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**Follow-up to the World Summit on Sustainable Development:
contribution of the United Nations Environment Programme to the
forthcoming session of the Commission on Sustainable Development**

**Background paper for the ministerial-level consultations: water,
sanitation and human settlements**

Discussion paper presented by the Executive Director

Summary

The present document is a background paper intended to stimulate discussion and highlight issues, of concern to Governments, to be addressed by ministers and heads of delegation during their Ministerial-level consultations at the eighth special session of the Governing Council/Global Ministerial Environment Forum.

* UNEP/GCSS.VIII/1.

I. Background

1. The third Global Environment Outlook (GEO) report, produced within the framework of the World Summit on Sustainable Development held in Johannesburg, South Africa, from 26 August to 4 September 2002, identifies the quantity (water scarcity) and quality (pollution) of water resources as one of the most critical issues requiring attention in the twenty-first century. Indeed, the quantity and quality of water influence human well-being in all its aspects: it has impacts, among other things, on ecosystem and human health, agricultural production, biodiversity, energy, development and the natural environment. In the light of the objectives of sustainable development, short-term sectoral management of groundwater, rivers, lakes, coastal areas and marine waters is no longer an option: increasingly, the urgent need to apply integrated and adaptive ecosystem-based approaches to the management of water, sanitation and human settlements is being recognized.
2. In its resolution 53/242 of 28 July 1999, the General Assembly established the Global Ministerial Environment Forum, which is the principal global forum of environment Ministers; its purpose is to review, at international, regional and national levels, important and emerging policy issues in the area of the environment.
3. The current session of the Governing Council/Global Ministerial Environment Forum is taking place at a crucial juncture in the development of international environmental and sustainable development policies. The World Summit on Sustainable Development marked the beginning of a process that focuses the sustainable development agenda on implementation, partnerships and coherent action on the ground. Implementation is the key imperative.
4. In addition, the current session of the Governing Council/Global Ministerial Environment Forum is taking place in the Asia and Pacific region, which was host to the important Third World Water Forum, held in Japan in March 2003. Many other international programmes, initiatives and forums address the centrality of water in their responses and follow-up to the World Summit on Sustainable Development.
5. The review conducted by the Governing Council/Global Ministerial Environmental Forum of important and emerging environmental issues is also being conducted while the international community is preparing for the twelfth session of the Commission on Sustainable Development. The United Nations Secretary-General will present to the Commission at its twelfth session a report on progress towards the implementation of the many commitments and targets of Agenda 21,¹ the Programme for the Further Implementation of Agenda 21,² and of the World Summit's Plan of Implementation,³ as they relate to the three thematic clusters of water, sanitation and human settlements. The Secretary-General's report will facilitate deliberations at the Commission's twelfth session on priority concerns, constraints and obstacles, and will also identify workable approaches for expediting the implementation of the social, economic and environmental commitments relating to water, sanitation and human settlements.
6. Within the context of this heightened and growing international determination to tackle the water crisis, the present discussion paper aims to stimulate ministerial dialogue on a number of water-related issues, which are enlarged upon in chapter IV below. The objective is to identify workable approaches, based on actual experiences, for expediting implementation of the goals of the United Nations Millennium Declaration⁴ and the World Summit on Sustainable Development commitments as these relate to the environmental aspects of water, sanitation and human settlements and the centrality of ecosystem approaches in water management.

¹ *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3–14 June 1992* (United Nations publication, Sales No.E.93.I.8 and corrigenda), vol. I: *Resolutions adopted by the Conference*, resolution 1, annexes I and II.

² General Assembly resolution S/19-2, annex.

³ *Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August–4 September 2002* (United Nations publication Sales No. E.03.II.A.1 and corrigendum), chap. I, resolution 2, annex.

⁴ General Assembly resolution 55/2.

7. To facilitate an interactive ministerial dialogue in this regard, indicative action items are provided in chapter IV below, under the following three categories: ecosystem approaches in integrated water resource management; water and sanitation; and water, health and poverty. The Ministers may wish to discuss them, augment them with realistic examples and make recommendations for the scaling up and wide application of best practices, based on experience acquired at home. The proposed categories – and indicative actions – are neither exhaustive nor mutually exclusive. Consideration may also be given to the interdependence of the various water issues, such as the interdependence of policies addressing human settlements, sanitation and poverty. Discussions may also be conducted on other policy issues.

8. Informal consultations were conducted, prior to finalizing the present document, with representatives of Governments and civil society. Consultations with the United Nations organizations were conducted within the framework of the Environmental Management Group (details are given in document UNEP/GCSS.VIII/INF/5). Close contact was maintained with the secretariat of the Commission on Sustainable Development. Those informal consultations have contributed to the selection of the proposed three categories and indicative action items. From the consultations, it also emerged, among other things, that assessment, capacity-building, technology transfer and changing unsustainable water consumption and production patterns were considered as cross-cutting issues. The Council/Forum might wish to enlarge on those cross-cutting issues under the three proposed categories mentioned in chapter IV below.

9. The deliberations of the current special session, complemented by the outcomes of the twenty-second session of the Governing Council insofar as they relate to water, will determine the contribution of the Governing Council/Global Ministerial Environment Forum and UNEP, among others, to the twelfth session of the Commission. The deliberations will contribute also to other international processes, initiatives and programmes relating to water, sanitation and human settlements.

II. Environmental water issues: setting the stage

10. It is estimated that in a few decades, approximately one third of the world's population will suffer from chronic water shortages. The reasons for those shortages will include the greater demands on freshwater resources by burgeoning human populations; expanding agricultural production and water-intensive industrial development; and the diminishing quality of water resources – fresh and marine alike – resulting from unsustainable human activity.

11. The concluding chapter of the United Nations World Water Development Report⁵ of the World Water Assessment Programme, to which UNEP contributed, states: “The water crisis is a crisis of governance ... The water sector remains seriously underfinanced ... Quite simply, sustainable development is not being achieved.”

