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**Policy issues: State of the environment**

**PROGRESS REPORT ON THE IMPLEMENTATION OF GOVERNING COUNCIL DECISION  
21/11 ON WATER POLICY AND STRATEGY OF  
THE UNITED NATIONS ENVIRONMENT PROGRAMME**

**Note by the Executive Director**

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I. KEY ISSUES AND POLICY OPTIONS IN RELATION TO WATER: EVOLUTION OF INTERGOVERNMENTAL PROCESSES LEADING TO THE WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT

1. This section provides information on the evolution of intergovernmental process leading the World Summit on Sustainable Development in relation to water. Consideration of the recommendations and other outcomes of key water related conferences and UNEP Governing Council sessions provides clear indication of key water issues and policy options to address them.

(A) United Nations Conference on Environment and Development: Role of UNEP in the Ten-year Implementation of Agenda 21

2. Chapter 18 of Agenda 21 remains the fundamental basis for action in the freshwater arena. It includes extensive reference to the need for integrated management, socio-economic factors and legal mechanisms. With respect to transboundary water resources it refers to the need for riparian countries to formulate water resources strategies and where appropriate harmonise such strategies. It also referred to UNEP's programme on the environmentally sound management of inland waters - the former framework for UNEP's delivery of Integrated Water Resources Management (IWRM) activities.

3. Chapter 18 also remains the fundamental basis for action with regard to oceans and coastal areas. It, for example, called on UNEP to establish a process to address land-based pollution and to strengthen the regional seas programme.

4. Chapter 38 includes direction to UNEP to take into account the development perspective, and as priority areas, environmental economics, international law and sub-regional and regional co-operation.

(B) Commission on Sustainable Development (CSD, 6<sup>th</sup> Session)

5. CSD6 focused on freshwater issues. The CSD called for strengthening UNEP's role in promoting the environmental aspects of sustainable development, including with reference to freshwater. It, inter alia, identified a freshwater area requiring further attention as that of explicit linkages with socio-economic development, for equitable utilisation and efficient freshwater allocation and use. UNEP's role with respect to assisting countries with integrated river basin management was also referred to.

(C) Commission on Sustainable Development (CSD 7<sup>th</sup> Session)

6. CSD7 focused, inter alia, on oceans and SIDS. It included a call to strengthen UNEP's regional seas programme and highlighted issues with regard to the implementation of the Barbados Programme of Action for Small Island Developing States.

(D) UNEP Governing Council Sessions

7. A significant number of Governing Council decisions call for the enhancement of the role of UNEP in the environmental aspects of sustainable development and management of the freshwater, coastal and marine environment.

8. The Governing Council in its decision SS.V/4 acknowledged that Chapter 18 of Agenda 21 which addresses the state of the World Freshwater Resources calls for action at different levels for the sustainable development of freshwater resources.

9. The Governing Council decision 19/1 of 7 February 1998, in adopting the Nairobi Declaration on the role and mandate of the UNEP, also took into account decision 6/1 of 1 May 1998 of the Commission on Sustainable Development which called upon UNEP, in collaboration with other relevant UN bodies to play a vital role in the environmental aspects of the sustainable development of freshwater.

10. A major follow-up activity to the nineteenth session of the UNEP Governing Council was the development of a comprehensive UNEP Freshwater Strategy Document (revised and contained in UNEP/GC.22/WPS/1/Add.1 )which was directed at identifying UNEP's responsibilities vis-à-vis freshwater resources within the context of sustainable development, and was meant to provide the basis for UNEP's work in this area over the medium term. The document entitled "Freshwater Strategy of UNEP following the special session of the United Nations for the purpose of an overall review and appraisal of the implementation of Agenda 21" focused on the elements of a longer-term action programme for addressing the management and sustainable use of transboundary freshwater resources. The document noted that UNEP has a major role to play in the areas of, first, freshwater assessments, including freshwater, coastal and marine waters; second, integrated water resources management, including projection of human-valued ecosystems; third, protection of water quality; and, fourth, water-related dispute avoidance and resolution.

11. In adopting the Water Policy and Strategy, the UNEP Governing Council identified a range of possible issues for UNEP to consider within its environmental mandate. These include: (a) Access to safe drinking water; (b) Sanitation; (c) Food production; (d) Agricultural irrigation; (e) Industrial development; (f) Community participation; (g) Preservation of ecosystems; (h) Integrated water management; (i) Co-operation in transboundary environmental water issues, including assisting developing countries, on request, in developing their abilities to manage their water resources; (j) Developing tools for monitoring and analysing water quality and quantity; (k) Technology transfer; and (l) Institutional strengthening.

12. The Council also identified other areas requiring attention such as: Application of preventive, precautionary and anticipatory approaches; Prior assessment of activities that may have significant adverse impacts on the freshwater environment, affecting both surface and groundwater; Integration of the protection of freshwater environments and groundwater into relevant general environmental, social and economic development policies; Contributing, on request, to the efforts of Governments in the development of economic incentives; Contributing, on request, to the efforts of Governments in the development of legal instruments, including those for groundwater; Application of clean technologies.

(E) Outcome of the Intergovernmental Review of the Global Programme of Action on LBA

13. The outcome of the review provides the basis for the following policy recommendations: (a) Minimizing the wastewater treatment degradation of water supplies by promoting and cleaner production processes; (b) Collaborating with other UN agencies and partners to promote the development and dissemination of environmentally sound technologies for reducing water demand and increasing supply in rural and urban areas; (c) Promoting innovative project appraisal and financing techniques for environmentally sustainable water supply; (d) Working with WHO, UN-Habitat, and other partners to promote sustainable wastewater treatment in coastal. (e) Supporting the further implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) as called for in the WSSD Plan of Implementation, in part by supporting the development of national, sub-regional, and regional Programmes of Action for the Protection of the Marine Environment from Land-based Activities; (f) Integrating GPA activities with the further development and implementation of UNEP's Regional Seas programmes; (g) Encouraging implementation of UNEP's Integrated Coastal area and River Basin Management Guidelines through demonstration projects in major basins

(F) International Water Conferences: Bonn International Conference on Freshwater December 2001

14. This Conference was a WSSD preparatory conference for freshwater and had the theme "Water – a key to sustainable development." The conference decisions provide clear guidance on key issues and policy option priorities. The conference set out 5 'keys' for managing freshwater to achieve sustainable development:

- The first key is to meet the water security needs of the poor
- Decentralization is the second key. The local level is where national policy meets community needs.

- The key to better water outreach is new partnerships.
- The key to long-term harmony with nature and neighbours is cooperative arrangements at the water basin level, including across waters that touch many shores.
- The essential key is stronger, better performing governance arrangements.

15. It recommended more specific action under three headings: (i) Governance; (ii) Mobilising Financial Resources (iii) Capacity Building and sharing knowledge. The recommendations for action were:

- Secure equitable access for water for all people
  - ensure that water infrastructure and services deliver to poor people
  - promote gender equity;
  - appropriately allocate water among competing demands;
  - share benefits
  - improve water management;
  - protect water quality and ecosystems;
  - manage risk to cope with variability and climate change
  - encourage more efficient service provision
  - manage water at the lowest appropriate level
  - combat corruption effectively;
  - ensure significant increase in all types of funding
  - strengthen public funding capabilities;
  - improve water efficiency to sustain operations and investment
  - make water attractive for private investment
  - increase development assistance for private investment
  - increase development assistance to water
  - focus education and training on water wisdom
- focus research and information management on problem solving
  - make water institutions more effective.

(G) International Conferences and Agreements on Water and Sanitation

16. There has been increasing focus on the provision of water supply and sanitation as well as the need for improved governance and integrated water resources management in international water meetings. The Millennium Development Goals (MDGs) and World Summit on Sustainable Development (WSSD) outcomes have reinforced this emphasis, as has the 'Water' WEHAB paper.

(H) The Millennium Declaration, Millennium Development Goals (MDGs) and targets relating to water and sanitation

17. Water and sanitation are dealt with in several ways in the United Nations Millennium Declaration and in the final list of Millennium Development Goals and Targets (see background documents).

18. In Chapter 4 (“Sustaining our Future”) of the Secretary General’s Report to the Millennium Summit, the Secretary General urged the Summit:

*“To adopt the target of reducing by half, between now and 2015, the proportion of people who lack sustainable access to adequate sources of affordable and safe water”*

19. In the Millennium Declaration, the heads of State and Government gathered at United Nations Headquarters in New York from 6 to 8 September 2000 resolved, under the heading “protecting our common environment”:

*“To stop the unsustainable exploitation of water resources by developing water management strategies at the regional, national and local levels, which promote both equitable access and adequate supplies”*

20. This resolution is explicitly highlighted as a goal on page 34 of the Report of the Secretary General entitled “Road map towards the implementation of the United Nations Millennium Declaration” to the Fifty-sixth session in September 2001 on the follow up to the outcome of the Millennium Summit.

21. However, in the statement of the United Nations Millennium Development Goals, Targets and Indicators (see background documentation), which lists eight goals and 18 targets, the overall goal relevant to this area (labeled goal #7) is stated more generally as “ensuring environmental sustainability”, with three specific targets:

- *Integrate the principles of sustainable development into country policies and programmers; reverse loss of environmental resources*
- *Reduce by half the proportion of people without sustainable access to safe drinking water*
- *Achieve significant improvement in the lives of at least 100 million slum dwellers, by 2020*

(I) United Nation’s Secretary-General’s Initiative on Water, Energy, Health, Agriculture and Biodiversity (WEHAB)

22. The UN Secretary-General, as a contribution to the preparations for World Summit on Sustainable Development (in response to UNGA Resolutions 55/199 and 56/266), proposed the WEHAB (water, energy, health, agriculture and biodiversity) initiative, which identifies priority challenges and actions to address them. The initiative emphasises the interrelationships between environmental protection and poverty alleviation. It highlights the critical role of water in all the WEHAB priority areas. (Water and energy - hydropower potential and renewable energy. Water and biodiversity - focusing on wetlands loss and assuring water for ecosystems. Water and health in terms of water borne diseases and the need for alternative sanitation systems. Water and agriculture highlighting low water productivity and agricultural practices that degrade water sources. Water supply and quality management where the challenge areas are more pressure on supplies, fragmented management and inefficient allocation systems). [Further information on WEHAB is found in UNEP/GC.22/INF/28.](#)

23. The WEHAB Working Group on Water (of which UNEP was a core member) highlighted a number of important actions needed in areas such as capacity building and technological needs, access and

availability, allocation and social issues. In considering the WEHAB initiative, the WSSD highlighted that water is not only the most basic of needs but is also at the centre of sustainable development and is essential for poverty eradication. Water is intimately linked to health, agriculture, energy and biodiversity. Without progress on water, reaching other millennium development goals will be difficult if not impossible. The Secretary-General has subsequently requested UN agencies to reflect the WEHAB in their work programmes.

24. The WEHAB Water framework for action contains the following priority Action Areas, and the Water document lists examples of specific actions to achieve them:

- Halve by 2015 the proportion of people without sustainable access to safe drinking water
- Halve the proportion of people without sustainable access to improved sanitation
- Develop integrated water resources management (IWRM) frameworks, including integrated coastal area and river basin management (ICARM), and prepare and implement water management action plans at the country level.
- Accelerate water productivity gains in irrigated agricultural systems to contribute to food security, relieve environmental pressures and provide scope for water transfers to other important productive uses.
- Safeguard human health, including reduction in the mortality rate (associated with lack of access to safe drinking water, inadequate sanitation and poor hygiene), by improving the quality of drinking water.
- Strengthen disaster preparedness planning processes at the country level to protect the poor from the impact of water-related disasters (floods and droughts), particularly in low-lying countries and small island developing states.
- Mobilise financial resources to meet the investment needs in the water sector.
- Strengthen institutional and technical capacities of developing countries in the implementation of IWRM, ICARM and water governance at the country level, including those dealing with the O&M of water schemes.
- Protect the quality of surface and groundwater as well as of the aquatic ecosystems and coastal zones.

