



**Governing Council
of the United Nations
Environment Programme**



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GLOBAL MINISTERIAL ENVIRONMENT FORUM

POLICY ISSUES: STATE OF THE ENVIRONMENT

**CONTRIBUTION TO FUTURE SESSIONS OF THE COMMISSION
ON SUSTAINABLE DEVELOPMENT**

State of the global environment and contribution of the United Nations
Environment Programme to addressing environmental challenges

Report of the Executive Director

Addendum

Water policy and strategy of the United Nations Environment Programme

The annex to the present note contains the refined water policy and strategy of the United Nations Environment Programme (UNEP), which has been prepared in pursuance of Governing Council decision SS.VI/2 of 31 May 2000, on activities of the United Nations Environment Programme, following consultations with the Committee of Permanent Representatives. It is submitted herewith for the Council's consideration.

* UNEP/GC.21/1.

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Suggested action by the Governing Council

The Governing Council might wish to consider adopting a decision on the water policy and strategy of UNEP along the following lines:

The Governing Council,

Recalling its decisions 19/14 D of 7 February 1997, SS.V/4 of 22 May 1998, 20/25 of 5 February 1999 and SS.VI/2 of 31 May 2000,

- (a) Takes note of the report of the Executive Director on the work of the United Nations Environment Programme on water issues related to Governing Council decisions 20/25 and SS.VI/2 (UNEP/GC.21/2/Add.1);
- (b) Further takes note of the refined water policy and strategy of the United Nations Environment Programme (UNEP/GC.21/2/Add.1, annex);
- (c) Welcomes the refined water policy and strategy enhancing the focus of the work of the United Nations Environment Programme on the environmental aspects of sustainable development and integrated management of water in accordance with national needs;
- (d) Expresses its appreciation to the Executive Director for the measures taken to implement Governing Council decisions 20/25 and SS.VI/2;
- (e) Also expresses its appreciation to the Executive Director for the four progress reports submitted to the Committee of Permanent Representatives, on, first, the Global International Waters Assessment; second, the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities; third, the regional seas conventions; and, fourth, the water activities of the International Environmental Technology Centre;
- (f) Further expresses its appreciation for the establishment of an expert group on exchange of information on best practices in freshwater management;
- (g) Stresses the role of the United Nations Environment Programme in the environmental aspects of sustainable development and integrated management of water;
- (h) Decides that the United Nations Environment Programme, within its mandate, and taking into account national priorities, should place high priority on the identification of national expertise and knowledge relating to the environmental aspects of water, the establishment of partnerships between countries possessing and countries in need of that expertise and knowledge, and the promotion of intergovernmental collaboration;
- (i) Requests the Executive Director to intensify collaborative activities with Governments, upon request, as well as agencies and organizations both inside and outside the United Nations system, in furtherance of the implementation of the refined water policy and strategy of the United Nations Environment Programme;
- (j) Also requests the Executive Director to take the necessary measures for the continued implementation of the refined water policy and strategy of the United Nations Environment Programme, in keeping with the mandate of the Programme and the priorities outlined in Governing Council decisions and in line with the relevant chapters of Agenda 21;
- (k) Also requests the Executive Director to ensure that a review is conducted of the refined water policy and strategy of the United Nations Environment Programme at the twenty-second session of the Governing Council/Global Ministerial Environment Forum in 2003;

(l) Also requests the Executive Director to identify key policy issues for the environmental aspects of water, arising from the activities undertaken by the United Nations Environment Programme in line with the decisions of the Commission on Sustainable Development, the Nairobi and Malmö declarations and the outcome of the comprehensive review of the implementation of Agenda 21, and to propose policy options for debate and endorsement by the Governing Council at its twenty-second session/Global Ministerial Environment Forum;

(m) Also requests the Executive Director to ensure that the United Nations Environment Programme, when undertaking its activities related to the environmental aspects of water, takes into account the work carried out by other United Nations agencies and international organizations as well as by national Governments;

(n) Also requests the Executive Director to promote the transfer of environmentally sound technologies for water management through the International Environmental Technology Centre;

(o) Further requests the Executive Director to report to it at its twenty-second session on progress in the implementation of the present decision and in related environmental issues.

WATER POLICY AND STRATEGY OF THE UNITED NATIONS
ENVIRONMENT PROGRAMME

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Introduction

1. Notwithstanding the considerable efforts made by many Governments, international and national organizations and agencies in tackling priority water-related problems, the latest report in the UNEP Global Environment Outlook series, (GEO 2000), demonstrates that there are still major weaknesses and gaps to be filled in this undertaking.
2. As reported in GEO 2000, leading scientists around the world identified major water-related problem areas as: freshwater stress and scarcity (including water conflicts); poor freshwater quality; coastal and marine pollution; habitat degradation; overfishing; inadequate protection of aquatic biological diversity; and the degradation of coastal areas.
3. Clearly UNEP cannot by itself address all freshwater, coastal and marine environment problems. Nor can any single United Nations organization or Government. This task will require serious coordination and collaboration among all relevant stakeholders, each capitalizing on its comparative advantage. These relevant stakeholders include all United Nations organizations, national Governments, water management institutions, regional and subregional intergovernmental bodies, international organizations and multilateral and bilateral donors.
4. Freshwater problems centre on two key issues: quantity and quality. Issues of quantity involve both shortage (drought and overuse) and excess (floods), both of which affect, and are affected by, environmental management. The magnitude and severity of these problems varies from region to region and between years. The global trend, however, is towards a decrease in freshwater availability for both human uses and the environment, caused by increasing demand — demand that reflects population growth, technological factors and increased economic activity. The situation is further exacerbated by the increasing competition for available water within and between countries.
5. Issues of quality concern the pollution of water bodies to the degree that the use of such bodies is restricted. Typical problems include sickness in human populations and ecosystem damage. Such ecosystem damage often results in a combination of negative environmental, economic and social impacts.
6. Food production places a high demand on water. Between 70 and 80 per cent ^{1/} of current water withdrawals are for irrigation. A large percentage of water used in agricultural irrigation is wasted. The diversion of an ever larger proportion of the world's surface and groundwater resources to human use is resulting in severe environmental problems, including increased desertification, land degradation, loss of soil fertility and loss of productive wetlands, flood plains and aquatic habitats.
7. Recent estimates suggest that 15 per cent ^{2/} of the Earth's land area has been degraded by human activities: 55.7 per cent of this land has been degraded by water erosion, 28 per cent by wind erosion, 12.1 per cent by chemical means (loss of nutrients, salinization, pollution and acidification), and 4.2 per cent by physical means (compaction, waterlogging and subsidence). Poor land use practices result in enhanced sediment loads and nutrient inputs, causing degradation of freshwater and coastal aquatic habitats and ecosystems. It is estimated that a very large number — measuring millions — of people currently suffering from food shortages live in the water-scarce regions of the world. If current trends continue, food aid in terms of subsidized or free food might have to increase several times over current levels. Regional water scarcity will thus have far-reaching consequences on a global scale.

