitts and Nevis.

122. Promoting Compliance with the Trade and Licensing Provisions of the Montreal Protocol in Countries with Economies in Transition initiative involves development and translation of a training module and other information, and four regional training workshops on the establishment of import and export licensing systems for monitoring and control of ozone-depleting substances.

123. Addressing Transboundary Environmental Issues in the Caspian Environment Programme (CEP) aims to develop the Caspian Framework Convention for the Protection of the Marine Environment of the Caspian Sea as an overarching legal instrument for environmental cooperation in the Caspian region; and to strengthen legal, regulatory and economic frameworks in five Caspian littoral States.

124. UNEP provides support to the Czech Republic, Hungary, Poland, Romania, Serbia and Montenegro, Slovakia and Ukraine and to strengthen cooperation for the protection and sustainable management of the Carpathians and provide a legal framework and institutional capabilities through the development and implementation of a Convention.

125. African experts meeting on Rio Principle 10 brought together 46 Government representatives from 20 African countries on the application of Rio Principle 10 in strengthening the legal and institutional framework of environmental law.

126. An ESCAP/UNEP training workshop on multilateral environmental agreements on biodiversity and natural resources aimed at training Government officers and other experts to enhance the implementation of multilateral environmental agreements in their respective countries. A total of 23 countries in Asia and the Pacific participated: Afghanistan, Bangladesh, Bhutan, Cambodia, China, Fiji, Indonesia, Iran (Islamic Republic of), Kazakhstan, Lao People's Democratic Republic, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Samoa, Sri Lanka, Thailand, Turkmenistan, Uzbekistan and Viet Nam.

3. Providing technical assistance and legal advisory services

127. Legal advisory services to ASEAN for the negotiation and adoption of the ASEAN Transboundary Haze Pollution Agreement involved 10 countries, namely, Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Myanmar, Malaysia, Philippines, Singapore, Thailand and Viet Nam.

128. Legal advisory services to the parties to the Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Abidjan Convention) and the Convention for the Protection, Management, and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention) to enhance the ability of the Parties to the Conventions to effectively negotiate and ensure that national policies are in accordance with international environmental law as well as recent legal developments.

129. UNEP provided legal technical assistance to the Governments of the following 19 developing countries and countries with economies in transition in developing and implementing their national environmental legislation: in Africa, Burundi, Central African Republic, Djibouti, Congo, Gabon, Rwanda, Seychelles, and Zambia; in Asia and the Pacific, Brunei Darussalam, China, Myanmar, Indonesia, Lao People's Democratic Republic, Cambodia, Mongolia and Papua New Guinea; in the Caribbean, Antigua and Barbuda, Suriname and Belize.

130. A project on servicing and implementing multilateral environmental agreements and strengthening the capacities of national experts, authorities and interest groups with respect to the ratification, implementation and enforcement of selected multilateral environmental agreements involved the following 23 countries in Europe (Albania, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kyrgyzstan, Kazakhstan, Latvia, Lithuania, Moldova, Poland, Russian Federation, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan).

131. A global training programme on environmental policy analysis and law is a biennial capacity-building programme with participation of about 50 countries.

4. Environmental law information

132. Activities and outputs in this area include the following:

- (a) Register of International Treaties and other Agreements in the field of Environment;
- (b) Environmental law training manual and other training materials;
- (c) Dissemination of capacity-building information on environmental law;

(d) Environmental law information materials in print and distributed through the ECOLEX website and CD-ROM;

(e) Various publications including compendia, manuals, guidelines, bulletins, country case studies and reports, newsletters, etc.

H. Production and consumption

133. UNEP has over the last 15 years developed a comprehensive series of capacity-building initiatives in the fields of cleaner production and sustainable consumption. These initiatives have as their principal aim the improved use of sustainable technologies and management tools (including regulation and policy) at the national level and within industry. The rationale is to build and strengthen the capacity of national level institutions and individuals to be able to take UNEP information and methodologies to a much wider audience in their country or constituency – notably, in the case of train-the-trainer activities. These programmes have at various times targeted the following sectors and audiences:

(a) Cleaner production: UNEP, in collaboration with UNIDO, has created a network of national cleaner production centres to carry out the above functions;

(b) Industry issues: Waste management tourism, sustainable mining, accident prevention, industrial estate management and industrial ecology;

(c) Technology assessment, information exchange and training;

(d) Engineering education, business school curricula and youth outreach activities;

(e) Global Compact.