(J) The World Summit on Sustainable Development (WSSD)

25. One of the main outcomes of the WSSD was that water and sanitation were recognized as being inextricably linked to the eradication of poverty and to the achievement of sustainable development. Water and sanitation were also identified by the Secretary General as one of the five specific areas where concrete results are both essential and achievable.

26. The WSSD implementation plan with regard to freshwater contains specific targets with regard to water and sanitation.

- Halve, by 2015, the proportion of people without safe drinking water and the proportion of people without access to basic sanitation;
- Develop integrated water resource management and water efficient plans by 2005;
- Provide new and additional financial resources for water management.

27. That is, WSSD reiterated the Millennium Development Goal to halve, by 2015, the proportion of people who are unable to reach or to afford safe drinking water and a new target on halving the proportion of people who do not have access to basic sanitation by 2015—not part of the Millennium goals—was also set. Elements for a program of action on sanitation were clearly established in the Plan of Implementation. Both the water and sanitation targets are set out under the Plan of Implementation chapters on poverty eradication and the natural resource base. Water resource management and protection were also recognized as fundamental to protecting and managing the natural resource base of economic and social development.

Water-related policies were included in virtually all of the natural resource objectives of the Plan of Implementation.

28. WSSD also recognised that oceans, seas, islands and coastal areas form an integrated and essential component of the earth's ecosystem and are critical for global food security, sustaining economic prosperity and the well-being of many national economic. In relation to the coastal and marine environment, the implementation plan highlights a set of key commitments, including the implementation of the GPA/LBA, establishment of a regular process for global reporting and assessment for the state of the marine environment and the strengthening of the Regional Seas Programme. The Summit called for continued assistance to the Small Islands Developing States (SIDS) in terms of technology transfer; strengthening regional fisheries management; implementing programmes on marine on coastal biological diversity and convening of an international conference for the comprehensive review of the implementation of the Barbados Programme of Action. The agreed goals and targets in the implementation plan of the WSSD include:

- Encourage, by 2010, the application of the ecosystem approach to the management of oceans, seas, islands and coastal areas;
- Reduce and prevent wastes and pollution by undertaking, before 2004, initiatives aimed at implementing the GPA and the SIDS;
- Undertake a full review of the implementation of the Barbados Programme of Action for SIDS in 2004.

## II. PROGRESS REPORT IN THE IMPLEMENTATION OF GOVERNING COUNCIL DECISION 21/11 ON WATER POLICY AND STRATEGY OF UNEP

### I. THE INTERNATIONAL CONTEXT

29. The prevailing and evolving international context, since the twenty-first session of the UNEP Governing Council/Global Ministerial Environment Forum in February 2001 has provided additional impetus as well as compelling reasons for the strengthening of the water policy and strategy. The twenty-first session of the UNEP Governing Council, that endorsed the water policy and strategy, also marked the second meeting of the Global Ministerial Environment Forum (GMEF) which is primarily concerned with promoting policy coherence in the environmental field. The GMEF produced the Malmö Declaration 2000 which highlighted the environmental threats and the water crisis confronting humanity.

30. A major theme for the second GMEF was the strengthening and streamlining of international environmental governance. Its decisions facilitated the review of institutional weaknesses and future needs and options for international environmental governance. The multilateral environmental agreements and global Programmes (such as the regional seas conventions and the Global Programme of Action to Protect the Marine Environment from Land-Based Activities (GPA/LBA) were accorded special attention. The policy issues, including those relevant to the environmental aspects of water, were central to the review of the state of international environmental governance. The IEG report underpinned discussions at the third GMEF and seventh Special Session of the UNEP Governing Council, (Cartagena, Colombia, in February 2002) which was also presented with a progress report on the implementation of the water policy and strategy. That meeting also considered the report, containing a significant section on water, of the Executive Director, on UNEP's contributions to the World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, in August 2002.

31. The water policy provided strategic direction to UNEP's participation in the preparations for the WSSD, notably the comprehensive assessment of Chapters 17 and 18 relating to Freshwater, Coastal and the Marine environment of Agenda 21. Across the globe, UNEP supported a series of subregional and regional preparatory meetings to identify accomplishments, shortcomings and emerging issues in relation to Chapters 17 and 18 of Agenda 21. These meetings have played a key role in crystallising the views of governments, civil society and the private sector on the role of UNEP in addressing the environmental aspects of water.

## II. ASSESSING GLOBAL WATER RESOURCES

### A. Water in the Global Environment Outlook

32. During the reporting period UNEP produced its third UNEP Global Environment Outlook, *GEO-3*. *GEO-3*'s multi-sectoral regional and global assessment of the state of the environment paid a special attention to the conditions of the world's water resources. The *GEO-3* report identified a wide spectrum of existing and emerging water issues that need to be addressed if the world is to achieve sustainable development. Many of these issues were the subject of Governing Council decisions in 2001, prominent among them being decisions to promote regional and intergovernmental dialogue on water, strengthening the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), improving the strategic framework of the Global International Waters Assessment (GIWA) programme and facilitating regional co-operation on the transfer of environmentally-sound technology.

33. *GEO3* draws attention to the fact that the availability and quality of fresh water is rapidly becoming one of the most critical environmental issues of the twenty-first century. By 2025, countries considered water stressed will host two-thirds of the world's population. Across the globe, groundwater is being depleted by the demands of megacities and agriculture, while fertiliser run-off and chemical pollution are threatening water quality and public health. In the developing world over 80 per cent of all diseases are attributable to unsafe water and poor sanitation; often rivers downstream from large cities are little more than open sewers.

34. The information provided in *GEO-3* confirms that the transboundary nature of freshwater resources, lakes and underground aquifers, presents an opportunity for nations to work together to manage those resources for the benefit of all and that watershed boundaries do not reflect socio-political boundaries. Nearly two-thirds of the world's major rivers are shared by several countries. In essence, *GEO-3* identified key policy issues for the environmental aspects of water. The WSSD generated a new vision and a roadmap for dealing with the critical issues. The twenty-second of the UNEP Governing Council/Global Ministerial Environment Forum is expected to take into account the new and emerging challenges in determining the means of future implementation of the UNEP water policy and strategy, whose three components - assessment, management, and coordination of actions - stress the cross-sectoral nature of water. One of the goals of the UNEP Water Policy and strategy is to identify and promote the tools that will address the critical water issues facing humanity.

### B. International Waters Assessments

35. The largest share of UNEP's GEF portfolio falls within the International Waters focal area, which provides for interventions that address issues related to specific water-bodies, contaminants, and integrated land and water management. It is in this context that UNEP implements the Global International Waters Assessment (GIWA) project. GIWA is working on the production of a comprehensive and integrated global assessment that addresses the ecological status, the causes of environmental problems and policy options that tackle the root causes of degradation. The assessment includes marine and freshwater international waters in sixty-six sub-regions throughout the world. The sub-regional assessments are conducted by task teams of local experts coordinated by a core team based in Kalmar, Sweden. The products of the GIWA include, among others: a methodology to conduct international waters assessments; sub-regional reports; mega-regional reports and a global report. These products will provide the GEF with a strategic framework for the identification of priorities for remedial and mitigatory actions in international waters. The project is mainly funded by GEF; other donors include the Government of Sweden, the Government of Finland and the National Oceanic and Atmospheric Administration (NOAA). GIWA will finish its operation in June 2004.

36. The GIWA is being implemented in five, phases: a) the development of the methodology; b) the establishment of the network; c) the analytical phase (for each sub-region it includes: identification of the international waters, of its environmental and socio-economic problems and of the root causes of the problems); d) the policy options analysis phase and; e) the dissemination phase. There is significant progress in the first three phases and incipient, preparatory work in the last two phases.

37. After several reviews, the GIWA methodology is operational in all its components. The GIWA network covers all GEF eligible sub-regions and there are promising agreements with institutions in GEF non-eligible regions to conduct the assessment. With regard to the analytical phase, as of September 2002, out of forty-two GEF eligible sub-regions, thirty-two sub-regional reports that identify and evaluate the environmental and socio-economic problems of their international waters have been submitted. The reports of the rest of the GEF eligible sub-regions are in progress. The work to identify the root causes and to analyze policy options has already started in most GEF eligible sub-regions. Progress in GEF non-eligible sub-regions has however been slower due to delayed network development, though agreements with the National Oceanic and Atmospheric Administration (NOAA) and the European Environment Agency (EEA) are anticipated to propel the assessment in those sub-regions. In relation to the dissemination of products, the expected outputs and its completion dates are: the sub-regional reports, the regional reports, articles and other material are in preparation and will be issued on a continuous basis during 2003 and 2004 based on the progress made by the particular task-teams; a GIWA assessment protocol and an Atlas of international waters environmental and socio-economic problems will be published in 2003; finally, the Global Report will be ready by mid 2004.

38. GIWA held its first General Assembly on October 2001. The objective of the assembly was to promote, facilitate and stimulate the implementation of the assessment. Methodological and practical issues were addressed and several sub-regions presented preliminary results during the plenary sessions. One of the presentations to the GIWA General Assembly highlighted the degradation of the Black Sea due to over-fishing, pollution and the introduction of alien species. As a consequence of the GIWA presentation, the three GEF partners—UNEP, the World Bank and the United Nations Development Programme—have joined with the European Union in the Black Sea Strategic Partnership. One of the scheme's objectives will be to develop a nutrient protocol to the Black Sea Convention to reduce the levels of phosphorus and nitrogen entering the sea. The GIWA web site [www.giwa.net](http://www.giwa.net) contains comprehensive links to regional action plans and programmes related to water issues, as well as links to all the players in the field.

39. The fifth meeting of the GIWA Steering Group met in Kalmar, Sweden, from 8-9 October 2002 and examined options for continuing the global assessment process beyond the current lifespan of the project, which ends in June 2004. It was agreed that deciding on which water-bodies and which threats should receive priority attention requires a periodic comprehensive assessment of the ecological status of international waters and of their related causes of degradation.

40. The UNEP Governing Council (GC) also adopted at its 21st session in February 2001 a decision concerning a "Global Assessment of the State of the Marine Environment" (UNEP GC Decision 21/13). This led to an informal consultative meeting, which was held in Reykjavik, 12-14 September 2001. The participants agreed that the process needs to be developed with all relevant stakeholders. This was followed by a second meeting hosted by the German government in Bremen, 18-20 March 2002. The participants also elaborated the key objectives and defined the practical framework for developing a GMA process. The general objective of the workshop was to agree on an outline technical blueprint for a regular process for assessment of the state of the marine environment.

41. The recommendations from the consultative and technical meetings were taken into account by the WSSD whose plan of implementation foresees establishment "by 2004 a regular process under the United Nations for global reporting and assessment of the state of marine environment, including socio-economic aspects, both current and foreseeable, building on existing regional assessments".

42. UNEP commissioned the global River Basin Information System (RBIS) prototype in 2001 to identify impacts and challenges of global change within selected, key watersheds of the world. The RBIS Initiative attempts to explore the desirability and feasibility of developing a policy level river basin information system to support UNEP's work at global, regional and sub-regional levels. In February 2002 at the Headquarters of UNEP brainstorming session was held on developing of an effective RBIS prototype that would serve the UN, its agencies and the wider global community. The need to focus the RBIS prototype and future RBIS developments on African river basins using higher resolution datasets was identified. A prototype has been prepared based on the Memorandum of Understanding between UNEP and University of New Hampshire

(UNH). This prototype is intended as a preliminary phase in exploring global change impacts and challenges to resources on a limited scale focusing initially on selected, key basins and subset of relevant data themes.