^{1/} The Commission on Sustainable Development Comprehensive Assessment of the Freshwater Resources of the World (1997), Report of the United Nations Security Council, page 5.

^{2/} All figures in this paragraph taken from: Mostafa K. Tolba, Saving our Planet: Challenges and Hopes (1992), page 59.

8. Increasing numbers of small island developing States are facing water scarcity. Drought, sea level rise and natural disasters such as cyclones, hurricanes, volcanoes and earthquakes all have a profound impact on water in such States. In addition, the economies of many such States are dominated by agriculture and tourism. The former causes degradation of water resources by agrochemicals; the latter uses inordinate quantities of freshwater. Land-based sources of pollution and waste-water discharges from hotels, which are increasingly in the 1,000-room range, are despoiling the reefs and oceans on which these islands' economies significantly depend.

9. Increased urbanization has placed unsupportable loads on water use and water supply infrastructure, especially in the larger cities of the developing world. In meeting the water supply needs of their expanding populations, especially the urban poor, mega-cities have to cope with intense competition from agriculture and industry. The shortage of clean water in large cities has further exacerbated the allocation of water between agriculture and domestic consumers, not just in terms of water itself but also in terms of the funds invested to supply water. Mega-cities also have to tackle the increasing pollution of their freshwater sources by ever growing volumes of urban waste and the increasing environmental risks posed by the over-abstraction of groundwater resources, inadequate drainage and floods.

10. Increasingly, water-related environmental problems are becoming international in scope as local pollution problems spread across borders, under the pressure of population growth, increased fertilizer and pesticide use, more industries, and inadequate pollution controls. In addition, long-range transport mechanisms contaminate water bodies at a distance from the source and subsidized and overcapitalized fishing fleets are chasing declining stocks of transboundary and migratory fish stocks. Water supply problems relating to both quantity and quality have been, and continue to be, a source of contention.

11. There are three priority marine-related issues and problems. The first is overfishing and the use of destructive fishing gear. The second is the loss and degradation of highly productive ecosystems in the transition zone between land and ocean due to increasing ribbon development along coastlines. The third is the deteriorating quality of coastal water, resulting from increased volumes of contaminants discharged directly and indirectly via surface and groundwater.

12. The environmental problems of the oceans and coastal areas stem in large part from land-based activities and the long-distance transport of contaminants by atmospheric and biological processes, with the consequence that no part of the ocean is immune from human impacts. Some 80 per cent ^{3/} of pollution loads in the ocean originate from land-based activities. These include municipal, industrial and agricultural waste and run-off and atmospheric deposition. These contaminants affect the most productive areas of the marine environment — estuaries and near-shore coastal waters.

13. The marine environment is also threatened by physical alterations of the coastal zone, including destruction of habitats of vital importance in maintaining marine ecosystems. Given all these factors, it is vital that the linkages between integrated approaches to the management of river basins and coastal and marine environments be recognized and properly exploited. Integrated coastal area management includes physical planning and the sustainable development of coastal areas to prevent the environmental degradation of coastal ecosystems.

14. The consequences of unsustainable water use are felt in many different sectors. These multisectoral effects are evidence, in turn, of the interlinkages and dependencies between different activities and sectors. For example, unsustainable water use has negative implications for food production, human health and biological diversity. While some commentators perceive a conflict between environmental protection and human use, without environmentally sustainable water use the quantity and quality of the resource itself is degraded and the economic and social benefits of water are reduced or even lost.

^{3/} Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (1999), page 1.

I. MANDATE, OBJECTIVES AND ROLE OF UNEP

15. The role and mandate of UNEP are to be found in the resolutions of the United Nations General Assembly and decisions of the Governing Council, which provide the legislative authority for the development of the UNEP water policy and strategy. The Nairobi Declaration on the Role and Mandate of UNEP, adopted in February 1997, refocused this mandate.

16. In the decisions it adopted at its nineteenth and twentieth sessions, the Governing Council accorded particular attention to a review of the role of UNEP in freshwater, coastal and marine issues. The decisions and recommendations of the 1972 Stockholm Conference on the Human Environment and the 1992 United Nations Conference on Environment and Development — the Earth Summit — also provided important inspiration for the UNEP water policy and strategy.

17. Most UNEP activities relevant to the environmental management of freshwater, marine and coastal issues that predate the adoption of Agenda 21 were recognized and endorsed by the Earth Summit as contributing to the implementation of Agenda 21. In chapters 17 and 18 of Agenda 21, specific priorities for action are outlined for managing freshwater, marine and coastal resources.