12. For example, in the Asia and Pacific region, where the current special session is being held, recent meetings on water identified water scarcity and the low availability of freshwater per capita as two key issues. Biochemical oxygen demand in Asian rivers is estimated at 1.4 times the world average. About 2 billion people, nearly one third of the world's population, depend on groundwater supplies. How best to ensure equitable access to water for the poor and how to change the fragmented subsectoral approaches to water management are major concerns. Water development projects in the region have significant impacts on water ecosystems by eliminating marshes and wetlands, removing water for other uses, altering flows and contaminating water with industrial and human wastes.

13. The third Global Environment Outlook report,⁶ produced by UNEP, provides an overview of critical water issues. They are briefly listed in annex I below and include:

- (a) Growing pressures on the environment and natural resource base;

⁵ See <http://www.unesco.org/water/wwap/wwdr/index.shtml>. “*Water for People, Water for Life*” – United Nations World Water Development Report, UNESCO publishing/Berghahn Books, Paris, 2003, 576 pp., sales no. E.03.II.A.2.

⁶ See <http://www.unep.org/GEO/>. *Global Environment Outlook 3: Past, Present and Future Perspectives*, UNEP, Nairobi/Earthscan Publications Ltd., London/Sterling VA, USA, 2002, 459 pp.

- (b) Water and sanitation (also addressed in chapter IV below);
- (c) Water and human settlements;
- (d) Water quality;
- (e) Groundwater;
- (f) Transboundary waters;
- (g) Water and ecosystems (also addressed in chapter IV below);
- (h) Coastal and marine areas;
- (i) Irrigated agriculture;
- (j) Unsustainable production and consumption of water;
- (k) Poverty and water (also addressed in chapter IV below);
- (l) Extreme water events, including flooding and natural disasters;
- (m) Water governance and institutional issues.

14. The review papers, submitted by the Secretary General to the Commission on Sustainable Development at its twelfth session, to which UNEP contributed, provide additional information on the broader context on water, sanitation and human settlements.

15. Many of the above issues qualify for attention by the Council/Forum. In view of the time constraints and the imperatives arising from implementation of the World Summit on Sustainable Development commitments, however, it is proposed that the Council/Forum should focus its attention on a selected number of issues as enlarged upon in chapter IV below.

III. International policy responses

16. In response to the above-listed key environmental water issues, the international community has taken up the issue of water at several international conferences, and has identified critical actions to address the existing and emerging problems.

17. At its twenty-second session, the UNEP Governing Council also took up water issues. The documentation provided at that session, namely documents UNEP/GC.22/10/Add.3/Rev.1 (Implementing the outcomes of the World Summit on Sustainable Development: Water), UNEP/GC.22/2/Add.3 (Review of the water policy and strategy of UNEP: Key policy issues and policy options) and UNEP/GC.22/INF/35 (Measures for strengthening the freshwater component of the water policy and strategy) and the ensuing deliberations contributed to formulating the UNEP response to the water-related topics of the World Summit on Sustainable Development and to the elaboration of the present paper.

18. Key recommendations of major international meetings are briefly set out in annex II below, relating to the following meetings: the Millennium General Assembly; the First Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (November 2001); the Bonn International Conference on Freshwater (December 2001); the Monterrey Conference (March 2002); the World Summit on Sustainable Development (August 2002); the Twenty-second session of the Governing Council/Global Ministerial Environment Forum (February 2003); the Third World Water Forum (March 2003); the eleventh session of the Commission on Sustainable Development (April to May 2003); the G-8 Summit (June 2003); the Dushanbe International Fresh Water Forum (September 2003); the Stavanger Conference (November 2003); the Pan-African Implementation and Partnership Conference on Water

(December 2003); and the forthcoming international meeting to review the Barbados Plan of Action for the Sustainable Development of Small Island Developing States, to be held in Mauritius later this year (2004).

19. At its current special session, the Council/Forum might wish to build on the conclusions and recommendations of these major conferences, and the outcomes of the twenty-second session, in its deliberations on important and emerging policy issues in the field of water and sanitation. While these conferences successfully identified critical and emerging water priorities, comprehensively addressed the multitude of water issues, and charted the way forward, the imperatives pursuant upon implementation of the World Summit commitments dictate that the conclusions and recommendations of these conferences now need to be translated into specific action on the ground. Hence the proposed focus on a selected number of water-related issues and realistic action items.

IV. Proposals for the ministerial-level discussions

A. Introduction

20. *Focused discussions:* Given that there are many water issues that require considered attention by the international community, as mentioned in chapter II above, and recognizing that there are many recommendations, emerging from international conferences, that warrant further operationalization, as mentioned in chapter II above, it is proposed that, at its eighth special session, the Governing Council/Global Ministerial Environment Forum should pay particular attention to the environmental aspects of a selected number of international water issues under the three categories listed below. Focused discussions will permit Ministers to identify priority environmental concerns and constraints, as well as workable approaches to expedite implementation of the commitments of the goals of the United Nations Millennium Declaration and the World Summit on Sustainable Development as these relate to the environmental aspects of water, sanitation and human settlements. This will enrich and contribute to the high-level policy debates on sustainable development being conducted by the international community, including within the framework of the Commission on Sustainable Development.

21. The selected water issues suggested for the ministerial-level discussion relate in particular to three specific goals of the United Nations Millennium Declaration and targets of the World Summit on Sustainable Development:

- (a) Develop integrated water resources management and water efficiency plans by 2005;
- (b) (i) Halve, by the year 2015, the proportion of people without access to safe drinking water (reaffirmation of the goal of the United Nations Millennium Declaration);
- (ii) Halve, by the year 2015, the proportion of people who do not have access to basic sanitation;
- (c) Halve, by the year 2015, the proportion of the world's people whose income is less than \$1 a day and the proportion of people who suffer from hunger (re-affirmation of the goal of the United Nations Millennium Declaration).