134. Specific capacity-building and technology support activities include the following:

Capacity-building activities

(a) UNEP-InWENT programme to strengthen the ability of national cleaner production centres to provide prevention-oriented services to national focal points, Basel Convention regional centres and convention secretariats. The main focus to date has been on UNFCCC and the Basel and Stockholm Conventions. The programme consists of a series of international workshops, followed by national workshops on subjects identified by the national cleaner production centres themselves;

(b) Cleaner production and sustainable consumption programme in West Asia, involving 11 countries: Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates and Yemen;

(c) Institutionalizing the African Roundtable on Sustainable Consumption and Production;

(d) Expert meeting on pollution prevention in the textile industry;

(e) Project to raise awareness of sustainable consumption opportunities and to support the development of multi-stakeholder partnerships for the promotion of sustainable consumption in the pan-European region, with particular emphasis on Bulgaria, Czech Republic, Estonia, Hungary and Serbia;

(f) Programme to improve participation in certified environmental management systems and build capacity for their implementation throughout the West Asia Region;

Training and information toolkits

(a) Development and publication of United Nations guidelines on consumer protection to provide recommendations to public authorities on the best ways to help change citizen and consumer behaviour through adapted communication strategies;

(b) Capacity-building for local government promotion of sustainable production and consumption patterns in Guiyang, China;

(c) Cleaner production financing to facilitate the financing of cleaner production investments in developing countries. The project was carried out in Tanzania and Zimbabwe;

- (d) Urban Environment Management: Environmental Management System Training Resource Kit;
- (e) UNEP/Inter-Agency Procurement Services Office sustainable procurement modular training package to raise awareness of the need to include sustainable development considerations in procurement. The package is modular and includes a training guide, training slides, case studies and indications of specific resources;
- (f) UNEP/UNESCO "Youthxchange" training kit for sustainable lifestyles;
- (g) UNEP communication guide for public authorities;
- (h) Life Cycle Initiative - Information system for life cycle assessment (LCA) is a tool for the systematic evaluation of the environmental aspects of a product or service system through all stages of its life cycle. LCA provides an adequate instrument for environmental decision support;
- (i) Training module for Sustainable Building and Construction: Looking at the Life Cycle of Buildings;
- (j) Sowing the seeds of change - an environmental teaching pack for the hospitality industry;
- (k) Project ACORN EPICENTRE to build capacity of countries in environmental management in small and medium-sized enterprises in the Mediterranean;
- (l) Technical and financial assistance to national experts and authorities for the preparation of national diagnostic analyses and baseline budgets of releases and emissions as a basis for the achievement of pollution reduction;
- (m) International management code for safety in cyanide use at mine sites;
- (n) Capacity-building and training on environmentally sound management of mining operations;
- (o) Capacity-building and training on environmentally sound management of oil and gas exploration operations.

Environmentally sound technologies

- (a) A series of workshops to assess how the EnTA (environmental technology assessment) handbook and manual (published in the early 1990s) can be promoted in all countries;
- (b) Environmentally Sound Technologies Information System (ESTIS), which seeks to equip decision makers, planners, and engineers in the Asia and the Pacific region with information and tools to make comparative analyses and choices from among available environmentally sound technologies;
- (c) Environmentally Sound Technologies Information System (ESTIS) and e-learning. ESTIS is an innovative information and knowledge management system that improves the transfer of environmentally sound technologies and allows a user to build, share, search and network on EST's via the Internet. ESTIS is freely available online, is locally driven, allows users to build content in their language and facilitates community building and networking;
- (d) E-learning and knowledge management (KMS), the goal of which is to develop an internationally recognized e-learning platform comprising compatible modules of UNEP EST programmes as well as those of its partners with respect to training materials and other information can be converted and added to create a portfolio of e-training packages to augment skills of decision makers;
- (e) maESTro, an electronic information tool for equipping decision makers, planners, and engineers with information and tools to make comparative analyses and choices from among available environmentally sound technologies;