18. As emphasized in chapter 38 of Agenda 21, a key objective to be pursued by UNEP within the United Nations system is the provision of policy guidance and coordination in the field of the environment. This entails the major responsibility of facilitating the integration of the environmental aspects of social and economic development into policy discussions involving freshwater issues. In pursuit of this goal, UNEP accords high priority in its activities to the protection, conservation and more efficient use of freshwater resources, both for human survival and for the maintenance and protection of ecosystems of value to humans. Priority areas for UNEP include the provision of technical, legal and institutional advice to Governments, upon request, in establishing and enhancing their national legal and institutional frameworks. These priorities have guided and will continue to guide the development and implementation of the UNEP water policy and strategy.

19. In the context of this extensive legislative authority, UNEP's strategic approaches to the issue of water, in the context of the environment, include:

- (a) Filling the information and knowledge gap on critical freshwater, coastal and marine issues through a more comprehensive assessment process;
- (b) Providing forums for intergovernmental policy dialogue and information exchange on issues relating to freshwater and the coastal and marine environment;
- (c) Monitoring, reviewing and analysing freshwater, coastal and marine issues;
- (d) Identifying and promoting the use of appropriate integrated policy measures in tackling the root causes of major freshwater, coastal and marine environmental concerns;
- (e) Promoting cooperative actions for the protection, rational use and development of freshwater, coastal and marine resources;
- (f) Strengthening the process of consultations, coordination and networking and promoting dialogue with various stakeholders.

II. THE UNEP WATER POLICY AND STRATEGY

20. In response to the growing recognition of the potential severity of water-related environmental problems worldwide, the UNEP water policy and strategy will place considerable emphasis on addressing these problems in a holistic, integrated and coordinated manner.

21. At the same time, UNEP recognizes that it cannot by itself address all water issues effectively and fully. It has to focus and concentrate on selected targets and coordinate its environment work with the work of other international organizations, Governments and the private sector to ensure a properly holistic approach and effective and sustainable outcomes. It will also work with these partners, where appropriate, to encourage improved coordination of efforts to address water problems.

A. Goals

22. The following may be identified as the primary goals of the UNEP water strategy:

- (a) Achieving greater global understanding of freshwater, coastal and marine environments by conducting environmental assessments in priority areas;
- (b) Raising awareness of the importance and consequences of unsustainable water use;
- (c) Supporting the efforts of Governments in the preparation and implementation of integrated management of freshwater systems and their related coastal and marine environments;
- (d) Providing support for the preparation of integrated management plans and programmes for aquatic environmental hot spots, based on the assessment results;
- (e) Promoting the application by stakeholders of precautionary, preventive and anticipatory approaches.

B. Focal areas

23. In pursuit of these goals, the UNEP water strategy is concentrating on the following focal areas:

- (a) Freshwater scarcity and water conflicts between human activities and aquatic ecosystems;
- (b) Land-based sources of pollution and alteration of habitats, and their impacts on aquatic ecosystems;
- (c) Aquatic biological diversity, its functions and the benefits to be derived from a properly operating aquatic ecosystem, and the relationship of that ecosystem with fisheries and aquaculture;
- (d) Resource use and management planning in harmony with economic and social development;
- (e) Knowledge and technology transfer in integrated water management.

C. Expected outputs

24. Implementation of the UNEP water policy and strategy is designed to yield the following results:

- (a) Global assessments of major priority aquatic ecosystems (river and lake basins, large marine ecosystems, aquifers), with a view to developing appropriate policy responses;
- (b) Provision of environmental data for global assessment in cooperation with other organizations;
- (c) Diagnosis of priority freshwater environmental problems and their underlying causes;
- (d) Forecasting of the environmental consequences of freshwater scarcities;

- (e) Development of environmental management strategies and tools for land-based activities that affect the coastal and marine environment;
- (f) Active support for the development of agreed guidelines and programmatic approaches to existing regional mechanisms for the environmental assessment and management of freshwater, coastal and marine resources by relevant intergovernmental regional bodies, including regional seas and river basin organizations;
- (g) Evaluation, promotion and transfer of environmentally sound technologies and practices;
- (h) Greater awareness of the importance and consequences of unsustainable water use;
- (i) Assessment and development of policies, guide lines and management tools for environmentally sustainable integrated water management, plus the implementation of pilot projects to demonstrate their use;
- (j) Recommendation of guidelines and tools for environmentally sustainable water management for consideration by Governments and appropriate authorities and the possible implementation of pilot projects;
- (k) Fostering and developing new and innovative approaches and mechanisms for assessing and managing the aquatic environment and its associated resources.

III. KEY COMPONENTS OF THE UNEP WATER POLICY AND STRATEGY

25. The key components of the UNEP water policy and strategy — assessment, management and coordination — are considered in more detail In the following sections.

A. Assessing global water resources

1. Global International Waters Assessment

26. The main framework for UNEP assessment activities in the area of water is the Global International Waters Assessment (GIWA) exercise, which provides background and analytical information to help in the identification of priorities and formulation of appropriate policy responses to address the issues identified.

27. The lack of a comprehensive assessment of transboundary and other water bodies, both marine and freshwater, has been a serious impediment to the implementation of agreed actions. At the current time, there is no still firm basis on which to identify areas of global priority for intervention. Furthermore, many actions aimed at resolving environmental problems have failed to identify their geographical boundaries and their social root causes.

28. Existing assessment-related activities, such as those under the water programme of the Global Environment Monitoring System (GEMS/Water), will continue to provide information and data that will be used in the GIWA process. In addition, UNEP will review the structure of GEMS/Water with a view to aligning it more directly with current priorities and emerging issues. In its work, GIWA will make use of the regional seas networks and its expert groups dealing with marine pollution assessment. The outputs of GIWA will then be used to strengthen priority-setting within the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and in the revitalization of the regional seas conventions and action plans.

