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Implementation of the Global Programme of Action
for the Protection of the Marine Environment
from Land-based Activities
Fourth session
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**The Global Programme of Action for the Protection
of the Marine Environment from Land-Based
Activities**

**A 20-year Perspective on a Unique Programme
to Advance the Ocean Agenda**

Note by the Secretariat

The present document has been issued without formal editing.

**The Global Programme of Action for the Protection of the
Marine Environment from Land-Based Activities**

**A 20-year Perspective on a Unique Programme to
Advance the Ocean Agenda**

Reflections on the past decades and charting the future

Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities: A 20-year Perspective on a Unique Programme to Advance the Ocean Agenda

Part 1: The rationale and origin of the Global Programme of Action

1.1 Historical context

1. The UNEP Governing Council taking into account the outcomes of the United Nations Conference on Environment and Development 1992 i.e., the Agenda 21 authorized the Executive Director of UNEP vide its decision 17/20 of 21 May 1993 to initiate a process leading to an intergovernmental meeting for the purpose of adopting a programme of action for the protection of the marine environment from land-based activities. This process included among others a weeklong meeting of government-designated experts, focusing on the 1985 Montreal Guidelines for the Protection of the Marine Environment from Land-Based Sources of Pollution (Montreal, June 1994); a final preparatory meeting of government-designated experts to review and revise the draft of a global programme of action in Reykjavik (March 1995) and finally an inter-governmental conference for the purpose of adopting a programme of action in Washington D.C., USA (October - November 1995).

1.2 Adoption of the Global Programme of Action

2. The inter-governmental meeting held in Washington, D.C., USA from 23 October to 3 November 1995 attended by 108 governments and the European Commission along with various UN bodies and UN specialized agencies, inter-governmental bodies and non-governmental organizations reviewed, revised the outcomes of Montreal and Reykjavik meetings and adopted the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA).

1.3 What is the Global Programme of Action?

3, The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) is designed to be a source of conceptual and practical guidance to prevent, reduce, control or eliminate marine degradation resulting from land-based activities. It “aims at preventing the degradation of the marine environment from land-based activities by facilitating the realization of the duty of States to preserve and protect the marine environment”. Through the GPA, the States declared *“their commitment to protect and preserve the marine environment from the impacts of land-based activities (and the programme) is designed to assist States in taking actions individually or jointly within their respective policies, priorities and resources, which will lead to the prevention, reduction, control and/or elimination of the degradation of the marine environment, as well as to its recovery from the impacts of land-based activities”*.

4. The international legal regime for the protection of the marine environment prior to the adoption of the GPA primarily governed by two interdependent frameworks namely the principles of customary international law as outlined in the United Nations Convention on the Law of the Sea (UNCLOS) and the Chapter 17 of Agenda 21, the plan of action adopted at the 1992 United Nations Conference on Environment and

Development (UNCED). The UNCLOS does not contain detailed technical standards, but provides the legal basis for the multilateral development of rules within the “competent international organizations” and for the uniform implementation and enforcement of “generally accepted international rules and standards.” Whereas the Chapter 17 of Agenda 21 has introduced the new objectives, principles and concepts of international environmental law into the law of the sea and has worked as a catalyst for the implementation and further development of the environmental regime set out by the UNCLOS.

5. Interestingly, the GPA re-emphasizes many of the responsibilities that are outlined in the United Nations Convention on the Law of the Sea (UNCLOS) such as Article 207 on Pollution from land-based sources which notes that *“States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources, including rivers, estuaries, pipelines and outfall structures, taking into account internationally agreed rules, standards and recommended practices and procedures shall take other measures as may be necessary to prevent, reduce and control such pollution shall endeavour to harmonize their policies in this connection at the appropriate regional level (and) establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control pollution of the marine environment from land-based sources, taking into account characteristic regional features, the economic capacity of developing States and their need for economic development.....”* (UNCLOS 1982). The GPA also operationalizes the Chapter 17 of the Agenda 21 ‘Protection of the Oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources’ and highlights the need for principled decision-making as set out in Agenda 21 and the Rio Declaration on Environment and Development (1992). The GPA sets forth rights and obligations of States and provides the international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources. The Programme emphasized the principles of precaution, pollution prevention, public participation and integrated coastal area management to guide national and regional efforts to protect the marine environment.