43. The RBIS (<http://www.watsys.sr.unh.edu/rbis-unep/>) will serve as a tool for generating quantitative indicators of ecosystem health and function under global change. Using a common framework and methodology the RBIS will analyse the impacts to natural resources from global change using a variety of spatial perspectives including the capability to analyse global, continental, regional, river basin and country conditions.

44. The GESAMP evaluation report was critically reviewed (<http://gesamp.imo.org/>). General considerations were given on its continuation in the framework of existing assessment activities including GC 21/13, the UN Ocean Atlas and GOOS.

45. GESAMP was advised on avoiding duplication of activities and complimenting of other assessment activities conducted by other UN agencies. New proposed mandates were made with specific tasks given. GESAMP could function as a sort of interagency STAP to ongoing UN assessment activities, addressing their cohesion and addressing emerging scientific questions. Operational modalities of GESAMP were specified to streamline its operations.

#### C. Atlas of International Freshwater Agreements

46. International co-operation, especially among countries sharing water resources has been a major goal of UNEP's efforts in the quest for the environmentally-sound management of shared waters. Water treaties, agreements and conventions abound, but knowledge of them, and the relevant records, used to be scattered and not always easily accessible. Utilizing historical documents, statistical analyses, and maps, UNEP prepared, as part of its inputs to the WSSD an Atlas presents both a graphic and textual analysis and documentation of the world's international basins and their agreements. This Atlas builds upon knowledge stored in existing environmental legislative databases. The Oregon State University's Transboundary Freshwater Dispute Database provides an effective complement to FAO's legislative database, FAOLEX, and the joint UNEP, IUCN and FAO gateway to environmental law, ECOLEX. The Atlas of International Freshwater Agreements is a welcome step in the consolidation and dissemination of information about shared water treaties. This systematic and thorough compilation of the available historical record of the very many treaties and agreements concluded in regard to the water resources of rivers and lakes shared across international borders offers fresh, compelling testimony to water being an agent of co-operation rather than of conflict. Moreover, the thematic maps featured in the atlas help understand why this is so, and add new perspective to that of the legal records which make up most of the Atlas.

#### D. Vital Water Graphics

47. Another major output of the Water Policy and Strategy and a significant contribution of UNEP to the WSSD was the launching of the "vital water graphics (an overview of the state of the world's fresh and marine waters)." Published 10 years after the Rio Summit of 1992, *Vital Water Graphics* focuses on the critical issues of water quantity, quality and availability – issues that are vital to the quality of life on Earth. The assessment of global water resources and the provision of early warnings on water issues are enshrined in the mandate, vision and mission of the United Nations Environment Programme. UNEP, UN agencies, and collaborating centres and partners monitor and analyse water resources on a global scale. This partnership enables a wider involvement in assessing the status of the implementation of Chapters 17 and 18 of Agenda 21, which address coastal and marine waters and freshwater, respectively.

48. The goal of this publication is to produce a clear overview, through a set of graphics, maps and other illustrations, of the state of the world's fresh and marine waters. It also illustrates the causes, effects, trends and threats facing our water sources, with examples of areas of major concern and future scenarios for the use and management of fresh, coastal and marine waters. *Vital Water Graphics* is a valuable and timely addition to existing assessments of the state of the world's water resources. It focuses on our most 'vital' and pressing water issues – issues that will determine the very future of life on Earth. A total of 40 graphics,

together with accompanying texts and maps, highlight how the quantity, quality and availability of fresh and marine waters play a major role in determining levels and patterns of poverty, land degradation, pollution, sanitation, health, and rural and urban development around the world. It also documents water trends in our fast changing environment, with examples from the past two decades revealing present trends and providing potential scenarios for the future. By recounting the latest chapter in the history of our fresh and marine water resources, the publication demonstrates how rapidly these are being depleted and polluted – and how urgently we must work for their conservation.

E. A New GEMS/Water Quality Assessment Programme

49. The Governing Council, in adopting the water policy and strategy, also decided that UNEP should prioritise the identification of expertise and knowledge worldwide relating to the environmental aspects of water quality and facilitate the transfer of that knowledge. It is against this background that the review of the Global Environmental Monitoring System -Water Quality Programme (GEMS/Water Programme) was carried out and a New GEMS/Water Strategic Business Plan formulated as envisaged in the water policy and strategy. The prominent attention accorded by the WSSD to water and sanitation, including water quality, provided an impetus for the launch, by the President of the Governing Council and the Executive Director of UNEP, in Johannesburg, South Africa, of the New GEMS/Water Programme (hosted by the National Environment Research Institute) whose aim is *"To analyse the state of the global environment and assess global and regional environmental trends, provide policy advice, early warning information on environmental threats, and to catalyse and promote international cooperation and action based on the best scientific and technical capabilities available"*. This mandate addresses Agenda 21 Chapters 18 and 17 that are devoted to issues of fresh, coastal and marine waters globally. The Canadian Government and UNEP have concluded an agreement which has led to the establishment of the Trust Fund with a start up contribution of Canadian \$1.5 million covering a period of 3 years. Canada will also provide institutional support to the programme. Capacity building, for the benefit of the participating countries will be a top priority.

50. The major outputs of the New GEMS Water Programme will include reliable global water quality data to improve decision-making for sustainable development. It will provide water quality information to GEO, GIWA, other assessment programmes as well as to relevant institutions. Other outputs will include a user-friendly global and regional water quality system available on the Internet and in other forms. This information and data could be used to support the River Basin Information System Prototype and will be linked with existing portals such as GEO Data, UNEP.net and UNEP water portal. A series of key water quality products like production of a sourcebook of methods for the monitoring and assessment of inland water quality, reinstating of the Global Water Review newsletter, updating of UNEP Freshwater quality related reports and web-site, and publication of statistical summaries of global water quality.

### III. MANAGING GLOBAL WATER RESOURCES

(Coastal and Marine Environment and Land-based Activities)

The GPA Intergovernmental Review, Montreal November 2001.

51. Progress in the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) up to November 2001, is contained in document UNEP/GPA/IGR.1/3 which was presented to the First Intergovernmental Review meeting of the GPA, Montreal, 26-30 November 2001.

52. Following the outcome of the First Intergovernmental Review Meeting of the GPA in Montreal, and in preparation for the World Summit on Sustainable Development (WSSD), UNEP has been actively engaged in furthering the implementation of the approved UNEP/GPA Coordination Office programme of work, 2002-2006. During 2002, programme implementation has followed the 10 activity clusters detailed in programme of work approved by the IGR meeting (UNEP/GPA/IGR.1/6 and annex), with particular emphasis on implementing the UNEP/WHO/Habitat/WSSCC Strategic Action plan on Municipal Waste Water, the programme on Physical Alteration and Destruction of Habitats and the support to national

governments in developing and adopting National Programmes of Action to implement the GPA. Early 2002, UNEP published two reports prepared by the Group of Experts on Scientific Aspects of Marine Pollution (GESAMP): 'A Sea of Troubles' and 'Protecting the Oceans from Land-based Activities'. Cooperation with the Regional Seas Programme was enhanced, thus supporting the implementation of the components of the Regional Seas Action Plans that deal with land-based sources of pollution.

53. The GPA Coordination office, in collaboration with a large number of partners, particularly the Center for the Study of Marine Policy – University of Delaware, and the Intergovernmental Oceanographic Commission of UNESCO, formed, early 2002, an Informal Co-ordinating Group on Oceans, Coasts, and Islands, to achieve synergy and effective implementation of actions before, at, and following the World Summit on Sustainable Development. At the WSSD, the Global Programme of Action lead the development of the successful Hilltops to Oceans (H2O) pavilion involving 23 partners, and coordinated the organization of the high-profile main oceans event in the Water Dome on the 2<sup>nd</sup> of September 2002. In addition, support was provided to a number of coasts, oceans and island related side events and the preparation and launching of type II partnerships. The three core partners, UNEP, the Center for the Study of Marine Policy – University of Delaware, and the Intergovernmental Oceanographic Commission of UNESCO, chaired a number of consultative meetings at the Summit and produced a well-received Guide to Oceans, Coasts and Islands.

#### Post-World Summit on Sustainable Development

54. In response to the WSSD target on sanitation, the GPA Coordination Office is working to focus international attention on the environmental aspects of improved provision of sanitation services, in particular the management of municipal wastewater and the impact of discharges of untreated municipal wastewater on the health and well-being of coastal populations and ecosystems. UNEP produced a report detailing the global threat to coastal populations and the environment from untreated sewage discharges. The report, "Water Supply and Sanitation Coverage in UNEP Regional Seas – Need for Wastewater Emission Targets?" is based on a collaboration and analysis of data from the Global Water Supply and Sanitation Assessment, 2000 Report (World Health Organization, UNICEF – the United Nations Children's Fund, Water Supply and Sanitation Collaborative Council). Indicators to assess the impact of improved sanitation on the coastal environment will be developed.

55. The draft Guidelines on Municipal Wastewater Management, outlining best practices and procedures in dealing with municipal wastewater and further enlarging the components of the GPA dealing with sewage, presented at the first IGR meeting, have been further developed and will be presented to the Governing Council for adoption. The document contains key principles and checklists of available options covering topics such as technology, finance, and institutional setup. The document represents a broad consensus on alternative approaches and procedures to sustainable wastewater treatment, including the operation and maintenance issues. The consultative process included 8 regional meetings, consultations with governments, and a peer review process involving over 400 experts.

56. To further the draft Guidelines on Municipal Wastewater Management, the Global Programme of Action proposed the Wastewater Emission Targets (WET) initiative with major partners, including the World Health Organization (WHO), Water Supply and Sanitation Collaborative Council (WSSCC), and UN-HABITAT. The WET initiative is a key component of the "H2O – From Hilltops to Oceans" Type II Partnership Proposal launched at WSSD. It aims to facilitate the development and implementation of national and regional wastewater emission targets. With regard to policy implementation, regional fora for information and experience sharing are being set up as well as pilot projects demonstrating the use of alternative solutions to the problem of municipal wastewater as detailed in the draft Guidelines on Municipal Wastewater Management. Strategic alliances with key partners are being developed to ensure that the pilot projects contribute to ongoing programmes such as those initiated by Habitat in the framework of Water for African and Asian cities, the WHO Healthy City projects, the World Bank Water and Sanitation project, and the WSSCC campaign on Water and Sanitation and Hygiene (WASH).

57. At the WSSD, an 18-month action programme was developed and agreed upon by the Informal Co-ordinating Group on Oceans, Coasts, and Islands to ensure expeditious follow-up to the WSSD Plan of Implementation and the various Type II initiatives in the field of coasts, oceans and islands. Specific activities that will be undertaken by the Informal Coordinating Group on Oceans, Coasts and Islands, including the UNEP/GPA Coordination Office:

58. The following are noteworthy; a) An update to the Guide to Oceans, Coasts and Islands to reflect the adopted text, and to include all Type II partnerships with summaries of actions, targets and timeframes; b) A programme of action to provide outreach and progress reports at relevant international meetings, e.g. the World Water Forum 3 in March 2003, and including a reflection of the relevant oceans, coasts and islands outcomes of the WSSD in the GPA Clearing-House Mechanism and the Integrated Coastal Management Global Web Service sites. c) An analysis of knowledge and resources available and needed to implement the adopted Plan of Implementation at national, regional and global levels and a system to monitor progress in implementing the Plan of Implementation will be developed. d) An Implementation Conference will be convened, in Paris, in 2003, partnership with the Intergovernmental Oceanographic Commission of UNESCO and the University of Delaware, to review and report on progress and to identify further action to ensure the effective implementation of the Plan of Implementation. e) The informal multi-stakeholder network on oceans, coasts and islands by expanding the network of partners to incorporate major industry groups will be consolidated.