(a) Mandate, objectives and role of GIWA

29. GIWA is executed by UNEP, with the support of the implementing agencies of the Global Environment Facility (GEF) and other partners and stakeholders. In order to avoid duplication of efforts, GIWA makes full use of existing assessments and all other available information. Work is under way to develop cooperation and linkages with all relevant international and national organizations.

30. The ultimate goal of GIWA is to provide Governments, decision makers and funding agencies with a quantitative, scientifically accurate identification and assessment of environment-related water issues in subregions around the world. This will facilitate the identification of priorities by GEF and its partners for remedial and mitigatory actions in water bodies, thus enabling countries to manage their water resources in a sustainable manner.

31. Other aims of the GIWA process include the following:

(a) Serving as an effective mechanism for the exchange of water-related information generated through the various activities of Governments, the United Nations and its specialized agencies and other organizations;

(b) Facilitating the provision of expert inputs in terms of assessment, policies and strategies;

(c) Bridging the traditional separation between freshwater and seawater assessments, through a stronger focus on marine areas and their freshwater drainage basins;

(d) Providing basic and currently unavailable information to policy makers, managers and the public, so as to foster a greater understanding of the severity of environmental problems in transboundary waters, their social causes and the options available for solving them.

(b) GIWA work plan and strategy

32. GIWA is being implemented in four phases, the main components of which are as described below:

(a) Phase one covers the development of the GIWA methodology and entails the establishment of the GIWA network, comprising national experts and institutions, regional and global collaborating bodies, GIWA coordinators (focal points and task teams, etc.), organized around the geographical units of assessment, namely, 66 subregions and nine major regions, or megaregions;

(b) Phase two (the analytical phase) involves gathering and analysing the information necessary for applying the GIWA assessment protocol at the subregional level;

(c) Phase three (the predictive and policy options analysis phase) comprises work on scenario development and policy options analysis;

(d) Phase four (the dissemination phase) concentrates on the preparation and dissemination of the global and regional GIWA products, such as reports, reviews, databases, etc., that are easily comprehensible to different sectors of society.

(c) Expected outputs of GIWA

33. The main outputs of GIWA will include the Global International Waters Assessment itself, a comprehensive report comparable to the global assessments on biodiversity, climate change and the stratospheric ozone layer.

34. Other outputs will include the following:

- (a) A GIWA assessment protocol, including an agreed methodology for conducting causal chain analyses to examine the social causes of water-related environmental problems;
- (b) A methodology for making diagnostic analyses on a regional scale;
- (c) Sixty-six subregional and nine megaregional reviews of the ecological status of transboundary and other waters, as well as major environment-related water issues, including analyses of their social causes;
- (d) Megaregional and subregional scenarios for the future state of transboundary waters, based on planning boundaries, trends and rates of changes in industrialization, population growth and development;
- (e) A global analysis of the social causes of identified major environmental water-related concerns, principal issues and effective policy responses.

2. Other assessment activities

35. GEMS/Water is the only global freshwater water quality monitoring and assessment programme within the United Nations system. GIWA needs water quality data for its comprehensive assessment purposes, and the data which GEMS/Water collects are relevant to the GIWA assessments. Modalities for obtaining better spatial coverage and the selection of parameters included in the global GEMS/Water database are currently under review in the light of the requirements of GIWA and the Global Programme of Action.

36. UNEP is working to ensure that all freshwater monitoring and assessment efforts are integrated and coordinated, so as to meet the overall goals of GIWA.

B. Managing global water resources

1. The regional seas programme

37. The UNEP regional seas programme was created in 1974 as a global programme implemented through regional components. It covers 14 regions around the world, ^{4/} and more than 140 coastal States and territories participate in the programme. Most of the regional seas conventions fall under the legislative authority of their contracting parties or intergovernmental meetings and are implemented through periodically revised action plans adopted by high-level intergovernmental meetings.

38. These regional agreements and conventions and their related protocols and action plans have been most effective in engaging Governments in efforts to protect the coastal and marine environment. They provide comprehensive coverage of issues ranging from chemical wastes and integrated approaches to the management of coastal areas to the conservation and management of marine living resources and ecosystems. In July 1999, in response to the recommendations of Governments for the revitalization of the regional seas programme, UNEP organized a second global meeting of regional seas conventions, which agreed on a series of measures for strengthening these instruments.

^{4/} United Nations Environment Programme, Progress report on the implementation of the Regional Seas Component of the UNEP Water Policy and Strategy, submitted to the Committee of Permanent Representatives, August 2000.

(a) Mandate, objectives and role of the regional seas programme

39. The mandate granted to UNEP to deal with oceans and coastal areas may be found in the relevant decisions of the 1972 Stockholm Conference on the Human Environment and the 1992 United Nations Conference on Environment and Development. The policy framework for its work in this field is contained in Governing Council decision 20/19 A of 5 February 1999, on oceans and seas. Of paramount importance in this decision was the call for UNEP to strengthen the regional seas conventions and action plans as the central mechanism for the implementation of activities relevant to chapter 17 of Agenda 21.

40. In pursuit of this goal, UNEP is undertaking a series of measures along the lines set out in Governing Council decision 20/18 B of 5 February 1999, on strengthening the role of UNEP in promoting collaboration among multilateral environmental conventions and in providing programmatic support to multilateral environmental conventions. UNEP is also promoting and facilitating collaboration between the regional seas conventions and action plans on the one hand and, on the other, relevant global environmental conventions and agreements in areas of common concern.

41. The overarching objectives of the regional seas conventions and action plans include:

(a) Promoting the integrated management and sustainable development of marine and coastal areas and associated river basins and their living aquatic resources;

(b) Promoting the implementation of appropriate technical, institutional, administrative and legal measures for the improved protection of the coastal and marine environment;

(c) Facilitating assessments of the coastal and marine environment, including their conditions and trends.