22. *The purpose of the discussions:* In their deliberations, Ministers may wish to identify and recommend for wide application at the local, national and regional levels and by the international community (in particular, the forthcoming session of the Commission on Sustainable Development) practical measures and workable approaches:

- (a) That are based on actual experience;
- (b) That will enhance the implementation of the Millennium Declaration and a selected number of targets, commitments and goals of the World Summit on Sustainable Development; and
- (c) That can be replicated on a large scale.

23. *Implications for UNEP:* At its eighth special session, the Governing Council/Global Ministerial Environment Forum, after having identified the practical measures and workable approaches for consideration and wide application by international, national and local communities, programmes and forums, might also wish to consider their implications for UNEP, particularly as they relate to the further development of relevant UNEP programme, contributing to the water issues under discussion.

24. *Regional variations:* As underscored in the Plan of Implementation of the World Summit on Sustainable Development, recognition of the unique situation of each region is fundamental for assessing and addressing the significant challenges that humanity faces today, including poverty, unsustainable patterns of consumption and production and the degradation of the natural resource bases, including water. Solutions must be tailored to the needs of each region. Ministers may wish to highlight specific regional solutions, within a global framework, that are effective and have a real and positive impact on the environmental basis of people's lives in a globalizing world. The documentation provided under agenda item 4 of the eighth special session of the Governing Council/Global Ministerial Environment Forum details some of the critical water issues in the regions and may be useful to support the ministerial discussions.

B. Ecosystem approaches, in particular in IWRM

25. In their consultations during the eighth special session, Ministers might wish to consider how to promote the further use of ecosystem approaches for the purpose of attaining the IWRM target.

26. Among other things, and on the basis of actual experience, Ministers may wish to provide practical recommendations on:

- (a) Assessing the vulnerability and resilience of water ecosystems to cumulative anthropogenic and natural pressures;
- (b) Mitigating the impacts of urbanization on water ecosystems;
- (c) Managing environmental flows (e.g., ensuring minimum stream flow);
- (d) Linking the principles and practice of IWRM with integrated coastal zone management (ICZM);
- (e) Ensuring an environmentally sustainable water supply, including the transfer of best available technology in, among other things, rainwater harvesting and desalination.

27. Related issues that are also covered in section C and D below include:

- (a) Ensuring environmentally sustainable sanitation services, including the transfer of best available technology in, among other things, sewerage services, wastewater treatment and reuse;
- (b) Relieving pressures on ecosystems arising from poverty, such as the environmental impact of unregulated settlements, unregulated clearing of watersheds, and pressures on poverty arising from degraded ecosystems.

28. *Assessment:* Recognizing and assessing the vital role played by ecosystems in the water cycle is an important aspect of the IWRM plans that are to be prepared worldwide by 2005, in accordance with the Plan of Implementation of the World Summit on Sustainable Development. Frequently incorporating vast areas, multiple jurisdictions and diverse activities associated with human activities, water-related ecosystems are subject to cumulative pressures, the symptoms of which often appear far removed from their cause. Efforts are needed to protect the ecological integrity of water ecosystems through, among other things, the establishment and application of timely and effective environmental impact assessments and environmental quality objectives both for freshwater systems, and for their receiving coastal and marine waters.

29. *Urbanization*: The effect of urbanization on water ecosystems is considerable, including in the coastal zones, where a large proportion of the world's population lives and where most megacities are situated. Urbanization can decrease natural water absorption rates and increase water channelling, the result of which may cause flooding and erosion. Often, urban areas depend heavily on and deplete the surrounding water resources, including groundwater. In other situations, water is brought in from far away. Sewerage services and run-off from hardened surfaces in urban settings, if not appropriately managed, concentrate and transport nutrients and pollutants such as heavy metals, persistent organic pollutants and litter to water systems where they may accumulate to unsafe levels.

30. *Environmental flows*: Fluvial, groundwater and coastal systems need minimum water flows⁷ to maintain their functions, uses and benefits. The consequences of neglecting this need are increasingly evident and the costs of restoring environmental flows are exceeded only by the costs of delaying the restoration of flow. An ecosystem approach to IWRM dictates that activities such as dam construction, irrigation schemes, forestry and urban development must consider the impact that reduced or increased water flow will have on downstream environments, including coastal and marine environments, and human settlements, and that measures must be taken to prevent serious or irreversible changes to the ecosystem. Transboundary and upper watershed concerns also need to be taken in consideration. The World Conservation Union (IUCN) has spearheaded the practical application of the environmental flow concept, and countries such as Australia, Ecuador and South Africa now have actual experience of its use. Similarly, positive signs of environmental recovery have been emerging from the parched Mesopotamian marshlands, surging back to life as a result of exceptional increases in water flows.

31. *Integrated coastal zone management*: Under an ecosystem approach to IWRM it is impossible – even counterproductive – to consider freshwater and saltwater environments as separate ecosystems. The European Union's Water Framework Directive (2000/60/EC) and the Clean Water Act of the United States of America, for example, consider coastal zones as an integral part of freshwater management. No longer can freshwater and saltwater issues be considered in isolation, particularly as the discharge of untreated wastewater is one of the most serious threats to the health of coastal populations and ecosystems. The relevance of water management for coasts and oceans in the context of sustainable development cannot be overlooked. At its twenty-second session, the Governing Council/Global Ministerial Environment Forum, in its decision 22/2 II on the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, requested the Executive Director to promote the concept of integrated coastal area and river basin management, and to facilitate scientific, management and institutional links between freshwater management and coastal and marine management, taking into consideration the existing experience at national and regional levels.

32. *Technological solutions for environmentally sustainable water supply*: Several environmentally sound technologies that have recently received increased attention and application are already available to ensure a sustainable water supply. One of these is rainwater harvesting – an age-old technology resurfacing as a solution for non-serviced and under-serviced communities. Innovations include better collection, storage and hygiene maintenance. There is a growing worldwide movement to promote rain harvesting. Membrane technology is another example: mimicking nature (membranes on the beaks of seagulls, at plant roots or even in the kidney), membrane separation provides a means of purifying water. Reverse osmosis is a well-known example of the use of membrane separation for desalinating water. Although large-scale applications of membrane technology for the desalination of saline water to produce drinking water currently operate at about double the conventional treatment cost, there are very promising prospects for lower-cost applications in the removal of bacterial and parasitic pathogens from surface water using microfiltration.