(f) UNEP Technology Transfer Networks, the goal of which is to connect key public and private sector stakeholder groups who influence technology transfer within, between and to recipient countries with the view to fostering increased market uptake of sustainable alternatives that help to protect the global environment. The project aims to facilitate identification of environmental synergy and implementation of integrated "win/win" solutions by encouraging thorough assessment of cleaner technology options;

(g) Joint Geophysical Imaging (JGI) Methodology for Geothermal Reservoir Assessment, aimed at locating and reducing the cost of renewable, nearly CO₂-free geothermal power in Kenya and East Africa through the transfer of an improved geophysical data interpretation methodology;

(h) Use and application of phytotechnologies as a means to understanding hydrological and biogeochemical processes within water basins, including control and regulation of nutrients.

I. Water

135. In order to enhance knowledge, understanding and application of the integrated systems approach to water management UNEP capacity-building and technology support activities on water aim to reconcile the conflicting interests of natural resources exploitation, social development, and environmental protection. The following approach has been undertaken:

(a) Undertaking regular worldwide assessments of the state of the world water systems and providing timely information at various levels – policy, practice, public, etc. Related activities are presented in above in section on assessment;

(b) Assisting Governments to develop, approve and implement environmentally sound practices for management of water systems, and to use successful cases for demonstrations elsewhere, e.g., vital water graphics (UNEP 2002);

(c) Strengthening the capacity of local experts and national and regional institutions and preparing manuals of principles and guidelines for integrated water system management.

1. Global and multiregional activities

136. Global and multiregional activities relating to water include the following:

(a) Strengthening Global Capacity to Sustain Transboundary Waters: the International Waters Learning Exchange and Resource Network (IW:LEARN), a project that seeks to strengthen transboundary waters management by facilitating learning and information sharing among GEF International Waters (IW) stakeholders. IW:LEARN will improve GEF IW projects' information base, replication efficiency, transparency, stakeholder ownership and sustainability of benefits through five project components: (1) Facilitating access to information on transboundary water resources among GEF IW projects; (2) Structured learning among IW projects and cooperating partners; (3) Biennial international waters conferences; (4) Testing innovative approaches to strengthening implementation of the IW portfolio; (5) Fostering partnerships to sustain benefits of IW:LEARN and associated technical support;

(b) Integrated coastal area and river basin management (ICARM) in Latin America, West Asia, Southern Africa, Southeast Asia, and the Mediterranean region;

(c) Dams and development project, established in 2001 to promote dialogue on improving decision-making on the planning and management of dams and their alternatives based, on the World Commission on Dams (WCD) core values and strategic priorities. Several national and regional/sub-regional/multi-stakeholder initiatives have been undertaken including 13 country processes in Argentina, Indonesia, Kenya, Malawi, Myanmar, Namibia, Nepal, Philippines, Sri Lanka, South Africa, Thailand, Viet Nam and Zambia;

(d) Development of a decision makers guide on water and wastewater re-use, which, upon completion, the Global Environment Centre (GEC) Foundation and UNEP plan to utilize in training sessions for decision makers;

(e) Development of integrated training packages aimed at promoting use of environmentally sound technologies in urban water management;

(f) UNEP/GEF global project on the Role of the Coastal Ocean in the Disturbed and Undisturbed Nutrient and Carbon Cycles, which seeks to enhance understanding of the role of coastal seas in the carbon cycle and the impact of eutrophication in carbon sequestration;

(g) Urban Water Management Training Package series, a set of integrated training packages aimed at promoting use of environmentally sound technologies in urban water management;

(h) Training on municipal wastewater management for Bonaire, Brazil, Kenya, Mozambique, South Africa, Sri Lanka, Philippines, Tanzania and Turkey;

(i) Regional Integrated Waste Management Strategy (RIWMS), a framework for technology cooperation among countries in Asia and the Pacific to sensitize Governments to the benefits of adopting sustainable, integrated waste management policies.