42. The regional seas conventions and action plans are action-oriented programmes that focus not only on mitigating or eliminating the consequences of environmental degradation, but also on its causes. A comprehensive, integrated, results-oriented approach is adopted to combat environmental problems through the sustainable management of marine and coastal areas.

(b) Work plan and strategy of the regional seas programme

43. The Governing Council has called for the revitalization and strengthening of the regional seas conventions and action plans. The UNEP water policy and strategy provide a framework for achieving these objectives.

44. First, UNEP provides strategic programmatic support to the work plans of regional seas conventions and action plans, particularly in their interface with the priorities of the UNEP programme of work. To this end, the regional seas programmes are expected to play a key role in the implementation of GIWA, the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, the Programme of Action for the Sustainable Development of Small Island Developing States and the International Coral Reef Initiative (ICRI). Special attention is being given to strengthening the regional seas conventions in the African region, specifically the Abidjan and Nairobi conventions.

45. Second, UNEP is promoting and facilitating horizontal cooperation, or twinning, between the more developed regional seas conventions and action plans and those that are less developed.

46. Third, UNEP is assisting the financially weaker regional seas programmes to explore and identify innovative funding approaches.

(c) Expected outputs of the regional seas programme

47. The main output is expected to be a revitalized regional seas programme that takes into account specific challenges in the respective regions.

48. Other anticipated outputs include:

- (a) Revitalization of some of the regional seas conventions, with a view to making them more effective;
- (b) Strengthened linkages with the Global Programme of Action;
- (c) Integration of the priorities of the regional seas programme in the GIWA work plan;
- (d) Closer collaboration between the regional seas conventions and relevant global conventions;
- (e) Promotion of horizontal cooperation between and among the regional seas conventions and action plans.

2. Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

49. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, which was established in 1995, is the primary mechanism for concentrating UNEP management efforts in strengthening regional and national efforts to tackle what is perhaps the most important threat to the marine environment: the flow of chemicals, all forms of waste and other pollutants into the sea via the air, rivers and coastal activities.

50. Approximately 80 per cent of marine pollution originates from land-based activities. ^{5/} The UNEP report GEO-2000 indicates that more than a third of the world's population lives within 100 kilometres of the seashore. ^{6/} It is estimated that 60 per cent of cities with populations of 2 million or above are coastal cities. The health and well-being of coastal populations depend on the health and well-being of coastal systems, which include near-shore waters, estuaries and wetlands, and their associated drainage basins. Human pressure is negatively affecting these habitats through pollution and physical alteration.

51. The Global Programme of Action (<http://www.gpa.unep.org>) sets the goals and priorities for UNEP activities with regard to the management of the coastal and marine environment. The continuing revitalization of the regional seas conventions and action plans will render the Global Programme of Action more effective, as these conventions and action plans provide an overarching context for the implementation of the guidelines and other activities emanating from the Global Programme of Action.

(a) Mandate, objectives and role of the Global Programme of Action

52. Governments adopted the Global Programme of Action and the Washington Declaration on Protection of the Marine Environment from Land-based Activities in 1995. They also designated UNEP as the secretariat for the Global Programme of Action. As such, the role of UNEP includes the following:

^{5/} Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (1999), page 1.

^{6/} United Nations Environment Programme, Global Environment Outlook 2000, page 44.

(a) To promote and facilitate the implementation of the Global Programme of Action at the national, subregional and regional levels, in particular through the revitalization of the regional seas conventions and action plans;

(b) To catalyse the implementation of the Global Programme of Action at the international level by United Nations organizations, development banks, GEF and other relevant entities;

(c) To review progress in the implementation of the Global Programme of Action;

(d) To promote the exchange of experience between regions, particularly through the establishment and operation of a clearing-house mechanism under the Global Programme of Action;

(e) To consider the need for international rules and recommended practices and procedures to further the objectives of the Global Programme of Action.

53. The policy objective related to the Global Programme of Action and stated in Agenda 21 is "to prevent, reduce and control degradation of the marine environment so as to maintain and improve its life support and productive capacities".

54. Agenda 21 states that, to achieve this policy objective, the following, *inter alia*, are required:

(a) Application of preventive, precautionary and anticipatory approaches;

(b) Prior assessment of activities that may have significant adverse impacts on the marine environment;

(c) Integration of the protection of the marine environment into relevant general environmental, social and economic development policies;

(d) Development of economic incentives;

(e) Application of clean technologies;

(f) Internalization of environmental costs through, for example, the "polluter pays" principle;

(g) Improvement of the living standards of coastal populations, particularly in developing countries.

55. The Global Programme of Action, which was adopted by 108 Governments, translates this overall policy objective into national, regional and global objectives, and specifies what needs to be done to address the different pollutant source categories and physical degradation of coastal and marine ecosystems, namely:

(a) At the national level, to develop comprehensive, continuing and adaptive programmes of action within the framework of integrated coastal management, harmonized with river basin management and land use plans;

(b) At the regional level, to strengthen and, where necessary, create new regional cooperative arrangements and joint actions to support effective action, strategies and programmes at the national and local levels.

(b) Work plan and strategy of the Global Plan of Action

56. To implement the role of UNEP as the secretariat of the Global Programme of Action, three clusters of activities will be implemented in 2000 and 2001. The strategy will be revised in 2001, on the basis of the

outcome of an intergovernmental review process. The three activity clusters are mutually supportive and part of a cyclical process:

- (a) Analysis for action;
- (b) Mobilizing action at the national, regional and global levels;
- (c) Evaluation and further development of the Global Programme of Action.

57. Analysis for action comprises two components: first, finalizing the publications emanating from the first phase of the work programme of the Global Programme of Action (regional workshops of government-designated experts); second, providing targeted analyses as a contribution to GIWA — which will in turn also benefit the Global Programme of Action, as well as efforts to mobilize action at the national, regional and global levels.