⁷ An environmental flow is the provision of water within river, groundwater and coastal systems to maintain ecosystems and their benefits where the river, groundwater or coastal system is subject to competing water uses and flow regulation (this definition has been adopted in the World Conservation Union (IUCN) publication *Flow – The Essentials of Environmental Flows*). It means enough water is left in water bodies and is managed so as to ensure sustained environmental, social and economic benefits.

33. Related issues that are also covered in section C and D below include:
- (a) *Technological solutions for environmentally sustainable sanitation*: Ecosystem approaches integrate sewage collection, treatment, reuse and reallocation to the natural environment with the protection and sustainable use of ecosystems. Ecological sanitation is an alternative approach to conventional sanitation. It is not a single technology but rather a holistic approach involving keeping excreta out of water, containing and destroying pathogens and recycling nutrients to agriculture. It includes such components as urine-diverting toilets, soil-composting toilets and non-flush toilets;
 - (b) *Ecosystems and poverty*: Incorporating the environmental dimension into poverty alleviation strategies is essential to protect and preserve the ecosystem services that water systems provide – provisioning, regulating and enriching (see document UNEP/GC.22/INF/30/Rev.1). The crucial link between water, poverty reduction and human well-being is further considered in section D of this chapter, below.

C. Water and sanitation

34. During their consultations at the special session, Ministers may wish to consider how Governments and the international community can ensure that, in efforts to meet the World Summit on Sustainable Development targets for water supply and sanitation, due consideration is given to the environmental dimensions of water supply and sanitation, along the lines reflected in Governing Council decision 22/2 II, on the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, adopted by the Governing Council/Global Ministerial Environment Forum at its twenty-second session.

35. Ministers may wish, among other things, to recommend, on the basis of national experience, ways and means of promoting, at local, national, regional and global levels:

- (a) Strategies to address the environmental dimensions of the water supply and sanitation targets;
- (b) Improved assessments, including the indicators needed to assess the sustainability of the efforts in moving towards the water supply and sanitation targets;
- (c) Technological solutions to facilitate sustainable wastewater collection, treatment, reuse and reallocation to the natural environment;
- (d) Desirable urban management practices needed to provide environmentally sound sanitation for the urban poor, including considering the wide application of the key principles of the practical guidance on municipal wastewater management prepared by UNEP, the World Health Organization (WHO), the United Nations Human Settlements Programme (UN-HABITAT) and the Water Supply and Sanitation Collaborative Council.

36. Ministers may also wish to recommend, based on the issue paper prepared on financing domestic wastewater collection and treatment (UNEP/GCSS.VIII/INF/4), realistic means of closing the gaps between the funds currently allocated to wastewater management and those actually needed.

37. *Environmental dimensions*: It is now increasingly recognized that achieving the World Summit on Sustainable Development targets on water supply and sanitation is not simply a question of providing taps and toilets, but also one of ensuring the sustainable management of the resources that provide the water and the appropriate treatment of used water before it re-enters the water cycle. The water supply and sanitation cycle undergoes many repetitions before water finally reaches the marine environment. This issue also has direct implications for public and ecosystem health. At its twenty-second session, the Governing Council/Global Ministerial Environment Forum, in its decision on the Global Programme of Action, urged Governments to adopt, and requested the Executive Director to integrate into relevant components of the UNEP programme of work, a holistic environmental approach to sanitation and the implementation of the World Summit on Sustainable Development sanitation target, incorporating not only the provision of household sanitation services, but all other components of the water management process, including wastewater collection, treatment, reuse and reallocation to the natural environment.

38. *Assessment:* The Joint Monitoring Programme currently being implemented by the United Nations Children's Fund (UNICEF) and WHO is the main global mechanism for monitoring and reporting on progress toward the water supply and sanitation targets. In its current form, it mainly focuses on measuring infrastructure provisions. There is a need to incorporate indicators addressing the environmental dimensions of sanitation. For example, attention could be given not only to the coverage of sewerage systems in urban areas, but also to their state – operation and maintenance – as well as connections to, and the operation of, adequate and sustainable wastewater treatment services. In addition, the United Nations Millennium Project Task Force on Water and Sanitation recognizes the need to monitor not only the output for achieving the water and sanitation targets, but also the inputs: pledges for support from external donors and international financial institutions, commitments at regional, national and local levels, as well as actual investments accomplished.

39. *Technological solutions:* There are many available examples of the use of innovative technologies and management approaches in wastewater collection and treatment (see also paragraph 32 above) at national and local levels. These include low-cost alternatives, environmentally sustainable eco-technological alternatives, as also indigenous – often cultural-based – practices and experiences. There is also growing experience of reuse options and reduced water usage. Several of these innovative approaches are ready for replication on a large scale, and for mainstreaming in national development plans.

40. *Municipal wastewater:* UNEP, WHO, UN-HABITAT and the Water Supply and Sanitation Collaborative Council jointly developed and implemented a strategic action plan on municipal wastewater. At its twenty-second session, the Governing Council/ Global Ministerial Environment Forum requested the Executive Director further to develop the key guidance on municipal wastewater management and to submit it to the Council/Forum for consideration at its twenty-third session. Translating this decision into action at the national and international levels, based on practical experience on the ground, might constitute an important contribution by the Governing Council/Global Ministerial Environment Forum. In this context, strong support is needed for the following undertakings:

- (a) Development of regional and national targets to translate the global targets into regional and national action;
- (b) Creation of multistakeholder partnerships;
- (c) Increased participation by women in the community;
- (d) Involvement of the private sector;
- (e) Involvement of innovative and proactive financial arrangements and support by the donor community for the initial phases of new projects;
- (f) Leveraging domestic resources following creative new concepts;
- (g) Capacity-building to sustain all the above innovations and undertakings.