#### A. Regional Seas Programme

59. UNEP's Regional Seas Programme, continues to provide a firm legal, administrative, substantive and financial framework for the implementation of Agenda 21, and its chapter 17 on oceans in particular. *The Programmes' significant contributions were widely acknowledged by governments through out the preparatory process for and at the World Summit for Sustainable Development(2002) itself whose implementation plan focuses on Oceans, seas, islands and coastal areas seen as critical elements for global food security and for sustaining economic prosperity.* The Summit's outcomes underscore the fact that sustainable development of the oceans requires effective co-ordination and co-operation, at the global and regional levels, between relevant bodies. Hence, the Regional Seas Conventions and Action Plans provide a very effective platform for the implementation of this concept. Currently, 15 regions are covered whose Action Plans are largely supported by the Regional Seas Conventions. The negotiation of the Convention in the North-East Pacific region has been the most recent one to be supported by UNEP.

60. As part of UNEP's preparations for the WSSD, UNEP's Regional Seas Co-ordinating Unit organised a Consultative Meeting of Regional Seas Conventions and Action Plans Co-ordinators (New York, 4<sup>th</sup> April 2002). The meeting prepared the paper entitled "Proposals from the Regional Seas Conventions and Action Plans for Action on Oceans and Seas by the WSSD". The participants identified the following concerns and priorities for Regional Seas Conventions and Action Plans: a) land-based activities threatening the marine environment; b) ship-generated marine pollution; c) impacts of urbanisation and coastal development; d) conservation of living marine resources and coastal ecosystems, including the depletion of fisheries; and – e) need to monitor and assess the quality of the marine environment, in order to provide a science-based information for the comprehensive and integrated management of the coastal zone and the associated river basins. The recommendations emanating from this meeting were brought to the attention of the WSSD and facilitated the design of new strategies for UNEP's Regional Seas Programme.

61. The Regional Seas Co-ordinators and Senior Officers met in London on 29 September 2002 to exchange views on: the a) role of the annual Global Meetings of Regional Seas Conventions and Action Plans; b) agenda for the 5<sup>th</sup> Global Meeting of Regional Seas; c) strategies for enhancing the visibility of the Regional Seas Conventions and Action Plans; d) increasing the impacts of the Regional Seas Conventions and Action Plans to member States; e) strategies for strengthening the role of governments in the provision of strategic support to the Regional Seas Conventions and Action Plans f) strategies for enhancing implementation at the country level; and - g) strategies for reinforcing collaboration with the non-UNEP administered Regional Seas Conventions and Action Plans. The results of the meeting were significant inputs to the ongoing efforts directed at the revitalisation of the Regional Seas Conventions and Action Plans.

62. The promotion of horizontal co-operation among Regional Seas Conventions and Action Plans remains top priority. The twinning arrangement between the Helsinki Commission (HELCOM) and the Nairobi Convention provided useful lessons and insights. The Sixth Meeting of the Contracting Parties to the Abidjan Convention, held in Abidjan, Côte d'Ivoire, 16-17 May 2002, called for closer collaboration with the OSPAR Commission. The Chair of the Abidjan Convention attended the OSPAR meeting, held in Amsterdam in June 2002. The workprogramme and strategy for revitalising the Abidjan Convention will be accorded a high degree of attention in 2003. The collaboration between the Mediterranean Action Plan (MAP) and the North-West Pacific Action Programme (NOWPAP) has been very active, mainly in the field of oil spill preparedness and response. The 1<sup>st</sup> Intergovernmental meeting of the North-East Pacific (NEP) has recommended the setting up of a joint working group between the Wider Caribbean and the NEP in order to identify possible areas of cooperation and to develop joint programmes for working in areas of common concern.

63. The UNEP Regional provides a comprehensive institutional framework not only for regional co-operation in the seas and oceans, but equally important for the implementation of a number of multilateral environmental agreements, conventions and action programmes. It is in this context that the representatives of the MEAs actively participate in the Regional Global meetings which provide fora for the exchange of views on modalities for closer collaboration and co-ordination. Such consultations have provided a firm basis for joint programming between the Regional Seas Conventions and the Multilateral Environmental Agreements.

64. The Regional Seas Coordinating Unit is contributing to a document that provides an overview of UNEP's role in implementing the Small Islands Developing States (SIDS) programme of action since its adoption in 1994, its successes, failures and lessons learnt, with a view to developing focused recommendations for improving UNEP programme delivery to the SIDS/POA.

65. Progress has been made by IMO and UNEP and several Regional Seas Conventions and Action Plans in strengthening their collaborative approach to issues of oil spill preparedness and response, in particular in the establishment of regional systems for co-operation in preparedness for and response to oil spills and in the implementation of regional training courses on response to oil spills.

66. A joint "IMO/UNEP Forum on regional arrangements in emergency response to marine pollution" was held in London (30 September to 2 October 2002). The proposed objectives of the Forum were: a- exchange of experiences and information; b- general overview of priorities and major achievements; c- identification and discussion of issues of common concern to the different regions; d- recommendations for future inter-regional co-operation; and e- identification of areas for possible harmonization of procedures and collaboration. UNEP's Regional Seas Programme has been promoting the use of the ecosystem-based approach, as a management tool to achieve the sustainable development of natural resources. In this regard UNEP has published, jointly with FAO, Advisory Committee on the Seas and other partners a document entitled "Ecosystem-based management of fisheries."

67. Several joint activities of UNEP's Regional Seas Programme marked the continued collaboration with the Intergovernmental Oceanographic Committee (IOC), namely the participation in the IOC-GOOS (Global Oceans Observation System) programme, the assistance of the Western Pacific Office (WESTPAC) of IOC in Bangkok in the organization and substantial support to NOWPAP activities related to monitoring and data and information networking, the joint activities in the implementation of the GEF MSP project in Sub-Saharan Africa: "Development and Protection of the Coastal and Marine Environment in Sub-Saharan Africa" and the subsequent "African Process". The development of GOOS regional programmes in the Caribbean and in the Mediterranean in collaboration with the respective Regional Seas Conventions and Action Plans.

68. The impact of land-based activities is transmitted to the marine environment through rivers. UNEP has therefore, established a number of Integrated Coastal Area and River Basin Management (ICARM) ([www1.unep.org/icarm](http://www1.unep.org/icarm)) demonstration projects in Senegal, Croatia, Bosnia and Herzegovina, Vietnam, the Philippines, Indonesia and Thailand in order to apply and test the "Conceptual Framework and Planning

Guidelines for Integrated Coastal Area and River Basin Management”. These projects have provided practical knowledge of ICARM in addition to the conceptual and planning guidelines already developed by UNEP.

69. To help protect the worlds’ reefs, UNEP and the World Fish Centre, supported by the United Nations Foundation, have developed the International Coral Reef Action Network (ICRAN). The project addresses the state of declining coral reefs by facilitating the implementation of the priorities identified by the International Coral Reef Initiative. ICRAN has three major components—assessment, management and communications—and supports coral reef management in four regional seas programmes: the wider Caribbean, East Africa, East Asia and the South Pacific. After successful start-up and bridging phases, the four-year ICRAN Action Phase was launched in June 2001 (*see www.icran.org/*). The importance of coral reefs is also highlighted in a new UNEP publication *The World Atlas of Coral Reefs. The World Atlas of Coral Reefs* was prepared by the UNEP World Conservation Monitoring Centre (*www.unep-wcmc.org/*), and is the most detailed assessment of the world’s coral reefs to date.

### C. Freshwater

70. The Centres providing strategic support to the implementation of the UNEP Water Policy and Strategy now include Kalmar University, Sweden (Global International Waters Assessment – GIWA); UNEP Collaborating Centre on Water and Environment (Copenhagen, Denmark) and the International Environment Technology Centre (Osaka, Japan). The purpose of the UNEP Collaborating Centre on Water and Environment (UCC-Water) is to support the implementation of the UNEP Water Policy and Strategy, particularly with regard to the environmental aspects of the management of freshwater resources and the marine environment. The Centre provided an important link with the link of the Global Water Partnership through close collaboration with the existing GWP Resource Centre at the Danish Hydrological Institute (DHI). Since 1996, the DHI was an active UNEP partner, but the new set-up, including financial and technical agreements, broadens the partnership. Under the new agreement, signed by UNEP, DHI and the Danish government (Danida) in early 2002, the institute, with its focus on finding solutions to water and environment problems, joins the growing list of UNEP “centres of excellence,” which include the Collaborating Centre on Energy and Environment at Risø GRID-Arendal in Norway and the World Conservation Monitoring Centre in Cambridge, UK. This collaboration strengthens UNEP’s provision of “best-practice” advice on environmentally –sound management of freshwater.

71. The purpose of the UCC-Water is to support UNEP in the implementation of its water policy, through global projects and programmes and consequently a major part of the centre activities concentrates on assisting these programmes. The first year allocation of resources to the individual projects and programmes is a result of priorities given by UNEP and approved by the Steering Committee at its first meeting in January 2002. The highest priority was given to assistance to the Global International Waters Assessment (GIWA) which accounts for 35% of the total resources of the Centre. Secondly the Global programme of Action for Protection of the Marine Environment from Land-based Activities (GPA) and Integrated Coastal Area and River Basin Management (ICARM) have been given high priority thus receiving 20 and 10% of the Centre resources respectively. Finally, the rest of the resources have been allocated to integrated Water Resources Management (IWRM) and Global Environment Monitoring System/Water (GEMS/Water) as well as to a number of individual activities related to dissemination of information, co-ordination, networking, ad hoc assistance etc. (in this document name “basic activities”).

72. The UNEP Collaborating Centre on Water and Environment draws on the expertise of over 300 water professionals employed by DHI as well as the institute’s global water sector networks which include individual experts, authorities, and organisations involved in water management all over the world. The UNEP International Environmental Technology Centre (IETC), located in Osaka, Japan, continues to promote the use of environmentally sound technologies to address urban and freshwater management issues. To this end, the information exchange database “Maestro” is being supplemented with a number of water management technologies. In addition, an international symposium was organized in Kobe, Japan, on efficient water use in cities, technology options for rainwater harvesting, water recycling, leakage control and water efficiency. A number of technical documents were published, for example, on the management of

lakes and reservoirs, freshwater augmentation, technologies, stormwater management and wastewater treatment. Currently, a citizens programme is being developed together with non-governmental organizations and local authorities using Lake Biwa in Japan as a case study.

73. UNEP has continued to provide information on environmentally sound technology to developing countries and countries with economies in transition to address urban and freshwater problems, including water resource management, sewage and solid waste. Efficient Water Use in Cities remains a priority area. The confluence of freshwater and urban issues is also reflected in a UNEP partnership with the United Nations Centre for Human Settlements (Habitat). The UNEP-Habitat Managing Water for African Cities programme is working to tackle the urban water crisis in African cities through efficient water demand management, capacity-building and information exchange on best practices. The United Nations Foundation-supported programme ([www.un-urbanwater.net/](http://www.un-urbanwater.net/)) is a product of the United Nations System-wide Initiative on Africa (UNSI).

74. At the end of February 2001, UNEP accepted a request from the third and final meeting of the World Commission on Dams (WCD) Forum to host a two-year follow-on initiative to the WCD. In November 2001, eight months later, the DDP Secretariat Office was established under DEPI. The goal of the DDP is: "To promote a dialogue on improving decision-making, planning and management of dams and their alternatives based on the WCD core values and strategic priorities" UNEP recognises the sensitivities surrounding the WCD Report. In moving from the global activity of the WCD to an emphasis on national dialogues, the DDP sees the WCD Core Values and Strategic Priorities as a starting point for dialogue and not a regulatory framework.