6. The protection and preservation of the marine environment has become a primary goal for the international community as it is widely acknowledged that a healthy coastal and marine environment is essential to human wellbeing, sustainable development and economic security. Marine and coastal ecosystems provide a range of important functions and services, ranging from food, transport, natural shoreline protection against storms and floods, to tourism and recreation, and are of great economic value, directly as well as indirectly. The natural resource base of the marine and coastal areas is under growing pressure, however. At the present time, 38 per cent of the world’s population lives within a narrow fringe of coastal land, which accounts for only 7.6 per cent of the Earth’s total land area, and a large proportion of coastal dwellers are heavily dependent on coastal resources for their livelihoods. Despite action at all levels, coastal and marine ecosystems continue to deteriorate in many locations around the globe. Nearly 80 per cent of all marine pollution originates on land and this degradation from human activities is proving costly. The States therefore through the GPA agreed “to develop comprehensive, continuing and adaptive programmes of action within the framework of integrated coastal area management” recognising the importance of the healthy marine environment and sustainable management of the coastal and marine resources for food security and poverty alleviation, public health, ecosystem health, and consequent economic and social benefits for the society at large.

7. The GPA is unique in the sense that it is the only global environment initiative directly addressing the connectivity between terrestrial, freshwater, coastal and marine ecosystems. It is broad in its scope, addressing the source categories of sewage, persistent organic pollutants, radioactive substances, heavy metals, oils (hydrocarbons), nutrients, sediment mobilization, litter, and the physical alteration and destruction of habitat. Therefore, the United Nations General Assembly through its Resolution 51/189 (December 1996) “Endorses the Washington Declaration on Protection of the Marine Environment from Land-based Activities and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities; (and) stresses the need for States to take the necessary measures for the implementation of the Global Programme of Action at the national and, as appropriate, the regional and international levels”. The General Assembly in the same resolution also emphasized on “the need for States to take action for the formal endorsement by each competent international organization of those parts of the Global Programme of Action that are relevant to their mandates and to accord appropriate priority to the implementation of the Global Programme of Action in the work programme of each organization” (A/RES/51/189).¹

1.4 The GPA Secretariat and its role

8. The Paragraph 74 of the Global Programme of Action deliberates on the institutional arrangement for the implementation of the GPA and it notes “*recognizing that States have the primary role in the implementation of this Programme of Action, UNEP, as the coordinator and catalyst of environmental activities within the United Nations system and beyond, should, through its programmes and secretariat role: promote and facilitate implementation of the Programme of Action at the national level; promote and facilitate implementation at the regional, including subregional, level through, in particular, a revitalization of the Regional Seas Programme; and play a catalytic role in the implementation at the international level with other organizations and institutions*”.

9. The GPA further noted that in fulfilling this role, including the secretariat function, UNEP should undertake it in an efficient and cost-effective manner, supported largely by the existing resources, expertise and infrastructure available in all components of UNEP's programmes. UNEP should be flexible and responsive to the evolving needs of the Programme and the availability of resources, e.g. from trust funds. Additionally, in facilitating the effective implementation of the Programme of Action, UNEP should maintain a close partnership with other organizations and bodies, such as IMO, WHO, FAO, WMO UNDP, UNIDO, IOC/UNESCO, IAEA, the World Bank and regional development banks, GEF and UNCHS (Habitat), as well as regional bodies supporting the implementation of regional seas and relevant freshwater programmes. An appropriate division of tasks is of essential importance to ensure the efficient and cost-effective implementation of the Programme of Action.

10. Further it was also stated (Para 77) UNEP should, in close collaboration with the relevant organizations and institutions, convene periodic intergovernmental meetings

¹ The United Nations General Assembly resolution further “stresses the need for States to take such action at the next meetings of the governing bodies of the United Nations Environment Programme, the United Nations Development Programme, the United Nations Centre for Human Settlements (Habitat), the Food and Agriculture Organization of the United Nations, the World Health Organization, the International Maritime Organization, the International Atomic Energy Agency, the International Labour Organization and the United Nations Industrial Development Organization and in the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization and the relevant bodies of the International Monetary Fund and the World Bank, as well as in other competent international and regional organizations within and outside the United Nations system” (UNGA A/RES/51/189. Paragraph 4).

to: (a) Review progress on implementation of the Programme of Action; (b) Review the results of scientific assessments regarding land-based impacts upon the marine environment provided by relevant scientific organizations and institutions, including GESAMP; (c) Consider reports provided on national plans to implement the Programme of Action; (d) Review coordination and collaboration among organizations and institutions, regional and global, that have responsibilities and experience with respect to prevention, reduction and control of impacts upon the marine environment from land-based activities; (e) Promote exchange of experience between regions; (f) Review progress on capacity-building and on mobilization of resources to support the implementation of the Programme of Action, in particular by countries in need of assistance and, where appropriate, provide guidance; (g) Consider the need for international rules, as well as recommended practices and procedures, to further the objectives of the Programme of Action.