58. The outputs and performance indicators will include regional overviews, a global assessment of land-based activities, a review of major marine issues, an analysis of the benefits of action by stakeholders and the opportunities for further such action, an analysis of the factors contributing to policy successes and failures of policy, and a consideration of possible financial and economic responses.

59. Efforts to mobilize action at the national, regional and global levels include:

- (a) Promoting non-binding and binding agreements on land-based activities, particularly in the context of the regional seas. The non-binding agreements involve Governments and the private and public sectors; binding legal agreements are in the form of treaties, protocols, etc.;
- (b) Mobilizing action at the national and regional levels, particularly within the framework of regional conventions and action plans. This also includes frameworks for action approved by Governments, GEF projects related to the Global Programme of Action, capacity-building through such measures as twinning arrangements within the context of the regional seas conventions, and the brokering of funding arrangements for specific action;
- (c) Better global coordination in the implementation of the Global Programme of Action, with a view to promoting cooperation with all parties concerned, including within the framework of the Administrative Committee on Coordination's subcommittees on oceans and coastal areas and on water resources, the global ocean governance process and other global and regional coordination mechanisms, as appropriate.

(c) Expected outputs of the Global Programme of Action

60. By taking into account developments, including new and emerging issues, since its adoption in 1995, the 2000 evaluation of the Global Programme of Action is expected to strengthen the Programme still further. As mentioned above, the Global Programme of Action is implemented primarily by national Governments. At the same time, international institutes and organizations, non-governmental organizations, convention secretariats, regional seas bodies and — it is to be hoped — the private sector will also contribute to its implementation.

61. UNEP provides secretariat services for the implementation of the Global Programme of Action by different stakeholders. Major areas of concentration include developing overviews on how different stakeholders can implement the Programme and the further development of the Programme. A significant opportunity for this will be provided by the first intergovernmental review process planned for 2001.

62. The outputs and performance indicators will include regular overviews of the implementation of the Global Programme of Action by different partners and preparing and holding the first intergovernmental review meeting in 2001.

63. During 2000 and 2001, the activities of the Coordination Office will focus on the implementation of the strategic action plan on municipal wastewater, the preparation of the first review of the Global Programme of Action and the development of the Programme's clearing-house mechanism.

3. Freshwater

64. Water resources are essential for satisfying human needs, protecting health, and ensuring food production, energy and the restoration and maintenance of ecosystems, as well as for social and economic development in general, and also for sustainable agricultural development.

65. The quantity and quality of, demand for and supply of freshwater remain critical issues as we move forward into the twenty-first century. The provision of an adequate supply of safe and clean water is regarded as the most important precondition for sustaining human life, for maintaining ecosystems that support all life, and for achieving sustainable development.

66. To complement the work of the Global Programme of Action in the area of the marine environment, and to promote comprehensive coverage, the UNEP water policy and strategy will take into consideration related freshwater issues within its mandate. It recognizes that growing competition for water within and among countries can be a threat to social, environmental and economic security. At least 214 river basins constitute boundaries between countries. ^{7/} UNEP has an important role to play in promoting cooperation among riparian States and concerned coastal States and, at the request of all affected States, in the field of water-related environmental problems.

67. As demands on freshwater increase, and in the absence of mechanisms to arrive at a clear consensus on how best to use finite water resources for the benefit of all, competition for these resources risks erupting into acrimonious disputes. There are already many areas that could experience conflict as a result of unequal distribution of or access to water.

68. At the second meeting of the UNEP High-Level Committee of Ministers and Officials, Governments agreed that UNEP should play a vital role in providing substantive environmental inputs into freshwater issues. At its fifth special session, the Governing Council reiterated this view, directing UNEP to enhance its role in the environmental aspects of the sustainable management of freshwater.

(a) Mandate, objectives and role of UNEP in the area of freshwater

69. In its decision 6/1 on strategic approaches to freshwater management, the Commission on Sustainable Development reinforced the environmental focus of UNEP, calling on it to collaborate with other members of the ACC Sub-committee on Water Resources by providing "technical and scientific advice on environmental aspects of the sustainable development of freshwater resources". As emphasized in chapter 38 of Agenda 21, a key objective to be pursued by UNEP within the United Nations system is the provision of policy guidance and coordination in the field of the environment.

70. As the logical follow-up to its assessment efforts, UNEP activities in integrated water management will focus on assisting Governments, on request, in addressing the water-related problems identified by GEO-2000, GIWA and other relevant investigations. UNEP accords particular attention to identifying water-related environmental problems — where they occur, how serious they are and what their causes are. UNEP can also assist Governments, particularly those of developing countries and countries with economies in transition, in tackling their freshwater issues by determining what can be done, who should do it and how it should be done in partnership with stakeholders.

^{7/} Mostafa K. Tolba, *Saving Our Planet: Challenges and Hopes*, (1992), page 50.

71. The UNEP Governing Council has 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) Cooperation 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;
- (l) Institutional strengthening.

72. Other areas requiring attention include:

- (a) Application of preventive, precautionary and anticipatory approaches;
- (b) Prior assessment of activities that may have significant adverse impacts on the freshwater environment, affecting both surface and groundwater;
- (c) Integration of the protection of freshwater environments and groundwater into relevant general environmental, social and economic development policies;
- (d) Contributing, on request, to the efforts of Governments in the development of economic incentives;
- (e) Contributing, on request, to the efforts of Governments in the development of legal instruments, including those for groundwater;
- (f) Application of clean technologies.

(b) Work plan and strategy of UNEP in the area of freshwater

73. The environmental aspects of freshwater resources touch on virtually all human and ecosystem needs. UNEP has an important role to play in assessing freshwater resources and, where appropriate, supporting the development of practical measures in cooperation with Governments to guarantee the health of the freshwater environment.