41. *Financing wastewater collection and treatment:* Financing measures to attain the targets on water and sanitation should take into account the costs of their environmental aspects, in particular, those related to sewerage and wastewater treatment. A ladder of available costed options may help decision makers to allocate the available funds in an optimal way in order to provide a maximum number of people with the best feasible services. While it has been stated that, for the gap to be bridged, the current level of investments in the water supply and household sanitation sector would need to be doubled, at least a fourfold increase is needed in the area of wastewater collection and treatment to address those environmental aspects of water and sanitation.

D. Water, health and poverty

42. In the light of their deliberations on the previous two topics, the Ministers may wish to address, within the context of the current international work on poverty and the environment, the role that Governments, the international community and UNEP should play in ensuring that environmental dimensions are better integrated into poverty-reduction strategies, local and national health programmes, and national sustainable development strategies.

43. Based, among other things, on the UNEP conceptual framework to analyse the linkages between poverty and the environment (as contained in document UNEP/GC.22/INF/30/Rev.1), the experience acquired in several countries and the conference on “Water for the Poorest”, held in Stavanger, Norway, in November 2003, the Ministers may wish to identify:

- (a) Workable approaches to integrate sustainable water management strategies in their poverty reduction strategy papers and other national development plans;
- (b) Integrated management approaches including vulnerability assessment, early warning, environmental capacity-building, and sustainable water production and consumption;
- (c) Ways and means of including environment-related water concerns across political boundaries and of promoting equitable access;
- (d) National and international policy measures and institutional changes necessary for the attainment of the above three objectives.

44. *Poverty, ecosystem and health:* High-quality water and a dependable water supply are both critical constituents and determinants of human well-being. The absence of either of those two components contributes towards poverty and poses major threats to human health – another major constituent and determinant of human well-being. At the twenty-second session of the Governing Council/Global Ministerial Environment Forum, in February 2003, the Executive Director presented a paper on the living natural resource base to fight poverty (UNEP/GC.22/8/Add.3). UNEP has also developed a conceptual framework on poverty and ecosystems (UNEP/GC.22/INF/30). This framework is being translated into action through pilot cases, focusing on country studies, notably in Africa. The application of these UNEP policy tools in the area of water has become more urgent and will represent a major contribution to the global efforts directed at achieving the target on water of the goals of the United Nations Millennium Declaration⁸ and those of the World Summit on Sustainable Development. The recent support for an increased role by UNEP at the country level, as well as its membership of the United Nations Development Group, enhances its important function in addressing water and poverty linkages, especially in the case of equitable access and use of water resources issues that transcend more than one country.

45. *Poverty reduction strategy papers:* The international community has committed itself to formulating or strengthening national poverty eradication plans to address the structural causes of poverty. The United Nations system and bilateral donors are involved in various poverty-reduction strategies and initiatives. The aims of these include assisting countries in analysing the extent and determinants of poverty and in formulating national policies and strategies designed to reduce poverty. The World Bank, donor countries and other agencies have made them the basis for debt relief and concessional lending. UNEP has a role to play in this complex nexus by providing expertise in the field of ecosystems, ecosystem services and human well-being. The role of UNEP in mainstreaming environmental considerations in the poverty reduction strategy paper process has been the subject of Governing Council decisions. Thus, the Malmö Ministerial Declaration (as contained in document UNEP/GCSS.VI/1, annex), Governing Council decision 21/15 on support to Africa and the more recent Governing Council decision 22/10 on poverty and the environment in Africa, in particular, provide a clear mandate for UNEP to advise requesting Governments on modalities for incorporating ecosystems and ecosystem services into their poverty reduction strategy papers, country assistance strategies and national development plans.

⁸ General Assembly resolution 55/2.

46. A recent publication by the World Bank (September 2003) on poverty reduction strategies and the United Nations Millennium Declaration goal on environmental sustainability states that only 12 of the full 28 poverty reduction strategy papers provides some information on the baselines and targets in line with Goal 7, and that none of the 22 interim poverty reduction strategy papers provides information on the long-term prospects. Within the poverty reduction strategy papers that present targets aligned with Goal 7, attention is focused almost exclusively on access to water and sanitation. Poverty reduction strategy papers with explicit targets aligned with the goals of the United Nations Millennium Declaration include those from Guyana, Honduras, Mauritania, Nicaragua, Rwanda, Senegal and Zambia. Guinea and Viet Nam present targets for 2010. Bolivia, Benin, the Gambia, Ghana and Yemen indicate a general commitment to achieving the targets set in the goals of the United Nations Millennium Declaration.

47. *Integrated management:* Key challenges in this regard include, first, the identification of cost-effective, science-based interventions to improve understanding of the linkages between ecosystem services, inadequate water management and poor health, with special emphasis on the magnitude of the costs of water-borne and related diseases; and, second, intervention strategies that include the provisioning and cleansing of water towards sustainable water production and consumption, and the incorporation of such interventions in poverty-reduction strategies.

48. *Equitable access:* As water is often a transboundary issue, the supply of and demand for water is often under the jurisdiction of more than one sovereign State. National water strategies may be more effective if integrated assessments embrace this issue of scale and ethics and subsequently integrate such concepts into poverty-reduction strategies or national sustainable development plans.

V. Towards the Jeju Implementation Framework

49. At its eighth special session, the Governing Council/Global Ministerial Environment Forum aims to identify and recommend, for wide application by local and national communities, practical measures and workable approaches, based on actual experience, that can enhance the implementation of a selected number of the relevant commitments and targets under the United Nations Millennium Declaration and World Summit on Sustainable Development commitments, and that can be replicated at a large scale. The outcome of the session will provide an environmental implementation framework for the forthcoming session of the Commission on Sustainable Development and other international forums, programmes and policy processes addressing water and sanitation and their relation with human settlements.