11. In considerations of the above the United Nations General Assembly through its Resolution (A/RES/51/189) “requests the Executive Director of the United Nations Environment Programme to prepare, for the consideration of the Governing Council at its nineteenth session, specific proposals on: (a) **The role of the United Nations Environment Programme in the implementation of the Global Programme of Action, including the relevant role of its Regional Seas Programme and Freshwater Unit; (b) Arrangements for secretariat support to the Global Programme of Action; (c) Modalities for periodic intergovernmental review of progress in implementing the Global Programme of Action** (op. cit., Paragraph 7 emphasis added).

12. Subsequently the Nineteenth Session of the UNEP Governing Council adopted the decisions (19/14A and 19/14B) by consensus to support implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and the institutional arrangements for implementation of the GPA which, *inter alia*: endorsed the proposed role of UNEP as secretariat of the Global Programme of Action; accorded priority to the implementation of the Global Programme of Action in the programme of work of UNEP; requested UNEP's Executive Director to incorporate the activities of the Global Programme of Action into all regional seas programmes and to establish links with other regional plans, programmes or conventions for the protection of the marine and freshwater environments; and requested UNEP's Executive Director to continue strengthening the integrated management of UNEP activities related to the freshwater and marine environments for implementation of the Global Programme of Action (UNEP/GC.19/34.1997).

13. In pursuance to the decision of the Governing Council, “GPA Coordination Office” was created within UNEP Division of Environmental Policy Implementation to facilitate and coordinate GPA-related activities within the UN system, and to assist national governments in their respective efforts to implement the GPA. The overarching mission of UNEP in its capacity as Secretariat of the GPA is to leverage and support reforms and actions at national and regional scales to protect the marine environment from land-based activities. This mission is achieved through the combined efforts of all UNEP Division and various Secretariats of Regional Seas Conventions. The Government of the Kingdom of the Netherlands agreed to host the Secretariat in The Hague and the office was inaugurated on 24 November 1997. The GPA Coordination Office operated from The Hague till 2008, before being relocated to UNEP headquarter in Nairobi in July 2008.

14. The GPA Coordination Office, as the Secretariat of the GPA receives policy guidance and approval of its work programme from the governments through the periodic inter-governmental review meetings to assist governments, intergovernmental

organizations such as Regional Seas Convention secretariats in the implementation of the GPA as a vehicle to fulfilling their commitments to protect the marine environment from land-based sources of pollution. The inter-governmental review meetings are held every five years.

1.5 The source category approach

15. The Chapter 5 of the GPA elucidates approaches according to nine source categories, which identify specific targets and activities to be considered at each level (national, regional and global). The nine categories are: sewage, persistent organic pollutants, radioactive substances, heavy metals, oils (hydrocarbons), nutrients, sediment mobilization, litter and physical alterations. The GPA invites governments to assess their respective problems, identify priorities for action, develop strategies, monitor implementation and set as their common goal sustained and effective action to deal with all land-based impacts upon the marine environment, specifically those resulting from the nine pollutant source categories. The GPA provides a broad-based menu of recommendations that are to be adopted at the national, regional and global levels with the aim of providing specific recommendations where appropriate, and encouraging opportunistic adoption of acceptable approaches. The goal is to meet certain objectives in the mitigation of land-based pollution in protection of marine ecosystems and providing for flexibility at each level for meeting targets and objectives.

1.6 The Global Programme of Action methodology translation to the national context

16. The GPA is intended to provide guidance on developing a process for management actions to result in sustainable use of coastal and marine resources. The Programme recognised that degradation of the marine environment results from human activities that use resources beyond replenishment, that dispose of wastes in areas unable to assimilate pollutants and that alter habitats through siltation, sedimentation, removal, filling and other disturbances. These activities not only threaten resources, but also in many case adversely impact on human health through contaminated seafood and poor water quality for swimming and other recreational activities. The GPA provides a process for developing programmes of action, which can be used by all countries, those that are highly industrialised and those with developing economies. Primary emphasis of the GPA is on national actions. The objectives of the actions at the national level are to develop comprehensive, continuing and adaptive programmes of action within the framework of integrated coastal area management.

17. The GPA methodology suggests six steps for developing national programmes of action:

1. Identification and assessment of problems;
2. Establishment of priorities;
3. Setting management objectives for priority problems (and by implication adoption of management objectives);
4. Identification, evaluation and selection of strategies and measures, including management approaches;
5. Adoption of criteria for evaluating the effectiveness of strategies and programs; and
6. Programme support elements (i.e., making provisions for adequate finance, human resources and legal and enforcement mechanisms).