74. Accordingly, UNEP freshwater-related activities will include:

- (a) Assessing priority freshwater environmental issues to support human life and to maintain natural ecosystems;
- (b) Promoting the environmental dimension of freshwater management for sustainable development and fostering international cooperative action with a view to ensuring that freshwater systems are environmentally sustainable;
- (c) Analysing best practices in urban water management, including the appropriate management and reuse of stormwater and effluent and the conservation of water supplies;
- (d) Providing a forum for ministers and officials of member Governments to share expertise and analyse mechanisms for the application of best practices in all aspects of environmentally sound freshwater management, and to determine the economic benefits provided by freshwater ecosystems;
- (e) Assisting Governments in identifying effective and appropriate practices in public participation in achieving freshwater environmental management objectives;
- (f) Contributing, on request, to the efforts of Governments in analysing and developing environmental policies and instruments to sustain freshwater systems.

(c) Expected outputs of UNEP freshwater activities

75. It is hoped that the UNEP freshwater activities will result in a wide range of outputs, including the following:

- (a) Assessments and inventories of the environmental state of freshwater resources;
- (b) Contributions to the regional reviews of the implementation of chapter 18 of Agenda 21, including the analysis and identification of best practices;
- (c) Assessment, development and recommendation of innovative policies and strategies for sustainable freshwater use;
- (d) Guidelines on best practices and information on technological options for sustainable freshwater management;
- (e) Activities to raise awareness and improve education and the participation of the general public;
- (f) Pilot projects approved by all affected countries that test the effectiveness of these policies;
- (g) Various projects related to the GEF international waters portfolio.

(d) Technology transfer

76. Technology is a major tool in promoting the environmentally sound management of freshwater. The Rio Principles, Agenda 21 and decisions of the UNEP Governing Council and the Commission on Sustainable Development have all underscored the importance of appropriate technology and its transfer to developing countries. In this context, the development and promotion of local technologies should also be accorded due attention. These areas provide opportunities for cooperation between Governments, UNEP and relevant agencies.

77. Technology has a pivotal role to play in helping us to maintain and improve our environment. Technological skills and innovative approaches are required to reduce the generation of waste at source. Significant improvements are also necessary in waste-recycling and waste-treatment technologies. With regard to agriculture, improvements are necessary in irrigation efficiency. In addition, advances in biotechnology could play an important role in producing food using less water. Alternative and less costly sources of energy also need to be explored to reduce the cost of desalination.

78. Fortunately, there is an expanding environmental industry around the world capable of providing solutions rather than creating problems. UNEP supports the transfer of appropriate technology, especially in the areas of water management, and it is also providing advisory services to projects promoting cleaner production technologies. Governments in all regions have made substantial efforts to encourage industries to adopt cleaner production methods, with major successes in a number of countries.

79. Greater attention will be given to the use of local technologies which are more suitable for the specific conditions in the countries where they have been developed. The identification and analysis of the costs, effectiveness and strengths and limitations of alternative technologies constitute an important step in this direction. UNEP's International Environmental Technology Centre (IETC) has been playing and will continue to play — a major role in this subject area. UNEP will also conduct awareness-raising initiatives on technology development and transfer in the water sector.

(e) Economic dimension of sustainable water use

80. As we move forward into the twenty-first century, such phenomena as rapid industrialization, population growth and the emergence of mega-cities around the world are making increasing demands on water resources that exceed available supplies. In many parts of the world the human consumption of water is wasteful, owing, in part, to economic factors. In addition, the social aspects of the supply of sufficient water for human survival, poverty reduction and health improvement must be taken into consideration, particularly in the poorer parts of the world.

81. Experience with the application of such measures as the "polluter pays" principle, water pricing, water utility privatization and subsidies needs to be further examined. UNEP activities in these fields may, at the request of Governments, include capacity-building measures for integrated environmental and economic assessment.

82. One focus of UNEP activities is the protection and conservation of water-related ecosystems. While humans typically allocate water supplies solely on the basis of human water needs, water-related ecosystems provide a wide range of services to humans free of charge. These services include waste assimilation, nutrient recycling, water supply, water regulation, regulation of global cycles, etc. Accordingly, destroying or otherwise debilitating these water-related ecosystems will require humans to pay for these previously free services.

83. UNEP and relevant partners are joining forces to develop and refine the concept of ecosystem valuation, particularly with regard to transboundary water resources. This includes using such international forums as the environment and ecology component of the Global Water Partnership.

C. Environmental aspects of legal instruments and processes

84. UNEP will continue to support international instruments, in particular internationally binding agreements, in accordance with its mandate. It will also strengthen its role in this area by promoting and encouraging the conclusion of environmental agreements among riparian States that aim to safeguard and improve their ecological systems.

D. Public awareness

85. UNEP will undertake various public awareness, media and education activities to promote the sustainable management and use of the Earth's water resources. Policy-relevant documents on the environmental aspects of freshwater issues should be developed for use by Governments, to facilitate the incorporation of environmental considerations in sustainable social and economic development programmes.

E. Public-private partnerships

86. The past decade saw a considerable increase across the world in the number and scope of public-private partnerships in the water and sanitation sector. These range from the contracting out of selected activities to the complete sale of assets to the private sector. Issues such as the merits and demerits of different models of public-private partnerships, how they serve the poor, their current global use, and emerging trends remain to be explored. Better urban governance is crucial to water conservation and is increasingly becoming the subject of such partnerships.

F. Water desalination

87. It is now technically and economically feasible to generate large volumes of water of suitable purity through the desalination of seawater and brackish water, and through water reuse. Plants generating millions of litres a day have performed reliable delivery of water of high purity at progressively reduced costs.

G. Best practices

88. UNEP will promote 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. There is a need 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.