50. The Jeju Implementation Framework will reflect these practical, innovative and replicable approaches, which will, if applied widely, expedite the implementation of the relevant goals of the United Nations Millennium Declaration and the targets of the World Summit on Sustainable Development, while ensuring environmental sustainability. The Jeju Implementation Framework could be augmented with short written contributions by countries detailing innovative approaches that have been mainstreamed in national development strategies and have had an impact on national progress towards sustainable development. The Jeju Implementation Framework may also, for example, include the endorsement of the 10 keys of local and national action on municipal wastewater developed by UNEP, WHO, UN-HABITAT and the Water Supply and Sanitation Collaborative Council, and their recommendation for wide application by local and national authorities, the private sector and relevant international organizations and programmes.

51. In that way, the Jeju Implementation Framework will provide a clear example of how the international environmental community is moving from planning to action, and will contribute to the fulfilment of the commitments of the Millennium Declaration and the World Summit on Sustainable Development.

Annex I

Annotation for section II: Key environmental water issues: setting the stage

1. *Growing pressures on the environment and natural resource base:* About one third of the world's population live in countries suffering from moderate to high water stress. Increasing water demand is caused by population growth, industrial development and the expansion of irrigated agriculture. Degradation of freshwater and coastal and marine water resources threatens the livelihood of many people, especially the poor.
2. *Water and sanitation:* For many of the world's poorer populations, one of the greatest threats to public health, livelihood and ecosystem functions remains the continued discharge of untreated wastewater into fresh and coastal environments. Emphasis on water supply coupled with weak enforcement of regulations has limited the effectiveness of major investments and programmes in the area of water supply and sanitation in recent decades, particularly in developing regions. The challenge of ensuring environmentally sustainable water supply and sanitation services for human settlements, including urban dwellings, remains unchanged.
3. *Water and human settlements:* About half the world's population now live in urban areas. The accumulation of people, their consumption patterns and their urban economic activities have adverse impacts on the environment and natural resource base, including water resources. Recent publications by UN-HABITAT clearly indicate the environmental challenges associated with the rapidly urbanizing world population.
4. *Water quality:* More than half the world's major rivers and many coastal environments are seriously polluted, leading to the degradation of surrounding ecosystems such as wetlands, bird habitats, fish nurseries, sea grasses and coral reefs, and threatening the health and livelihood of the people who depend on them. Sources of pollution include untreated sewage, agricultural run-off and chemical pollution. The need for renewed action to monitor and assess water quality and institute better policies and programmes has become urgent. This provides, among other things, compelling reasons to strengthen existing monitoring programmes, such as the water programme of the UNEP Global Environment Monitoring System (GEMS), that provide water quality data and information for both assessment and management purposes, and to establish new programmes such as the Global Marine Assessment.
5. *Groundwater:* About 2 billion people, approximately one third of the world's population, depend on groundwater supplies, much of it drawn from shallow aquifers. Many rural dwellers depend entirely on groundwater. Worldwide, groundwater resources are vulnerable to a variety of threats, including overuse and contamination. The issues of the use and quality of groundwater have, until recently, received less attention than surface water, and data on groundwater stocks and flows are less reliable.
6. *Transboundary waters:* Water is widely shared between regions, countries, ethnic groups and communities. As many as 261 rivers are shared by two or more countries, making transboundary water resource management one of the most important water issues today. Furthermore, pollutants and sediment loads entering river systems often affect the coastal and marine environment of countries far removed from the original source of pollution. Cooperation rather than conflict has in the past been the norm for transboundary water management. A long-term common vision of riverine countries, needed for the effective, efficient and environmentally sustainable management of transboundary water resources, is essentially lacking, however. Growing tension necessitates a further promotion of cooperation in order to ensure the equitable sharing of the world's water resources
7. *Water and ecosystems:* Water development projects during the twentieth century have had a significant impact on freshwater, brackish and saltwater ecosystems. Removing water for human uses, altering flows and contaminating water with industrial, domestic and other wastes contribute to the elimination of areas that provide key environmental services, such as marshes and wetlands, mangrove forests, sea-grass meadows and coral reefs. In many rivers, lakes and coastal and marine areas, ecosystem functions have been lost or impaired. Wetlands, for example, are an important ecosystem influencing not only species distribution and biodiversity in general, but also human settlements and activities.

8. *Coastal and marine areas:* Fresh, coastal and marine water resources are intrinsically linked. More than 30 per cent of the world's population lives in coastal zones, with more than 1 billion people depending on corals reefs for food, income and livelihood. Coastal zones and marine environments are the recipients of the results of the management practices in the freshwater basins and drainage areas. The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, for which UNEP provides the secretariat, offers a strategic framework for the integrated management of rivers and coasts. Marine and coastal degradation is caused by increasing pressure on both terrestrial and marine natural resources and on the use of coastal and ocean resources, including for depositing waste and wastewater. The UNEP World Conservation Monitoring Centre (WCMC) assesses the increasing pressures on terrestrial, coastal and marine biodiversity and natural resources caused by human activities and overuse.
9. *Irrigated agriculture:* Agriculture accounts for over 70 per cent of freshwater drawn from lakes, rivers and underground sources. Poor environmental management has resulted in the salinization of about 20 per cent of the world's irrigated land, significantly reducing crop production. Worldwide trade in agricultural products – also referred to as trade in virtual water – has the potential to counteract water scarcity locally.
10. *Unsustainable use and consumption of water:* Current economic structures often do not provide sufficient incentives for sustainable water production and consumption. Investments in alternative ways of production through small-scale, traditional or new technologies are not sufficiently promoted. Desalination of coastal waters is increasingly becoming a source of water supply. The environmental consequences have not, as yet, received the attention that they deserve.
11. *Poverty and water:* The degradation of natural resources such as fresh and marine waters threatens the livelihood of many people, and in particular the poor. The links between water and poverty are enshrined in the Millennium Declaration and the Plan of Implementation of the World Summit on Sustainable Development: the world's poor suffer most from unsustainable water management. At the World Summit on Sustainable Development, the international community acknowledged the inextricable link between poverty eradication and access to water resource services. The conference on "Water for the Poorest", held in Norway in November 2003, has spotlighted the actions needed in this area.
12. *Extreme water events:* Many parts of the world have experienced major heatwaves, floods, droughts and other extreme weather events with significant and adverse environmental impacts. Population growth, coupled with unsustainable land-use and water-management practices, increases both human and environmental vulnerability to extreme water events.
13. *Water governance:* The Commission for Sustainable Development has reported that many countries lack adequate legislation and policies for the efficient and equitable allocation and use of water resources. Progress is being made, however, with the review of national legislation and the enactment of new laws and regulations of relevance to water.