#### D. Environmentally-Sound Technologies

75. The UNEP International Environmental Technology Centre (IETC), located in Osaka, Japan, continues to promote the use of environmentally sound technologies to address urban and freshwater management issues. To this end, the information exchange database "Maestro" is being supplemented with a number of water management technologies. In addition, an international symposium was organized in Kobe, Japan, on efficient water use in cities, technology options for rainwater harvesting, water recycling, leakage control and water efficiency. A number of technical documents were published, for example, on the management of lakes and reservoirs, freshwater augmentation, technologies, stormwater management and wastewater treatment. Currently, a citizens programme is being developed together with non-governmental organizations and local authorities using Lake Biwa in Japan as a case study. UNEP has continued to provide information on environmentally sound technology to developing countries and countries with economies in transition to address urban and freshwater problems, including water resource management, sewage and solid waste.

76. In order to develop a mechanism to identify and promote environmentally sound technologies (ESTs) for freshwater management, especially water quality management, UNEP organized a regional consultation in the Mekong River Basin area. A list of recommended ESTs has been published as a result of the project. UNEP published two documents notably, one entitled "Planning and Management of Lakes and Reservoirs: An Integrated Approach to Eutrophication", which gives economics, cultural and technical causes of eutrophication and the second on "Waste Management in Small Island States" which is a directory of environmentally sound technologies for the integrated management of solid, liquid and hazardous wastes for small island developing states in the Pacific Region. Similar directories have been prepared for the small island developing States in the Atlantic and Indian oceans and the Mediterranean region.

#### E. Linking Integrated Water Resources Management (IWRM) And Integrated Coastal Zone Management (ICZM)

77. Some of the world's most precious aquatic ecosystems like estuaries, lagoons, mangroves, and coral reefs are located in the coastal zone. But the coastlines are sagging under the impact of human activities. About 50% of human population live within 200 km of the coastal line, and more are coming every day. Moreover, a majority of urban centres are located in coastal zones. It is widely recognised that there are

important linkages between the freshwater issues in the upstream river basins and the water issues in their adjoining coastal zones. Some conventions and declarations already mention this important relationship (e.g. Convention on the Protection and Use of Transboundary Watercourses and International Lakes and its Protocol on Water and Health, the Washington Declaration, Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, and the EU Water Framework Directive). Moreover, UNEP has, through pilot projects and guideline development put focus on Integrated River Basin and Coastal Area Management (ICARM) since a few years.

78. UNEP's past and ongoing ICARM activities such as pilot projects, ICARM Guidelines, websites etc. as well as the practical ICARM related experience of the gradually growing group of partners provide a framework for action. Some specific activities in the Dialogue will include: Identification of case studies, practises and experiences with respect to ICARM; Establishment of a discussion group in the virtual Water Forum on ICARM; A Technical Workshop in South East-Asia ultimo 2002; Establishment of an internet based ICARM ToolBox in close co-operation with the IWRM ToolBox of the Global Water Partnership (GWP); A session at the Third World Water Forum with a multi-stakeholder dialogue on the Synthesis Report.

79. The Regional Workshop in December 2002 will introduce, by presenting case studies and the results from both the Virtual Water Forum and the preparatory multi-stakeholder meeting to be held, the pro's and con's of an enhanced integration of both management approaches. The session will invite the audience to indicate which issues will benefit from a further integration of River Basin and Coastal zone Management. The session will consider how a closer collaboration of freshwater and coastal/marine managers, politicians, scientists, institutions, NGO's, private business etc. may be beneficial for all, and establish key arguments and principles for integrating both River Basin and coastal Area Management principles. Mechanisms to support and implement such an integration will be explored.

#### F. Best Practices

80. Over seventy governments have designated focal points to facilitate information exchange on best practices in water management. The GPA/Clearing House Mechanism the International Environment Technology Centre, the Global International Waters Assessment Project, UNEP Collaborating Centre on Water and Environment with its links to the Danish Hydrological Institute, as well as the Regional Seas Conventions, regularly promote information exchange on best practices in the management of the freshwater, coastal and marine environment. UNEP promoted the exchange and dissemination of information on sound policy responses and cost-effective technologies, as well as experience and lessons learned at the subregional, regional and global levels, in the environmentally sustainable management and use of freshwater resources. UNEP's efforts are intended to develop environmental perspectives and to facilitate discussions on best-practice responses with regard to policy, institutional, legal and economic options for addressing the environmental aspects of critical freshwater issues. This approach will encourage discussions on, and the development and application of, environmental standards and guidelines based on best-practice policy responses. Partnerships are being strengthened with major groups as a means of drawing on the range of available expertise in identifying best-practice responses to environment-related freshwater issues at all levels. Relevant groups include the Water Supply and Sanitation Collaborative Council, the World Water Council, the Global Water Partnership and regional institutions and networks and special-purpose organizations such as the World Commission on Dams.

81. The Dams and Development Project (DDP) is a broad-based multi-stakeholder process bringing together civil society, private sector and governments into dialogues on dams and development. UNEP has and will continue to invest a significant amount of time and effort in ensuring that this follow-on is inclusive and accessible to all who are interested. The engagement of relevant government agencies to this process is particularly important. A 14 multi-stakeholder member Steering Committee provides guidance on the DDP to UNEP. UNEP's water policy identifies the WCD as relevant in strengthening partnerships with groups with expertise in identifying best-practice responses to environment-related freshwater issues at all levels. Recognising the importance of country specific contexts and responses, the DDP supports country-level, regional and global dialogues on dams and development issues. The Project catalyses and supports efforts

by different stakeholders to consider and discuss the WCD recommendations. The objective is for these multi-stakeholder dialogues to ‘contextualise’ the broad principles in the report and develop locally appropriate recommendations for changes in policies and procedures where needed. This approach is consistent with UNEP’s approach to identify and promote the use of appropriate integrated policy measures in tackling the root causes of major freshwater concerns.

82. DDP considers that dialogue among groups with different perspectives is important in finding solutions to controversial issues such as dams and development and is consistent with UNEP’s approach to provide forums for intergovernmental policy dialogue and information exchange on issues relating to the freshwater environment. The DD Forum has been created with over 100 members with representatives from governments, NGOs, industry, indigenous peoples groups, utilities etc. The involvement of government agencies in the Forum from countries with major dam building programmes such as Brazil, China, India, Turkey signifies the importance of addressing these issues and learning from each others experiences.

83. In line with UNEP’s policy on promoting the exchange and dissemination of information on best practices in the environmentally sustainable management and use of freshwater resources, the DDP has initiated a web-based Good Practice and Lessons Learnt database related to dams and their alternatives. This process will strengthen interaction and networking among participants in the dams debate and lead to improved policies and procedures in the future. It is linked to other UNEP activities on best practice.

84. One of the activities undertaken by UNEP in PHASE I of the GEF funded, UNDP lead IW:LEARN programme, is the development of a internet-enabled database system for capturing institutional memory, best practices and lessons learnt in the international waters GEF focal area. The system consist of three modules: a search module, data collection module, and a project inventory linking all case studies and lessons learnt to a resource base (project documents, outputs, evaluations, contacts, etc). The system is designed to serve as a platform to foster replication of wise practices and experiences gain while addressing transboundary water issues. The prototype is located at <http://www.eco-insight.org>.

#### IV. CO-ORDINATION, PARTNERSHIPS AND MOBILISING ACTIONS

##### A. Regional Implementation of the Water Policy and Strategy

##### (i) **AFRICA**

85. As co-chair of the Water Cluster of the United Nations System-Wide Special Initiative in Africa, UNEP supported the establishment of the African Ministerial Conference on Water (AMCOW), which was launched in May 2002. AMCOW provides a Forum for Intergovernmental Policy Dialogue on the Sustainable Management of Water in Africa. As an intergovernmental mechanism, it now has provided a firm basis for decision-making, priority setting and strategic direction in terms of the efforts needed to halt and reverse the water crisis in the region. AMCOW and UNEP are collaborating in furtherance of the goals of the International Year of Freshwater, Third World Water Forum and the World Water Day – all taking place in 2003. A similar collaboration is taking place within the framework of the recently launched EU Water Initiative for Africa. UNEP also actively participates in the African Water Task Force, African Water Facility, Interagency Working Group for Water in Africa and in the GEF International Waters Portfolio for the region. Africa has over 50 major international water basins, yet procedures for avoiding or resolving disputes over water are largely lacking. UNEP is developing several projects within the Global Environment Facility (GEF) that promote an integrated catchment approach to managing shared water resources in the Volta River Basin, the shared catchments of Niger and Nigeria, and in Guinea’s Fouta Djallon Highlands, the source area for 70 per cent of the waters of the major shared rivers in West Africa, including the Niger, Senegal, Gambia, Kaba, Kolenté, and Koliba.

86. UNEP is implementing a GEF MSP “Development and Protection of the Coastal and Marine Environment in Sub-Saharan Africa. The project represents a significant opportunity for the UNEP to augment existing activities in Africa by ensuring improved co-ordination among existing measures to protect the marine and coastal environment of the region and by initiating actions based on new partnership between

foreign donors/partners and countries in the region. The overall goal of this Project is to assist sub-Saharan African countries in achieving the sustainable management of their coastal and marine environment and resources. The project has developed a programme of interventions that effectively address problems identified as having adverse impacts on the sustainable development of the marine and coastal environment in sub-Saharan Africa. These interventions span the spectrum from policy and planning frameworks, capacity building and institutional strengthening measures to reduce degradation of hot spots and sensitive areas, maintenance and restoration of ecosystem integrity, promotion of sustainable and alternative livelihoods, and monitoring for the future. These proposed projects are tightly linked to other projects, programmes, and initiatives, including global multilateral initiatives, regional initiatives (the Nairobi and Abidjan Conventions, for instance) including the New Partnership for Africa's Development (NEPAD), as well as bi-lateral efforts.

87. UNEP is implementing a project on "Urban Pollution of Surficial and Groundwater Aquifers in Africa" (<http://www.unep.org/groundwater>) in collaboration with UNESCO-IHP, UN-Habitat and ECA. The project covers seven West African countries (Benin- Cotonou, Burkina Faso - Ouagadougou, Cote d'Ivoire- Abidjan, Ghana - Accra, Mali- Bamako, Niger- Niamey, Senegal-Dakar) cities. The focus is on the adverse effects of urban pollution of groundwater aquifers, which are used as a source of potable water. The outputs include: (a) a set of urban area vulnerability maps and descriptive text showing the nature and extent of pollution; (b) standardized methodological guidelines for optimal monitoring of wells to serve as early warning and trend detection system for water supply in contamination on seven West African countries; (c) reports on the status of urban groundwater pollution in Seven West African countries prepared every 6 months; (d) a network was established to monitor urban groundwater pollution in West Africa .

88. UNEP is actively involved with UN-Habitat in the Water for African Cities Programme. The objective of the programme is to tackle the urban water crisis in African cities through efficient and effective water demand management, build capacity to mitigate the environmental impact of urbanization on freshwater resources and boost awareness and information exchange on water management and conservation.

89. GIWA is presently finalizing a regional report on its activities in Africa. This report will cover all the five Africa sub-regions and will include GIWA's five major focus/concerns, that are, (i) freshwater shortages, (ii) pollution, (iii) habitat and community modification, (iv) unsustainable exploitation of fisheries and other living resources, and (v) global change. GIWA is also working on the following Africa case studies: Gulf of Guinea, Lake Chad, East Africa Lakes as well as the following currents: Benguela, Agulhas, Somali coastal, and the Canary. GIWA exposed its activities in a side event at the 9th Session of the Ministerial Conference on Environment (AMCEN) that was held in Kampala from 1-5 July 2002. Closer and enhanced working relationship is being developed with GIWA in line with the outcome of the World Summit on Sustainable Development.