2. Africa

137. African water-related activities include the following:

(a) Addressing Transboundary Concerns in the Volta River Basin and its Downstream Coastal Area (Benin, Burkina Faso, Côte D'Ivoire, Ghana, Mali, Togo);

(b) Sustainable Land Use Planning for Integrated Land and Water Management for Disaster Preparedness and Vulnerability Reduction in the Lower Limpopo Basin (Mozambique, South Africa and Zimbabwe), started in 2000 in response to a request by the Government of Mozambique, emphasizes on coordination, complementarity and synergies in subregional integrated management of land and water resources;

(c) Nairobi River Project – Kenya, started in 1999, addresses pollution, waste management, urban greening, etc.;

(d) Empowering Women in Rainwater Harvesting in Kenya;

(e) Addressing land-based activities in the Western Indian Ocean (Comoros, Kenya, Mauritius, Madagascar, Mozambique, French overseas territories, Seychelles, Somalia, South Africa and Tanzania);

(f) UNEP/GEF project on managing hydrogeological risk in the Iullemeden Aquifer System, involve three countries, namely, Mali, Niger and Nigeria;

(g) UNEP/GEF project, Protection of the North West Sahara Aquifer System (NWSAS) and related humid zones and ecosystems, involves Algeria, Libyan Arab Jamahiriya and Tunisia.

3. Asia and the Pacific

138. Water-related activities in this region include the following:

(a) Empowering Women in Rainwater Harvesting (Tonga);

(b) Women in Water and Energy Management in Rural South Asia: Himalayas;

(c) UNEP/GEF project, Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand.

4. Latin America

139. Water-related activities in this region include the following:

(a) UNEP/GEF project on Integrating Watershed and Coastal Area Management in Small Island Developing States of the Caribbean, relating to the Bahamas, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Trinidad and Tobago and Antigua and Barbuda;

(b) Integrated water resources management (Latin America) in the binational basin of the Bermejo River, a collaborative project between GEF and the Organization of American States to provide institutional, legal and informational bases for restoring the environmental functioning of the system and protecting endemic species in the component ecosystems;

(c) UNEP/GEF project, Integrated Management of Land Based Activities in the Sao Francisco Basin (Brazil);

(d) UNEP/GEF project, Implementation of Integrated Watershed Management Practices for the Pantanal and Upper Paraguay River Basin (Brazil);

(e) UNEP/GEF project, Formulation of a Strategic Action Programme for the Integrated Management of the San Juan River Basin and its Coastal Zone (Costa Rica, Nicaragua);

(f) Training of Trainers course in marine protected area management in Latin America and the Caribbean, involving Anguilla, Antigua and Barbuda, Barbados, Belize, Dominica, Jamaica, Saint Lucia, Colombia, Costa Rica, Cuba, Guatemala, Honduras, Mexico, Nicaragua, Dominican Republic, Venezuela, Puerto Rico and Panama;

(g) Regional Training Workshop on Nutrient Removal Technologies and Wastewater Management, Port of Spain, Trinidad, December 9–13 2002;

(h) Development of National Programmes of Action for the Protection of the Marine Environment from Land-based Activities (NPA), in Jamaica, Kiribati, Saint Lucia, Solomon Islands, Tonga, Trinidad and Tobago, Vanuatu and the Solomon Islands;

(i) White Water to Blue Water (WW2BW) capacity-building initiative (Barbados, Haiti, Trinidad and Tobago, United States of America);

(j) Regional Workshop on Sewage Sludge Reuse and Disposal (Anguilla, Aruba, Bahamas, Barbados, Belize, Costa Rica, Cuba, Dominica, Grenada, Guyana, Haiti, Honduras, Jamaica, Netherlands Antilles, Nicaragua, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago);

(k) UNEP/GEF project, Demonstrations of Innovative Approaches to the Rehabilitation of Heavily Contaminated Bays in the Wider Caribbean, covering Cuba and Jamaica;

(l) UNEP/GEF project, Development and Implementation of Mechanisms to Disseminate Lessons Learned and Best Practices in Integrated Transboundary Water Resources Management in Latin America and the Caribbean.

5. Mediterranean

140. Water-related activities in this region include the following:

(a) MEDSTAT in the framework of the Euro Mediterranean Partnership;

(b) Regional and national training courses on wastewater management;

(c) Training courses on a reporting system for national officials in Ankara and two additional meetings of the Working Group on the Reporting System (Algeria, Croatia, Monaco, Spain, Tunisia and Turkey).