Annex II

Annotations to section III: International policy responses

1. *United Nations Millennium Declaration:*⁹ The undertaking in paragraph 19 of the Millennium Declaration by the Heads of State and Government “to halve, by 2015 ... the proportion of people who are unable to reach, or to afford safe drinking water” has emerged as a major challenge requiring national, regional, global and United Nations system-wide actions. A new target on halving the proportion of people who do not have access to basic sanitation by 2015 was later set at the World Summit on Sustainable Development. In response, the United Nations Millennium Project was launched by the United Nations Secretary-General Kofi Annan, to identify the best strategies for meeting the goals of the United Nations Millennium Declaration, including the identification of priorities, strategies, organizational means and financing. UNEP serves on the Millennium Task Force on Water and Sanitation, set up in pursuit of the water supply and sanitation targets of both the United Nations Millennium Declaration and the World Summit on Sustainable Development.
2. *Global Programme of Action for the Protection of the Marine Environment from Land-based Activities:* At the first Intergovernmental Review Meeting on the Implementation of the Global Programme of Action, held in November 2001, Governments agreed to move the Programme from the planning to the action phase, paying particular attention to financial and governance issues. In response, the Global Programme of Action Coordination Office is focusing on facilitating new partnerships, including with the private and financial sectors, and promoting the use of best practices, sustainable legal, institutional and regulatory instruments, as well as innovative technological solutions, particularly for addressing municipal wastewater and the physical alteration and destruction of coastal habitats.
3. *Bonn International Conference on Freshwater (December 2001):* This conference, serving as a preparatory meeting for the World Summit on Sustainable Development, set out five keys for managing freshwater to achieve sustainable development: first, to meet the water security needs of the poor; second, that decentralization is key because the local level is where national policy meets community needs; third, to establish new partnerships for better water outreach; fourth, to forge cooperative arrangements at the water-basin level, including across waters that touch many shores; and, fifth, that the essential key is stronger, better-performing governance arrangements.
4. *The International Conference on Financing for Development* was held from 18 to 22 March 2002 in Monterrey, Nuevo León, Mexico. The Conference adopted the Monterrey Consensus, in which developed, developing and transition-economy countries pledged to undertake important actions in domestic, international and systemic policy matters. In December 2002, the General Assembly set in motion a detailed follow-up intergovernmental process, as called for in the Consensus, to monitor implementation and carry forward the international discussion on policies for financing development. The Assembly also called on the Secretary-General to establish a standing secretariat to support the process. Consequently, the Financing for Development Office was created in the Department of Economic and Social Affairs.
5. *World Summit on Sustainable Development (August 2002):* In its Plan of Implementation, the World Summit confirmed the central role of water in sustainable development and agreed on a range of specific activities to achieve water and sanitation targets and objectives. Water is intimately linked to health, agriculture, energy and biodiversity, as detailed in the paper on water, energy, health, agriculture and biodiversity (WEHAB) prepared for the World Summit on Sustainable Development. The Johannesburg Plan of Implementation called for, among other things, the establishment of a world solidarity fund to eradicate poverty and promote social and human development in the developing countries; the development of integrated water resources management and water efficiency plans by 2005; and effective coordination among the various international and intergovernmental bodies and processes working on water-related issues, both within the United Nations and between the United Nations and international financial institutions. Finally, at its eleventh session, held in April 2003, the Commission on Sustainable Development agreed to take on the challenge of reviewing progress and promoting the further implementation of the water agenda in the first cycle of its new multi-year programme of work.

⁹ The internationally agreed Millennium Declaration (United Nations General Assembly resolution 55/2 of 8 September 2000) was adopted in 2000 and endorsed in 2002 by the World Summit on Sustainable Development.

6. *Voluntary initiatives:* The large number of voluntary initiatives announced by Governments, institutions, non-governmental organizations, the Global Environment Facility (GEF) and the private sector are part of the main outcomes of the World Summit. At the World Summit, many so-called type two initiatives were announced – a good number of which are of particular relevance to UNEP. In the field of the interrelation between freshwater and the coastal and marine environment, these include the White Water to Blue Water initiative; the H₂O: Hilltops-2-Oceans Initiative; an Indonesian initiative to reduce marine pollution by involving communities in marine protection; Australia's oceans initiative, which aims to increase coastal State and regional capacity for cross-sectoral approaches to the management of watersheds and marine ecosystems; and the European Union global initiative on water with its special focus on Africa, aiming at creating strategic partnerships to achieve the World Summit on Sustainable Development goals on clean water and sanitation. Current related initiatives include the International Coral Reef Action Network (ICRAN), established to halt and reverse the serious decline in health of the world's coral reefs, and the African process for the development and protection of the marine and coastal environment, designed to result in specific project proposals in five thematic areas – coastal erosion, management of key ecosystems and habitats, sustainable use of living resources, pollution, and tourism.