90. UNEP is supporting the Nairobi and Abidjan Conventions to make them more effective. In this framework, UNEP has contributed in organizing the following meetings: (i) the 3rd Meeting of the Contracting Parties to the Nairobi Convention in Maputo, Mozambique from 5-7 December 2001 and (ii) the Sixth Meeting of the Contracting Parties to the Abidjan Convention, in Abidjan from 16-17 May 2002. UNEP, in collaboration with African Governments and a number of partners, facilitated the convening of a "Partnership Conference for the Protection, Management and Development of the Coastal and Marine Environment" in Africa. The process was initiated to revitalise the Regional Seas Programme in the region, notably the Abidjan and Nairobi Conventions. It should also be noted that GPA is undertaking capacity building activities, within the framework of the revitalization programme for both conventions and funding from Ireland. UNEP is providing considerable technical support and advice for the implementation of SADC Water Sector Regional Strategic Action Plan. This support deals specifically with integrated water resources management and water review policy, in close collaboration with other bilateral/multilateral development partners and UN agencies.

91. The UNEP/GEF international water portfolio includes a significant number of water projects in the Africa Region. UNEP is also developing several projects within GEF to promote an integrated catchment's approach to managing shared water resources in the Volta River, the shared catchment of Niger and Nigeria,

and in Guinea's Fouta Djallon Highlands, which is the source area for 70 percent of the waters of the major shared rivers in West Africa, including the Niger, the Senegal, the Gambia, the Kaba, the Kolenté and Koliba rivers.

92. Several national multi-stakeholder processes have been initiated in various parts of the world and others are being developed. In South Africa a multi-stakeholder initiative emerged in July 2001 and is embarking on a detailed study to analyse the key issues in the South African context. It forms the basis for more substantive analysis and research where necessary that in turn will lead to policy and procedural recommendations to all South African institutions involved in dams and their alternatives.

93. UNEP, together with UCC-Water and the Government of Senegal, developed a pilot study on the Integrated Coastal Area and River Basin Management for the Senegal River Basin and its associated coastal areas, as one of its initial pilot activities under the ICARM. The pilot study would provide a basis for demonstration of benefits of taking an ICARM approach to the lower delta of the Senegal River.

## (ii) ASIA-PACIFIC

94. UNEP/ROAP has been fully supportive of the GIWA project since its early implementation stages. A number of meetings with GIWA secretariat staff have been held, resulting in the development of a draft Memorandum of Understanding between UNEP/ROAP and the GIWA secretariat, outlining benchmarked activities and expected outputs. Given the importance of the objectives of the GIWA project and its political implications in the region, UNEP/ROAP has offered numerous comments and suggestions to the secretariat regarding the modality of implementation and interaction with governments in Asia-Pacific. Following recent discussions between UNEP/ROAP and senior GIWA staff in June 2002 in Bangkok, it is expected that a mutually acceptable arrangement and mechanism for further implementation of the next stage of GIWA in the Asia-Pacific can be advanced. ROAP is co-ordinating with ROWA the implementation of the 1<sup>st</sup> stage of GIWA in sub-region 52 (Arabian Seas) between India and Pakistan.

95. The US\$ 32 million South China Sea project, implemented by UNEP, represents the first attempt to develop regionally co-ordinated programmes of action designed to reverse environmental degradation particularly in the area of coastal habitat degradation and loss, halt land-based pollution and address the issue of fisheries over-exploitation. The full-sized project, which commenced earlier this year, is comprised of the following components, namely: *Habitat Degradation and Loss; Over Exploitation of Fisheries in the Gulf of Thailand; Land-based Pollution; Project Co-ordination and Management.*

96. As a follow up and response to the outcome of the First Intergovernmental Review Meeting of the GPA, 2001 Montreal, the GPA Coordination Office has recently initiated a more detailed programme in South Asia with special emphasis on one of GPA's Nine Focal Areas: Physical Alteration and Destruction of Habitats (PADH). In this context, UNEP/ROAP and the GPA Coordination office are collaborating on the development of an Analytical Paper on the Coastal Zone Management Laws of the Five Coastal States in South Asia related to Land-based pollution of marine resources, (Bangladesh, India, Maldives, Pakistan and Sri Lanka), which could serve as a useful reference guide for local communities, legislators, and policy makers.

97. The Regional Workshop on Identification of Pollution Hot Spots in the Region, organized by UNEP was convened in Hua Hin, Thailand from 21-23 August 2002. This was a landmark meeting in terms of identifying regional sources of pollution and the methodology and experiences shared served as a useful input for the UNEP/GEF South China Sea Project. As a follow up towards the implementation of the Regional Programme of Action for the Protection of the Marine Environment of the East Asian Seas from Land-based Activities, the UNEP/GPA Coordination office and the UNEP EAS/RCU jointly organized the Regional Workshop on Protecting Coastal and Marine Ecosystems from Land-based Activities in the Asia-Pacific, which was held in Toyama, Japan from 24-28 September 2001. This workshop was the fourth in a series of regional consultative meetings on wastewater management. Member countries recognized the importance of further discussion on the three themes of the workshop (Future activities in developing regional guidelines, Innovative solutions, and Building partnerships) and the need to provide institutional and

administrative arrangements, such as the establishment of a Steering Group to further guide the implementation of the GPA within the East Asian region.

98. In the East Asian Seas region, the United Nations Environment Programme's (UNEP) Regional Seas Programme is implementing ICRAN (see relevant point under Regional Seas Programme). The Project began in early 2002, with activities carried out at 4 selected demonstration and 4 target sites in the region, under the three focal areas of marine protected areas, community-based management, and sustainable use for tourism. Demonstration sites represent areas where a reasonable level of successful coral reef management has been achieved, and where these practices could be translated to less successful sites.

99. UNEP/ROAP facilitates information sharing and concrete action on freshwater issues. Through the inter-agency Thematic Working Group on Environment and Development (TWGED), UNEP has played a key role in drawing attention to the alarming problem of arsenic contamination of groundwater not just in Bangladesh, but throughout the region, resulting in firm commitments by many UN agencies towards successfully organizing a major Regional Expert Meeting on arsenic contamination of groundwater, which was convened by ESCAP, WHO, and UNICEF in Bangkok from 2-4 April 2001. As the secretariat of the TWGED, UNEP/ROAP has also led the development of an Activity Matrix capturing the range of projects and activities (including freshwater and coastal/marine) carried out/ or being planned by the UN and TWGED member agencies at national, sub-regional and regional levels in Asia and the Pacific. This serves as useful information and planning resource for the UN system as well as other users, such as government and civil society.

100. In Vietnam, the Ministry of Agriculture and Rural Development (MARD), the responsible agency for water resources management, hosted a National Workshop on Dams and Development in October 2002, with support from the Asian Development Bank (ADB) and the DDP. The next step is for Vietnamese specialists to identify the key issues, challenges and opportunities for Vietnam in light of the WCD Report. A critical part of the support from UNEP to these events was raising awareness and stimulating multi-stakeholder dialogues, including participation of people in the meetings who otherwise would have been unable to attend. DDP is currently discussing similar initiatives in Brazil and Thailand.

101. Initiated as UNEP assistance to the 1998 floods in the Yangtze River basin, a project development activity is underway to address conservation and restoration of ecosystem functions in the basin, which are linked with control of floods. The project being developed would address a basin-wide monitoring and assessment and a set of demonstration sites.

### **(iii) EUROPE**

102. In Europe, GIWA is active in the Mediterranean, the Black Sea, the Caspian Sea, the Aral Sea and the Baltic Sea. UNEP/ROE facilitated the contacts with the Black Sea and the Caspian Sea Regional Coordinating Units. GIWA has also been requested to assist in preparing a background paper on regional seas for the Newly Independent States (NIS) component of the European Union Water Initiative which will form the water component of the NIS environmental strategy.

103. The Caspian Environment Programme (CEP) is a regional umbrella programme developed by the five Caspian littoral states: Azerbaijan, Iran, Kazakhstan, Russian Federation, and Turkmenistan. CEP is largely funded by the international community through the Global Environmental Facility, (with UNDP, UNEP and World Bank as implementing agencies), the EU/TACIS, and the private sector. In accordance with its mandate, UNEP/ROE is providing strong support for the development of a legal framework for the environmental co-operation in the Caspian region, to promote sustainable development and management of the Caspian environment. Since 1996, UNEP/ROE has organized a total of six "Meetings of Experts on the Preparation of a Framework Convention for the Protection of the Marine Environment of the Caspian Sea". In the context of legal and economic capacity building activities, UNEP/ROE, in close co-operation with the Caspian Regional Thematic Center on Legal, Regulatory and Economic Instruments (CRTE/LREI), has finalized two comprehensive reports analyzing the Caspian states' legal, institutional and economic frameworks related to the protection and sustainable management of the Caspian environment. The reports

will provide an important input to the preparation of the Transboundary Diagnostic Analysis, and for identifying areas where further technical assistance should be provided. A CEP Steering Committee Meeting took place in autumn 2001. The meeting focused on reviewing and assessing progress made under the CEP to date, and the prospect for further GEF and EU funding to the CEP.

104. It will be recalled that the negotiations on the Caspian Convention have paved way for a signing ceremony. Further more, at the World Summit on Sustainable Development (South Africa, September 2002), the European Union launched a Global Water Initiative, with special focus on Africa as well as the Newly Independent States (NIS). The GPA, GIWA and the UNEP Regional Office for Europe are actively involved.

105. To respond to the requirements of the Newly Independent States (NIS), UNEP/ROE together with the Economic Commission for Europe designed jointly with a Moscow NGO "Ecoterra", a draft project proposal on "Transboundary Water Agreements in the Newly Independent States". Based on a thorough analysis of shortcomings of existing cooperation and successful examples of joint work, the existing project could be at the root of a coordinated approach to transboundary water management in a region where such cooperation is still lacking, and the integration of new policies of transboundary water management based on the ECE Water Convention and the European Commission's Water Framework Directive. Funds are being sought for its implementation.

106. With GEF support, UNEP/ROE is facilitating the preparation of a nutrient protocol to the Black Sea Convention. In cooperation with the World Council of Churches (WCC), UNEP/ROE is preparing training and awareness raising material for dissemination through and capacity building by churches. A joint UNEP/World Churches Council Black Sea Environment Education Programme was established and a meeting with regional NGOs, government and church representatives took place in Constanza, Romania, on 7-8 February 2002. The meeting identified ways and means of involving churches and religious communities in environmental protection activities.

107. As one of the ICARM demonstration sites, UNEP has developed a demonstration project for the Cetina River Basin and its associated coastal areas (Croatia and Bosnia and Herzegovina). The results of the initial assessment resulted in the publication.

108. UNEP/GPA is assisting the GEF Black Sea Recovery Project and the Black Sea Secretariat of the Istanbul Commission to prepare recommendations for the drafting of the new LBA Protocol for the Bucharest Convention and facilitate its implementation. GPA Office will also undertake a joint study (with Istanbul Commission) of improving the implementation of the GPA in the Black Sea.

109. GIWA is evaluating future threats to the Black Sea, the social and economic root causes of environmental degradation and the cost effectiveness of interventions to correct current and emergent transboundary problems (using the GIWA methodology, including full impact assessment).