89. Partnerships will be 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.

IV. GLOBAL WATER RESOURCES: COORDINATION,
PARTNERSHIPS AND MOBILIZING ACTIONS

90. UNEP will provide strategic coordination for and help mobilize actions and partnerships at various levels. These efforts will involve work with Governments and partners to organize regional and subregional forums on a regular basis. The objective of these meetings will be the development of a common vision and perspectives on the priority freshwater issues within the mandate of UNEP. This will also enable government representatives and experts to provide policy inputs and advice on the full range of environmental and social and economic issues related to the sustainable use and management of freshwater, coastal and marine resources.

91. Such efforts could be strongly promoted through UNEP regional offices, and through its existing programmes and frameworks for regional cooperation. These include such UNEP-supported regional arrangements as the ministerial conferences on the environment, the regional seas programme and intergovernmental agreements on internationally shared waters. The regional seas conventions and action plans cover 14 regions ^{8/} and their intergovernmental bodies cooperate directly with UNEP in the development of programmes. A number of river and lake-basin organizations also participate in integrated river basin management programmes and the GEF international waters portfolio.

92. UNEP is taking part in the water-related activities of the United Nations System-wide Special Initiative on Africa, which is addressing the following key priorities:

- (a) Improving water management with a special focus on water-related assessments;
- (b) Ensuring effective water governance;
- (c) Meeting urgent water needs (household water security, water for food production and water for African cities).

93. As the agency within the United Nations system responsible for policy guidance and coordination in the field of the environment, UNEP will continue to work closely with the ACC Sub-Committee on Water Resources and its partner United Nations agencies to ensure that the relevant environmental perspectives inherent in these measures are fully considered in intergovernmental policy discussions on freshwater resources. The ACC Sub-Committee was designated as the task manager responsible for reporting on the implementation of chapter 18 of Agenda 21. In addition, UNEP supports the work of the ACC Sub-Committee on Oceans and Coastal Areas. As mentioned above, these sub-committees also perform an advisory and coordinating function with regard to the Global Programme of Action.

94. At the inter-agency level, a number of decisions adopted by the Inter-agency Committee on Sustainable Development and the Commission on Sustainable Development refer to the relationship between the Global Programme of Action and these sub-committees. A plan of action has been established and agreed upon with the chairs of the sub-committees to implement these decisions by April 2000. Inter-agency coordination is thus being ensured through existing mechanisms, as well as through the sessions of the Commission and the Committee. UNEP will also continue to collaborate with sister agencies within the framework of the Committee.

95. Where cooperation with relevant United Nations agencies is concerned, UNEP will strengthen relationships with key organizations such as the United Nations Centre for Human Settlements (UNCHS) (Habitat). The alliance between UNEP and UNCHS (Habitat) will be reinforced, in particular in the areas of water and sanitation and land-based sources of pollution, such as sewage. A joint water project is currently being implemented to assist African countries to establish early warning mechanisms to detect hot spots where sustainability is threatened and to help them deal with the growing ecological impacts of large cities on the continent's resources. Within the framework of the joint Sustainable Cities Programme, cities around the world are currently participating in the development of such measures as freshwater management strategies.

96. UNEP will also cooperate with the International Maritime Organization (IMO), the Food and Agriculture Organization of the United Nations (FAO) and the World Conservation Union (IUCN), in particular with regard to implementing the various protocols for the regional seas conventions and action plans. UNEP will also work closely with the United Nations Development Programme (UNDP) and the World Bank within the framework of GEF, with the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World

^{8/} United Nations Environment Programme, Progress report on the implementation of the Regional Seas Component of the UNEP Water Policy and Strategy, submitted to the Committee of Permanent Representatives, August 2000.

Meteorological Organization (WMO) and the International Council of Scientific Unions (ICSU) in global observing systems, and with the World Health Organization (WHO), WMO and UNESCO within the framework of GEMS/Water.

97. In addition, UNEP will continue its efforts to forge partnerships at the global level. This will include collaborating with existing international partnerships and mechanisms such as the World Water Council, the World Commission on Dams and the Global Water Partnership. UNEP will also work with relevant international financial institutions. This approach will enhance the leadership role of UNEP within the international community in efforts to address environmental aspects of water-related issues.

98. UNEP recognizes the importance of forging partnerships with non-governmental organizations, the scientific community and the private sector through a participatory approach. In its work in this area, UNEP will continue to take into consideration a range of different perspectives, with a view to harnessing long-term, broad-based support on water-related issues.

99. These mechanisms and arrangements will facilitate the implementation and periodic refinement of the UNEP water policy and strategy and also the monitoring of water-related issues. Emphasis will also be placed on the coordination of UNEP water-related activities at the regional level by making maximum use of UNEP outposted offices and regional mechanisms already in place. The role of UNEP in this regard includes fostering and brokering partnerships between Governments and major stakeholders.

100. Within UNEP, the Division of Policy Development and Law will coordinate in-house meetings on water-related policy issues. To help UNEP identify emerging environmental water issues and to provide independent policy advice on a continuous basis, the Executive Director will in due course establish a high-level advisory board for water-related issues.

V. MONITORING AND EVALUATING THE UNEP WATER POLICY AND STRATEGY

101. Regular reviews will be carried out to gauge progress made or needed in the stated objectives under the three main components of assessment, promotion of environmentally sound management and coordination by the Governing Council. Regional, intergovernmental and other forums will facilitate the conduct of continuous and systematic reviews.

102. Other more specific reviews will also be undertaken. The GIWA Steering Group will regularly review progress made or needed. The regional seas conventions, at their coordination meeting in The Hague in July 1999, agreed to keep under review efforts being made to strengthen the linkages between the freshwater, coastal and marine components of their activities. The evaluation and further development of the Global Programme of Action has begun and is expected to result in substantial positive outputs.

103. The status of implementation of the goals and objectives of chapter 18 of Agenda 21 will be kept under review by fostering intergovernmental dialogue. The purpose of this endeavour is to ensure that Governments and other relevant bodies and organizations inspire sound policy discussions and decisions on freshwater issues.