6. Middle East

141. Water-related activities in this region include the following:

(a) Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) - West Asia;

(b) Global International Waters Assessment (GIWA) - West Asia;

(c) Study and Regional Database on Sustainable Water Resources and Vegetation Cover Management in West Asia (SRAP/WA/UNCCD);

(d) UNEP/GEF project, Implementation of the Strategic Action Programme (SAP) for the Red Sea and Gulf of Aden.

J. Cross-cutting issues, outreach and environmental education

142. The regional advisory services (RAS) programme has been specifically aimed at developing countries since its inception in 1975. The objectives of the programme revolve around two types of assistance -- providing assistance toward short-term training for individuals on request ("fellowships"), and providing specific technical services to Governments on request, such as visits by regional office staff to countries to assess their needs and give advice. The programme was administered through the six UNEP regional offices, which have been in existence since 1973.

143. The UNEP capacity-building programme for Afghanistan has been developed based on the most urgent needs as identified by the Ministry of Irrigation, Water Resources and Environment (MIWRE). The overall objective is to provide an integrated package of capacity-building activities that will contribute to the development of a stand-alone and self-sufficient Department of Environment, with the required technical capacity to implement the environmental mandate of the Ministry of Irrigation, Water Resources and Environment. (MIWRE).
144. Capacity development of Southern civil society organizations (CSOs) on technical and policy matters in the environmental field aims to raise public awareness on technical or emerging issues at the regional level, ensuring the development of regional CSO networks on these matters, and to promote information exchange between CSOs. The project will promote information exchange among Southern CSOs to enable the transfer of practices as well as capacity-building among southern CSOs on policy and technical issues.
145. The Environmental Action Learning Programme provides a regional framework for support of good practices in environmental learning processes that address poverty and environmental degradation in Africa. The frame work caters for both formal and non-formal levels, extending to community learning, colleges, universities, private sector and governmental sectors. Over 17 countries in Africa participate. The programme is linked to similar ones in China and Europe.
146. The goal of the Environmental Education, Awareness and Training in Asia and the Pacific (EEATAP) programme is to implement six best practices related to environmental education in the region involving youth, civil society and the private sector and to disseminate them across the region and thereby enhance environmental awareness in the region.
147. Another programme in this region is the Network for Environmental Training at Tertiary Level in Asia and the Pacific (NETTLAP).
148. The Leadership Training Programme on Sustainable Development in the Asia-Pacific Region aims to develop in future leaders positive sustainable development lifestyles with an integrated outlook. As one of the outcomes, the experiences gained from the programme will be used to develop a regional masters degree programme on sustainable development in 2005.
149. The Environmental Training Network for Latin America and the Caribbean (ETN) supports postgraduate courses on environment and sustainable development; trains teachers in the formal educational system; undertakes community training; publishes basic texts and manuals for environmental education and training; and carries out training on trade, environment and sustainable development.
150. Another area of activity involves training African journalists on environmental reporting to improve environmental reporting in Africa in both electronic and print media and to promote and encourage networking among journalists.
151. Another activity was a workshop for Mediterranean communication professionals on environment and sustainable development and the role of the Mediterranean Action Plan (MAP).
152. The UNEP/ UNESCO International Environmental Education Programme (IEEP) (1975 – 1995) saw the mainstreaming of environmental education into formal (primary thru university) and non-formal education (professional and community). Activities involved over 140 countries globally. Several guidelines and manuals were developed.
153. Environmental management seminars were designed and organized for experts and faculty in the different fields of engineering. The course equipped practitioners with relevant skills and knowledge regarding integration of environmental considerations in industries and curricula.
154. The Children and Youth/Sport and the Environment' Tunza programme is meant to increase the participation of young people in environmental issues and to promote the integration of environmental consideration in sports.
155. The post-graduate studies programme in environmental management for developing countries and counties with economies in transition is currently in its 27th year, with over 1,500 middle-level decision makers trained from over 115 countries.