#### **(iv) LATIN AMERICA AND CARIBBEAN**

110. Three Regional Seas Programme exist within the region:: Wider Caribbean Regional Seas; Southeast Pacific and Northeast Pacific. Only the first programme is co-ordinated by UNEP from Jamaica, the second one has as a regional secretariat: the Permanent Commission for the South-East Pacific (CPPS) and the third one has not yet been established properly with an independent secretariat. ROLAC has been working since June of 2001 with the GPA Co-ordination Office, in particularly in the implementation of the Strategic Action Plan (SAP) for Municipal Wastewater Management in Latin America and the Caribbean. There had been two workshops and soon some pilot projects will start being implemented in the region. In 2001, a publication on "Municipal Waste Water as a Land-Based Source of Pollution in Coastal and Marine Areas of Latin America and the Caribbean", was prepared and presented at the Intergovernmental Review Meeting for the GPA in Montreal, Canada, November 2001.

111. UNEP promoted and facilitated the negotiations of the text of the Convention for Cooperation in the Protection and Sustainable Development of the Marine and Coastal Environment of the Northeast Pacific.

The Convention was signed at the Conference of Plenipotentiaries in La Antigua, Guatemala, on 18 February 2002 by six of the eight member states: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama. The Conference of Plenipotentiaries also adopted the Plan of Action for the Protection and Sustainable Development of the Marine and Coastal Environment of the Northeast Pacific.

112. The Conference of Plenipotentiaries was followed the next day by the First Intergovernmental Meeting of the Plan of Action for the Northeast Pacific in Guatemala City, Guatemala, from 19 to 22 February 2002. The meeting asked UNEP to serve as the interim Secretariat until the permanent Regional Coordinator Unit is established.

113. An up-dated document about the freshwater situation in the region is currently being carried on as well as a document on the regional guidelines for municipal wastewater management in LAC. In the year 2003 the Second Workshop on Municipal Wastewater Management will be held according to the implementation of the SAP in LAC. A workshop on the Physical Alteration and Destruction of Habitats (PADH) in the Caribbean was held in 2002. The workshop is part of the GPA project in the Caribbean. Three studies will be prepared as background for the Second PADH Workshop: a) Comparative Analysis of the Legislation and Institutional Arrangement for Integrated Coastal Management addressing PADH; b) An economic study of the sandy beaches in the Caribbean; and c) A diagnosis of the erosion processes on sandy beaches in the Caribbean. The Second Workshop will be held in February 2003.

114. The following GEF projects are implemented or developed in the region by regional partners such as the Organization of American States and UNEP's Caribbean Regional Seas office: Integrated Watershed Management Program for the Pantanal and Upper Paraguay River Basin (Brazil); Integrated Management of Land-Based Activities in Sao Francisco Basin (Brazil); Implementation of the Strategic Action Program for Bermejo River Binational Basin: (Argentina-Bolivia); Formulation of a Strategic Action Programme for the Integrated Management of Water Resources and the Sustainable Development of the San Juan River Basin and its Coastal Zone (Costa Rica-Nicaragua); Integrated Watershed and Coastal Area Management in the Small Island Developing States of the Caribbean (Regional); "Establishment of a Marine Conservation and Sustainable Development Corridor Between the Galapagos (Ecuador) Gorgonas/Malpelo (Colombia) Coiba (Panama) Cocos Islands (Costa Rica).

115. UNEP's Regional Office for Latin America and the Caribbean has been working in the preparation of some proposals for the Global Environmental Facility in order to get international funding for financing issues related with water. The Forum of Ministers of Environment for Latin America and the Caribbean developed the Latin America and the Caribbean Initiative for Sustainable Development. This initiative contains the following aspects in water resource management: freshwater supply, watershed management, management of marine and coastal areas and their resources, better quality of inland waters.

**(v) WEST ASIA**

116. The implementation of GIWA in the 5 Sub-Regions (Gulf of Aden #48, Red Sea #49, ROPME Sea Area #50, Jordan Valley #51 and Arabian Sea #52) is co-ordinated by UNEP/ROWA, involving various regional organisations, among them PERSGA, ROPME, and the Economic and Social Commission for West Asia (ESCWA). The first Draft of Sub-region 51 has been submitted for review. The other sub-regional reports are still under preparation.

117. An overview, "Environmental Assessment of Management of Land-based activities in West Asia: An Overview of Socio-economic Aspects related to Wastewater", has been prepared of the existing and potential economic and social developments in the region related to the marine, coastal and associated freshwater environment, especially with relation to the problem of municipal wastewater, such as land reclamation, urban extensions, industrial and commercial estates and tourism development. The Kuwait Institute of Scientific Research prepared the overview. The study further includes an overview of the potential for treatment and reuse technologies and approaches to municipal wastewater taking into account the environmental and socio-economic characteristics of the region, including innovative treatment options, the

use of natural or artificial wetlands and groundwater recharging. The implementation of the GPA in the West Asia region will involve a total of 19 countries.

118. These countries are presently part of three regional action plans aimed at the protection and sustainable development of the coastal and marine environment. These are the Kuwait Action Plan (involving member states of the ROPME Sea Area), the Red Sea and Gulf of Aden Action Plan and the Mediterranean Action Plan. To involve all relevant stakeholders at an early stage of the programme development in the region, the UNEP/PERSGA/ROPME Workshop on Municipal Wastewater in West Asia was convened in Manama, Bahrain, 10-12 November 2001. This meeting discussed a number of background documents, including a critical review of the document "Environmental assessment of management of land-based activities in West Asia: An overview of socio-economic aspects related to wastewater"; (ii) the conclusions of the Regional Stakeholders Roundtable in Preparation of the World Summit on Sustainable Development (Manama, Bahrain, 23-25 September 2001); and (iii) the proposed work programme of the UNEP/GPA Co-ordination Office and partner organisations, 2002-2006, prepared by UNEP for the First Intergovernmental Review Meeting of the Implementation of the Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-based Activities (Montreal, Canada, 26-30 November 2001).

119. The meeting and subsequent implementation proposal also took into consideration and built upon the findings, priorities, activities and recommendations of the major binding and non-binding agreements and programmes, as well as on other relevant documents, dealing with the protection of the marine environment from land-based activities in the Red Sea and Gulf of Aden, and the ROPME Sea Area. The draft work programme to address municipal wastewater management in West Asia (including all countries identified above) prepared by the meeting participants was endorsed by the Government-designated experts attending the workshop. This includes the development of a detailed Programme of Work for the region involving legislative reviews, identification of hot spots and the development of demonstration projects. Future activities under this programme will be aimed at addressing in priority the sewage problem in order to ensure proper availability of clean water for re-use, control pollution of coastal and marine areas and prevent health hazards problems resulting from sewage. A regional project in this regard is being prepared for EU funding.

120. In recognition of the increasing use of desalinated water, a Consultation for Planning the Preparation of the Water Quality Guidelines for Desalination was convened in Bahrain (28-31 May 2001) in co-operation with the WHO. The goal for developing health-related water quality guidelines for desalination is to provide water quality guidance that will assist practitioners of desalination and public health authorities, to ensure that water produced from the various sources and utilising the several technologies and conditions will be microbiologically and chemically safe when it enters distribution, and that it will be compatible with the distribution system, acceptable to consumers and safe for all normal uses. It is expected that well reasoned water quality guidelines should facilitate the installation of new facilities by providing universally accepted quality goals. WHO Guidelines will also provide confidence that the water quality goals are credible, scientifically defensible and appropriate.

121. The meeting participants proposed the establishment of an Interagency Task Force on Desalination in the GCC countries to promote information exchange, research and development in desalination. It was recommended that UNEP/ROWA, in co-operation with WHO/EMRO and ROPME, co-ordinate the work of the Task Force, provide the secretariat, seek funding and liaise with the global programme on desalination. The WHO/EMRO Centre for Environmental Health Activities (CEHA) will serve as the information exchange centre for the Task Force.

122. Although not much has been done as a follow-up to this meeting, UNEP/ROWA is committed to develop a mechanism for exchange of information and knowledge with regard to desalination technologies as well as desalinated water.

123. Working in cooperation with ROPME, ACSAD and UNEP's Global Resource Information Database (GRID), an initial assessment of the Tigris-Euphrates basin, a river basin that has gained international attention over recent years because of increasing water stress and the political issues of shared water resources, highlighting the links between environment and security was carried out. Two hot spots have been

identified: the construction of dams in the headwaters in the Turkish mountains and the loss of vast areas of the Mesopotamian marshlands.

124. These marshlands, the largest in West Asia, are of global significance and their abundance of flora and fauna make them important biodiversity reserves, but they are threatened by upstream developments and drainage schemes. The loss of such wetlands, and the encroaching urban developments will also have an impact on the groundwater resources of the area as well as the coastal ecosystems.

125. The study undertaken by UNEP and its partners in the region and backed with hard satellite evidence, graphically documented the stunning scale and speed at which the wetlands have disappeared. Originally about 15-20,000km<sup>2</sup>, about 90% of the marshlands had disappeared by May 2000, with devastating impacts on wildlife and the unique human communities that live there. The destruction of these vast Mesopotamian marshlands, a region of global importance for biodiversity and home of the Marsh Arab, will go down in history along with other human-engineered changes such as the desiccation of the Aral Sea and the deforestation of Amazonia, as one of the Earth's major and most thoughtless environmental disasters.

126. This project will be further developed, and it has been proposed to the partners in the original work that a clear and precise work plan is developed. This will include linking the work with that of GIWA in the region, taking advantage of the assessment work carried out. It will also focus on capacity building in the region, especially with respect to an Integrated Regional Programme of Action for water resources management, with emphasis on rivers and associated wetlands and estuaries.

127. A draft Terms of Reference for an Integrated Regional Programme of Action will be developed by the project participants, which will then be forwarded to the countries of the region (and Iran and Turkey) for consideration. Subsequently, a Technical Meeting will be convened to include the relevant Member States and regional organisations to discuss the development of a country driven integrated water resources management plan, including monitoring and assessment of river and estuarine water quality, monitoring of river discharges and uses, basin management and the appropriate funding mechanisms for such a project (GEF, regional funding agencies etc.). The institutional reforms and revision of national laws, regulations and mechanisms as well as capacity building, stakeholder participation and the encouragement of research, networking, and training must be promoted in the region in order to achieve a fair and sustainable use of this scarce resource. These issues were addressed at the First Regional Conference on Water Demand Management, Conservation and Pollution Control (Jordan, 7-10 October 2001), organised in co-operation with WHO. The Second Conference is scheduled for 2003. In the meantime UNEP will carry out a series of workshops in the region addressing these issues and providing capacity building for member states on strategies for water demand management, conservation and pollution control.

128. UNEP/ROWA is co-operating with a number of regional organizations, educational institutions and other groups in order to promote the environmental agenda in the region and to establish centres of excellence such as Cleaner Production Centres, Regional Environmental Information and Assessment Centre, Technology Transfer Centre etc. In addition, ROWA is working with the UAE for the development of the AGEDI initiative in the region, which aims at the establishment of a global, regional and national systems for the acquiring, environmental data that are accurate, reproducible and easily accessible to decision makers. As a follow-up to the Abu Dhabi Declaration that emerged from the meeting of the Arab Council of Ministers Responsible for the Environment (CAMRE), UNEP/ROWA together with the CAMRE Secretariat and UAE is translating the Declaration into programmes and activities to be presented to donors for funding the implementation in the region. These activities cover the following three are: Integrated Marine and Coastal Areas; Integrated Freshwater Resources Management; Integrated Land Management.

129. UNEP/ROWA, in collaboration with the Division of Environmental Conventions, is co-ordinating with the two Regional Seas Programmes, PERSGA and ROPME, the development of a Regional Action Programme under ICRAN for the preservation and management of the Coral Reefs in the region.