7. *Governing Council/Global Ministerial Environment Forum:* At its twenty-second session, held in February 2003, the Governing Council/Global Ministerial Environment Forum approved the 2004–2005 biennial work programme, which provides for the strengthened implementation of the UNEP Water Policy and Strategy. The discussion papers UNEP/GC.22/10/Add.3/Rev.1, entitled “Implementing the outcomes of the World Summit on Sustainable Development: Water” and UNEP/GC.22/2/Add.3 entitled “Review of the water policy and strategy of the United Nations Environment Programme: Key policy issues and policy options”, were presented by the Executive Director to the plenary session. In addition, the Executive Director presented document UNEP/GC.22/INF/35 entitled “Measures for strengthening the freshwater component of the water policy and strategy”. Together, these three documents provide a good basis for considering the policy relevant aspects of work by UNEP in the follow-up to the World Summit on Sustainable Development and are relevant to the discussions of the Council/Forum at its current special session.

8. *Third World Water Forum:* The Third World Water Forum, held in March 2003, compiled a total of 422 actions, submitted by 36 countries and 16 international organizations, into a “Portfolio of Water Actions”. Ministers identified steps to tackle water issues in five areas: water resources management and benefit sharing; safe drinking water and sanitation; water for food and rural development; water pollution prevention and ecosystem conservation; disaster mitigation and risk management. In order to meet the United Nations goal of halving by 2015 the proportion of people worldwide who are unable to reach or to afford safe drinking water, the Ministerial Declaration stressed the importance for each country to develop strategies. UNEP, as lead agency for World Water Day, marked the occasion at the Forum.

9. *The Commission on Sustainable Development* concluded its eleventh session, held in New York from 29 April to 9 May 2003, with an agreement on its future programme and organization of work for the next 15 years. The Commission will now function on the basis of two-year implementation cycles, including review and policy years. The review year will evaluate progress made in implementing sustainable development goals and identifying obstacles and constraints, while the policy year will decide on measures to speed up implementation and mobilize action to overcome those obstacles and constraints. For the first two-year cycle (2004-2005), the Commission on Sustainable Development will focus on water, sanitation and human settlements, followed by energy, climate change, atmosphere and industrial development issues in the 2006-2007 cycle. In every cycle, a number of cross-cutting issues will be addressed, such as poverty eradication, changing unsustainable patterns of production and consumption, health, education and sustainable development in a globalizing world, together with means of implementation. The years 2016-2017 will be devoted to an overall appraisal of the implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the Johannesburg Plan of Implementation.

10. *Group of 8 Summit*: The G-8 Summit, held in June 2003, included as one of its main discussions items water and sanitation and developed a detailed action plan for this important area of concern. In response to the needs and priorities of partner countries, the G-8 action plan intends to take the following measures:

- (a) Support for water initiatives under the New Partnership for Africa's Development (NEPAD);
- (b) Promoting good governance (assisting, as a priority, countries that make a political commitment to prioritize safe drinking water and basic sanitation as part of their strategy to promote sustainable development, including poverty eradication);
- (c) Supporting countries' capacity-building efforts to develop the necessary skills to provide efficient public services;
- (d) Reinforcing efforts to provide assistance for the development of integrated water resources management and water efficiency plans;
- (e) Supporting better management and development of shared river basins;
- (f) Promoting river basin cooperation throughout the world, with particular attention given to African river basins.

11. The G-8 leaders also committed themselves to the incorporation of priorities from the 1995 Global Programme of Action for the Protection of the Marine Environment from Land-based Activities into national, regional and international policies and initiatives.

12. *Dushanbe International Fresh Water Forum*: This Forum, held from 29 August to 1 September 2003, adopted the Dushanbe Water Appeal. The participants reaffirmed their commitment to implementing action toward the achievement of the goals of the United Nations Millennium Declaration and the targets agreed at the World Summit on Sustainable Development, among other things, through implementing IWRM based on an ecosystem approach; working towards effective agreements for the management of transboundary watercourses; enhancing the efficiency of hydroelectric production; pursuing innovative and pro-poor resource mobilization; and promoting the sustainable use and restoration of water-related ecosystems.

13. The Stavanger conference was convened on 4 and 5 November 2003 by the International Water Academy in Stavanger, Norway, with the theme "Water for the Poorest". The conference concentrated on how to implement the goals of the United Nations Millennium Declaration for water and the Johannesburg Summit's targets on sanitation and integrated water resources management. The outcome of the conference will be reported to the Commission on Sustainable Development at its thirteenth session. Main points included that the goals of the United Nations Millennium Declaration on water and sanitation are achievable; that people have a right to safe water supplies that satisfy their basic needs at a price they can afford; and that national Governments have the main responsibility in that area but not the sole responsibility.

14. *Pan-African Implementation and Partnership Conference on Water*: This conference, held in Addis Ababa in December 2003, considered the implications of the outcomes of the World Summit on Sustainable Development on regional water initiatives and the continent's role in implementing the Summit's outcomes. The conference endorsed a portfolio of water initiatives and projects and launched a number of new initiatives, including the African Water Facility, the formal signing of the African-European Union Strategic Partnership on Water Affairs and Sanitation, and the second phase of the programme on water and sanitation for African cities. Ministerial commitments included the establishing of national task forces on water and sanitation, and using the conference's commitments and recommendations as a basis for developing a common African approach before and after the twelfth session of the Commission on Sustainable Development. Several donor countries made major pledges at the Conference.

15. *Barbados Plan of Action for the Sustainable Development of Small Island Developing States*: The international meeting to review the Barbados Plan of Action will take place in Mauritius later in 2004. Small island developing States are particularly vulnerable to water issues and the effects of pollution caused, among other things, by the discharge of untreated sewage into areas of the coastal and marine environment, such as coral reefs, upon which many of them depend economically. In the preparatory process for the Mauritius conference, small island developing States identified the following issues as requiring priority attention: first, implementation of integrated wastewater management strategies in order to reduce the impact of pollution on the coastal and marine resources; second, capacity-building for the implementation of multilateral environmental agreements and enhancing compliance and enforcement; and, third, the development and application of the Environmental Vulnerability Index directed towards mitigation and adaptation strategies.