IV. Opportunities for the future

156. The analysis of the capacity-building and technology support activities presented in the inventory indicates key areas in which UNEP has long experience with capacity-building and technology transfer. Areas in which UNEP has a comparative advantage in supporting Governments and institutions in strengthening their environmental management capacity are environmental assessment, environmental law, biodiversity, water, capacity-building in post conflict countries and for disaster management, support to implementation of multilateral environmental agreements and technology support, especially on environmentally sound technologies and the use of geographical information systems for assessment and analysis. Other areas in which UNEP has shown strength and which afford further scope for increased capacity-building and technology support activities include cross-cutting issues such as environmental information, environmental education and training.

157. In designing future capacity-building and technology support activities, UNEP will be guided by the needs and priorities of countries; responding to requests from Governments, as well as internationally agreed goals and objectives, and will aim at supporting regional and national environmental agendas and initiatives. Specific attention will also be given to strengthening regional and national institutions in aspects of integrating environmental considerations into their plans to pursue sustainable development; and on integrated implementation of multilateral environmental agreements. The following needs will further refine the design of integrated activities at the country level:

- (a) To facilitate strengthening of national institutions in policy implementation, data collection and analysis and monitoring of environmental trends;
- (b) To develop a coherent, systematic and shared process of needs assessment that has national ownership;
- (c) To internalize environmental and sustainable development objectives and capacity-building needs in national policy frameworks, in particular poverty reduction strategy papers and common country assessments and United Nations development assistance frameworks ;
- (d) To enhance the flow of relevant and targeted information and exchange of best practices, in particular by utilizing the growing information and communication technology capacities in developing countries;
- (e) To develop a coherent approach to enhancing the capacity of existing centres of excellence and to establish new centres of excellence on an assessment of needs and gaps;
- (f) For developing countries to establish an enabling environment for capacity-building and technological adaptation and innovation;
- (g) For donor countries to enhance targeted support to the efforts and identified priorities of developing countries;
- (h) To ensure enhanced education and training to support the sustainability of these efforts.

158. The following paragraphs present more specific areas where UNEP should focus its future efforts.

A. Assessment and early warning

159. Following the synthesis of capacity-building needs emanating from the UNEP Science Initiative, the following areas were identified:

- (a) Environmental research;
- (b) Data collection and analysis,
- (c) Monitoring and Integrated Environmental Assessment (IEA);
- (d) Use of satellite information.

160. In addressing these areas of need, the Scientific Initiative further suggested the following type of specific capacity-building interventions to which UNEP should pay attention:

- (a) Research and training involving scientific exchanges, featuring greater involvement of developing country scientists and research institutions in integrated environmental assessment and strengthening the scientific credibility of the GEO process and other assessment and monitoring structures;
- (b) Transfer of appropriate and adaptable technologies and methodologies;
- (c) Regional, subregional and national level collaboration and networking;
- (d) Strengthening UNEP's regional and subregional presence;
- (e) Strengthened cooperation with and support to national, subregional and regional institutions, including within the context of regional and subregional initiatives such as NEPAD;
- (f) Establishing environmental and inter-disciplinary information networks;
- (g) Extended collaboration in assessment, including collaborating centres at all levels;
- (h) Support for assessment of environmental issues of regional and subregional importance, including through collaborating centres;
- (i) Promotion of a coherent partnership approach to capacity-building and mobilization of resources for the development of methodologies, training and institutional training arrangements.

B. Biodiversity

161. The focus will move from needs assessments and enabling activities to focus on implementation of biodiversity initiatives at the country level. Capacity-building in response to the Johannesburg Plan of Implementation will be put into high gear in areas such as addressing the linkage between poverty and environment, the linkage between cultural diversity and biodiversity and building national capacity on biosafety issues through the biosafety frameworks that UNEP has successfully established. Further attention will be paid to the various conference of the parties decisions directed at UNEP.

C. Environmental law

162. Pursuant to General Assembly resolution 3436 (XXX) of 9 Dec 1975, UNEP has continued to implement the Montevideo programme, which adopts a forward looking perspective in addressing new and emerging environmental challenges by strengthening the policy and legislative capacity of countries to tackle them. Furthermore, the post Johannesburg Summit era marks a renewed focus on the implementation of multilateral environmental agreements at the country level through integrated policy design and implementation.