## B. International Co-Operation And Co-Ordination

130. The international community, UN agencies and a variety of stakeholders played an important role in the implementation of the water policy and strategy. The Germany Government hosted the International Conference on Freshwater in Bonn, from 3-7 December 2001, in close co-operation with a number of United Nations agencies, including UNEP. The purpose of the conference was to contribute to the quest for solutions to global freshwater problems and equally important to provide inputs to the WSSD. The Executive Director of UNEP, in his keynote address to the Conference highlighted the importance of water in all sectors of social and economic development, poverty eradication, cultural diversity and in the relationship between water and energy issues. In addition to actively participating in the conduct of the sessions, UNEP sponsored a number of major side/parallel events.

131. UNEP is supporting the efforts of the international community in the implementation in the preparations for the observance of the International Year of Freshwater. The General Assembly resolution 56/192, had proclaimed 2003 as the International Year of Freshwater, and requested the Secretary-General to submit to it at its fifty-seventh session an interim report on the activities undertaken in preparation for the Year. In that resolution 55/196, the Assembly invited the former ACC Subcommittee on Water Resources to serve as the co-ordinating entity for the Year. At its twenty-second session, the former Subcommittee accepted with appreciation the offer of the Department of Economic and Social Affairs of the United Nations Secretariat and the United Nations Educational, Scientific and Cultural Organization (UNESCO) to jointly co-ordinate United Nations system activities for the Year. The former Subcommittee also welcomed UNESCO's offer to provide the co-ordinating secretariat for implementing the programme of activities for the Year. UNEP is participating in the planning of the Observance of the Activities.

132. It has also been agreed that closer co-ordination should be promoted to elaborate and support proposals and undertake activities related to the Year and beyond. The International Year of Freshwater, 2003 provides an opportunity to follow up on the outcomes of the Summit and to consolidate and build upon the many efforts carried out to date to protect, use and manage freshwater resources in a sustainable manner. In furtherance of the goals of the Water Policy and Strategy, UNEP plays an active role in the World Water Forum Series, The Third World Water Forum, organised by the World Water Council and hosted by the Government of Japan, will be one of the major conferences dedicated to freshwater issues to be held in 2003. The Forum is to be held in Kyoto, Shiga and Osaka, Japan, from 16 to 23 March 2003. The various UNEP Divisions and Centres are supporting the preparations and sponsor a variety of events. For example, during the Third World Water Forum, UNEP's regional seas programme and the Global Programme of Action will feature the "H<sub>2</sub>O: From Hilltop to Oceans" initiative, particularly during the Third World Water Forum in Japan and on World Water Day, 22 March 2003

133. The first edition of the *World Water Development Report*, being prepared by the United Nations system, with considerable UENP inputs, launched at the Forum in Kyoto on World Water Day, 22 March 2003. With regard to the observance of the World Water Day 2003, UNEP has been requested by the members of the United Nations ACC (Administrative Committee on Co-ordination) Sub-Committee on Water Resources to consider the possibility of playing lead agency role for the observance of the 2003 World Water Day under the theme "No water – no future" To resolve some of the issues surrounding dams the World Commission on Dams (WCD) was established in 1998. In 2000, the WCD produced its final report *Dams and Development: A New Framework for Decision-making*, after which it disbanded. To facilitate the follow-up of the WCD recommendations, UNEP was requested by WCD stakeholders to host a successor institution. In 2001, UNEP initiated negotiations with the government of South Africa for a UNEP Dams and Development Unit to be based in Cape Town. The Dutch Government has catalysed the formation of a Consortium of UN agencies and partners to promote dialogue on water, food and the environment. This initiative is designed to, *inter alia* improve integrated management of water, environment and food production issues. The Dialogue strives to stimulate cross-sectoral dialogues at national and river basin level, improve the knowledge base on integrated water resources management solutions to achieving water and environmental security, and (3) learn from local action initiatives.

134. In line with the Governing Council Decisions, UNEP promoted the exchange and dissemination of information on sound-policy responses and cost-effective technologies, as well as experience and lessons learned at the sub-regional, regional and global levels, in the environmentally-sustainable management and use of freshwater resources. Considerable effort was made to facilitate discussions on best practice responses with regard to policy, institutional, legal and economic options for addressing environmental aspects of critical freshwater issues. The clearing house mechanisms, particularly of the GPA/LBA, the activities of the international environment technology centre and the UNEP Collaborating Centre, the Global International Assessment Programme – all generate and disseminate information on best practices. The agreement concluded by UNEP, the Government of Denmark and the Danish Hydrological Institute (regarding the activities of the UNEP Collaborating Centre on Water and the Environment) has facilitated collaboration with the Global Water Partnership in the area of best practices. Governments have now designated focal points in their relevant institution making it possible to draw on a wide range of available expertise in identifying best practice-responses to environment – related water issues at all levels.

#### UNEP/DGEF - International Waters Projects Portfolio

135. UNEP's role as one of the three implementing agencies contribute to the ability of the GEF and of countries to make informed strategic and operational decisions on scientific and technical issues in the GEF focal areas; to relate national and regional environmental priorities to the global environmental objectives of the GEF; to promote regional and multi-country co-operation to achieve global environmental benefits; and to promote specific technologies and demonstrate methodologies and policy tools that could be replicated on a larger scale by other partners.

136. As of September 2002, the UNEP-GEF portfolio in International Waters is estimated at US\$ 179 million, comprising 11 ongoing full size projects and 2 ongoing medium-sized projects. UNEP brings to the GEF International Waters portfolio a number of its comparative advantage including: Facilitation of the Environmental Action Plan of The New Partnership for Africa Development (NEPAD); Assistance to the African Process through a GEF Medium-sized Project; Developed guidelines for Integrated Coastal Area and River Basin Management (ICARM); Implementation of the Global International Waters Assessment (GIWA); Global Environment Monitoring System on water quality (GEMS/WATER); International contaminants agenda (POPs/PTS); River Basin Information System Initiative (RBIS).

137. In the GEF International Waters focal area, UNEP's projects aim at assisting countries to understand transboundary water related environmental concerns and the need to work together and to adopt an integrated approach to development and natural resources management, thus moving from sectoral approaches to an integrated "water-management" approach. The economic value of such integration, the importance of multi-country planning, and of the benefits that are to be derived from partnerships at all levels. UNEP-GEF projects are assisting in the implementation of the GPA; contributing to integrated freshwater-basin and coastal area management; contributing to the development of management tools for shared water-body management (both freshwater and marine), including Transboundary Diagnostic Analysis and Strategic Action Programmes. UNEP is also implementing strategic and demonstration projects addressing the problems of global contaminants. To assist the GEF and the international community prioritise water issues, UNEP is implementing the Global International Waters Assessment in response to a recognition by the Scientific and Technical Advisory Panel of the GEF (STAP) of the absence of an assessment of environmental transboundary problems in International Waters focal area.

138. UNEP collaborates closely with a number of institutions including: Secretariats of the Regional Seas Conventions, UN organizations (including the UN Food and Agricultural Organization - FAO and World Health Organisation - WHO), Inter-Governmental Organizations - IGOs (for example the Organization of American States) and Non-Governmental Organizations - NGOs (for example Land-Ocean Interactions in the Coastal Zones -LOICZ, and Advisory Committee on Protection of the Sea - ACOPS).

139. The existing UNEP/GEF projects largely belong to the following clusters: (i) Strategic assessment for GEF (The Global International Waters Assessment; and the Regionally-based Assessment of Persistent Toxic Substances); (ii) Addressing Degradation of Land and Freshwater (Addressing environmental

degradation in the Bermejo River Basin; Integrated Watershed Management Practices for the Upper Paraguay River Basin; Promoting Integrated Management of water resources and the sustainable development of the San Juan River Basin and its Coastal Zone.); (iii) Global Contaminants (Promoting phase out of DDT in Mexico and Central America; Reducing Pesticide Runoff in the Caribbean Sea); (iv) Supporting Demonstration Activities related to the GPA (Developing the Strategic Action Programme for the Mediterranean Sea; Integrated Management of land-based activities in the Sao Francisco Basin of Brazil; Protecting the Russian Arctic Marine Environment); (v) Protecting the Marine and Coastal Environment Reversing Environmental degradation trends in the South China Sea and Gulf of Thailand; Development and protection of the Coastal and Marine Environment in Sub-Saharan Africa).

140. The following UNEP/GEF Projects are being developed: Preparation of a Programme for the Protection of the Canary Current Large Marine Ecosystem (LME); Combating coastal area degradation and living resources depletion in the Guinea Current LME (GCLME) through regional actions (PDF B) jointly with UNDP; Integrated Management of the Volta River Basin (FP); Integrating Management of Watersheds and Coastal Areas in Small Island Developing States of the Caribbean (PDF B) jointly with UNDP; Addressing Land-Based Activities in the Western Indian Ocean (including TDA and SAP updates) (FP); Addressing Land-based Threats to the Lake Xingkai/Khanka Basin (PDF B); Integrated Coastal Area and River Basin Management in Southeast Asia (ICARM-SEA) (PDF B); A Regional Framework for the Sustainable Development and Management of Water Resources of the Plata River Basin (PDF B); Regional Strategy for Water Resources Management in the North-western Sahara Aquifer System (MSP); Water Resource Assessment and Development of a Strategy for Management of the Lullemeden Aquifer System (MSP).

#### UNEP, WSSD and Water

141. UNEP contributed significantly to the components of the section of the implementation plan relating to the protection and management of the natural resource base which includes freshwater, coastal and marine issues. The implementation plan of the WSSD contains commitments to the GPA, reporting and assessment of the state and the marine environment (which was the subject of a UNEP/GC21/13 decision, integrated freshwater management, innovative technologies, regional seas programme – all of which are key elements in the UNEP water policy and strategy). The agreed goals and targets in the implementation plan of the WSSD include the following: Halve by 2015 the proportion of people without safe drinking water and access to sanitation; develop integrated water resources management and water efficiency plans by 2005; establish marine protected areas and networks by 2012 through, *inter alia*, the integration of marine and coastal areas management; establish by 2004 a regular process under the UN for global reporting and assessment; reduce and prevent waste and pollution by undertaking before 2004 initiatives aimed at implementing the GPA in SIDS. At the high level segment of the WSSD, a number of commitments were made relating to the water sector including the following: US\$970 million by the USA in investment projects relating to water and sanitation; EU Global Initiative on Water and 21 other water and sanitation initiatives representing over US\$20 million dollars.

#### UNEP and the UN Secretary-General's Initiative on WEHAB (Water, Energy, Health, Agriculture and Biodiversity)

142. The WEHAB initiative was proposed by the UN Secretary-General as a contribution to the WSSD. It seeks to provide focus and impetus to action in the five key thematic areas mentioned above that are integral to a coherent international approach to the implementation of sustainable development. The WEHAB initiative also responds to UNGA resolution 55/199 which decided that the Summit should focus on areas where further efforts are needed implement Agenda 21. UNGA 56/226 on the WSSD also encouraged new initiatives that will contribute the full implementation of Agenda 21 and the other outcome of UNCED by strengthening commitments at all levels. The core team entrusted with responsibility for preparing the documentation on WEHAB consisted of a number of agencies including UNEP. The contributions of UNEP and its Executive Director were acknowledged in the documents submitted to the WSSD. The WEHAB initiatives and its water components are part of the key policy issues for the environmentally policies of

water by the Executive Director as foreseen in UNEP GC21/11. [Further information on the WEHAB initiative is found in document UNEP/GC.22/INF/28.](#)

143. Further co-ordination will be ensured in the UN Millennium Project Task Force on Water and Sanitation, established to facilitate concerted UN- wide activities in achieving the Millennium Development Goals and WSSD targets on water and sanitation, including integrated water resources management, monitoring and reporting, as well as contributing to other relevant Millennium development themes such as health, food and poverty.

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