163. The principal strategic elements of the future programme are:

- (a) An integrated and coordinated approach;
- (b) Needs-responsive and result-oriented programme design;
- (c) Ensuring national ownership of the process and product,;
- (d) Partnership with the United Nations and other agencies, and regional delivery.

164. The following needs-driven capacity-building requirements have been identified:

- (a) Capacity-building for development and implementation of international and national legislative regimes ;
- (b) Legal technical assistance and advisory services in key areas of integrated policy design and implementation;
- (c) Providing support at the country level for harmonized and synergetic implementation of multilateral environmental agreements, including supporting national Governments in compliance with and enforcement of environmental law;

(d) Strengthening and promoting the teaching of environmental law, including mainstreaming the environment into university education;

(e) Development and dissemination of needs-based information manuals, guidelines, compendia, etc.;

(f) Promoting Rio Principle 10, enhancing access to environmental justice and strengthening the role of the judiciary.

D. Support to multilateral environmental agreements

165. Activities aimed at supporting multilateral environmental agreements will need to refocus from awareness creation and development of multilateral environmental agreements to implementation activities. Attention will be given to creating synergies among related agreements and harmonizing national reporting mechanisms to ease the growing burden on parties are two growing UNEP priorities. In this regard, UNEP capacity-building work will increasingly focus on the ability of parties, especially the least developed countries, to follow through on their commitments and obligations under multilateral environmental agreements. It will also address the issue of the burdens these agreements impose on compliance and enforcement. As regards trade and environment, future work may also include the chemicals-related conventions, the use and application of economic instruments in environmental management, and stronger linkage between environment and trade issues.

E. Water

166. As the designated United Nations agency on water and in line with its water policy and strategy, UNEP will continue to provide technical assistance and advisory services to developing countries and countries with economies in transition in key areas of institution building and capacity development in addressing management of water resources to improve access to drinking water and safe sanitation. The future focus will be on integrated water resource management (IWRM), as articulated in the Jeju Initiative. To enhance ownership, specific attention needs to be paid to partnerships and to promoting stakeholder participation in national policy design and implementation

F. Capacity-building in post-conflict countries and for disaster management

167. The increasing impact of conflict on the environment, plus the attendant additional impact caused by refugees, poses an immense challenge to the world today. UNEP's future focus on post-conflict capacity-building will benefit from lessons and experiences gained from post-conflict countries such as Afghanistan, Iraq and Liberia, where UNEP has been at the forefront of environmental reconstruction. Through AMCEN, new activities will be expanded to cover Africa in support of the environment programmes of the African Union and NEPAD. Other regional programmes will be developed incorporating technology support in post-conflict countries and areas.

168. Similarly, in accord with the wishes of the Governing Council, UNEP will further increase its capacity-building and technology support activities aimed at strengthening developing countries and countries with economies in transition to prepare for, respond to and mitigate against environmental consequences of disasters and emergencies. Regional programmes will be developed and existing initiatives supported or revamped in collaboration with UNISDR, UNOCHA and UNDP, including regional information centres and disaster management and monitoring centres.

G. Technology support

169. The following are the broad areas on which future activities could focus:

(a) Support for national and local development policies: UNEP can use its global knowledge base and facilitative network to ensure that relevant goals of multilateral environmental agreements and trade and finance agreements are incorporated into national-level initiatives to build capacity and disseminate appropriate technologies;

(b) Advance the engagement of the private sector in public-private partnerships: UNEP can advance the engagement of the private sector by facilitating a more targeted involvement of companies and industry associations in cooperation initiatives with public authorities and stakeholder organisations;

(c) Strengthen regional delivery of programmes: As part of its effort to advance capacity-building, joint research, development and sharing of technology, UNEP can develop new and strengthen existing delivery mechanisms at the regional level.

170. Specific technology support activities would focus on integrated capacity-building training for customs officers in multilateral environmental agreements; compilation and updating of information on existing environmentally sound technologies; developing additional sectoral initiatives with industries; strengthening economics and environment and trade and environment capacity-building towards local authorities; revamping the programme on awareness, preparedness for and response to environmental disasters; supporting the tourism industry; and further strengthening and upscaling the national cleaner production centres for energy and sustainable development.