18. The process for *setting priorities* at all levels should reflect the relative importance of impacts upon issues such as food security, public health, coastal and

marine resources, ecosystem health and socio-economic benefits. As part of the assessment process there should be evaluations of costs, benefits and feasibility of options, including no action options. Management objectives should provide for overall goals, timetables, and integrate preventive and remedial actions using existing knowledge, resources, plans and processes. Although not explicitly stated in the GPA, implicitly it is assumed that stakeholders should participate in the process of problem identification, priority setting and establishment of management objectives. Strategies to achieve these management objectives are left to the judgement of professionals who can identify best available techniques, best environmental practices and appropriate incentives both regulatory and economic for achieving goals. An important part of the process is to encourage technical assistance and transfer of information and increasing public awareness and education as well as designing appropriate financial mechanisms to administer and implement strategies and programmes.

19. The GPA also fully recognised the importance and relevance of regional cooperative arrangements particularly where a number of countries share a common coastline and marine area, and international cooperation for enhancing capacity building, technology transfer and cooperation, and financial support. Regional and sub-regional cooperation allows for more accurate identification and assessment of the problems in particular geographic areas and more appropriate establishment of priorities for actions in these areas. Such cooperation also strengthens regional and national capacity-building and offers an important avenue for harmonizing and adjusting measures to fit the particular environmental and socio-economic circumstances and, where necessary, create new regional cooperative arrangements and joint actions to support effective action, strategies and programmes. The GPA envisaged using and/or strengthening UNEP Regional Seas Programme to facilitate and ensure regional cooperative arrangements for addressing land-based sources of marine pollution.

20. International cooperation is considered important for the successful and cost-effective implementation of the programme of action, and serves a central role in enhancing capacity building, technology transfer and mobilization of financial resources. International cooperation is also required to ensure regular review of the implementation of this programme of action and its further development and adjustment. Strategic partnership with various agencies and organization was viewed as an effective tool to foster dialogues and define agenda for pursuance at international level.

21. The Programme also calls for the development of a clearing-house mechanism through which decision makers would be provided with up-to-date information, practical experience and scientific and technical expertise. It would involve a data directory, information delivery mechanism and the necessary infrastructure to be coordinated by UNEP.

22. It is evident that the GPA methodology promotes an integrative approach that brings together various stakeholders and all levels of government within countries and between countries in developing strategies and programs that achieve agreed upon goals. Adoption of this process to regional and subregional areas through the Regional Seas Programme was considered crucial for protecting marine environments from land-based activities.

Part 2: Accomplishments of the Global Programme of Action

23. Since the adoption of the Global Programme of Action over twenty years ago, many important developments have taken place to address issues pertaining to the state of the global environment and human pursuits for sustainable development. In these endeavours the GPA appears to retain its currency as a valuable tool to achieve the goals and targets established by the international community in recent years especially for the sustainable development of oceans, coasts and islands. It has been widely acknowledged that the Global Programme of Action, due to its cross-sectoral nature, is relevant and well-suited to respond to the new challenges associated with the impact of land-based activities on the coastal and marine environments at various levels. It is therefore, not surprising to read frequent references to GPA in major international conference and meeting outcome documents and the resolutions of United Nations General Assembly. This recognition of GPA is largely due to governments' commitment to implement GPA at the national and regional levels through adoption of various programmes of action and the facilitating role of the GPA secretariat. Taking into account the progress review mechanism outlined in the 1995 Washington Declaration and later endorsed by the United Nations General Assembly and UNEP Governing Council, this report follows the timeline of periodic inter-governmental review meetings of the Global Programme of Action, particularly with reference to implementation of the GPA at national levels and the role of the GPA Coordination Office. Dedicated attentions have been paid to highlight regional actions with reference to the GPA leading to embedment of the GPA in the international development agenda and acknowledgement of GPA's importance by the United Nations General Assembly through its various resolutions.

2.2 Phase I: Planning and strategy formulation (1995 to 2001)

2.2.1 Establishment of the Secretariat and the affirming the basis for action

24. In pursuant to the United Nations General Assembly resolution 51/189 of 16 December 1996, the UNEP Governing Council at its nineteenth session in 1997 adopted the decision (GC19/14 A) on the implementation of the Global Programme of Action, which, *inter alia*: endorsed the proposed role of UNEP as secretariat of the Global Programme of Action; accorded priority to the implementation of the Global Programme of Action in the programme of work of UNEP; requested UNEP's Executive Director to incorporate the activities of the Global Programme of Action into all regional seas programmes and to establish links with other regional plans, programmes or conventions for the protection of the marine and freshwater environments; and requested UNEP's Executive Director to continue strengthening the integrated management of UNEP activities related to the freshwater and marine environments for implementation of the Global Programme of Action. The Global Programme of Action Coordination Office, which is part of UNEP's Division of Environmental Policy Implementation, was officially opened on 24 November 1997. The secretariat, according to progress report submitted to the IGR-1, was however fully staffed only in August 1999 (cf. UNEP/GPA/IGR.1/3. Progress report on the activities of the UNEP Global Programme of Action Coordination Office during the period 1996-2001). Subsequently, GPA Coordination Office, in discharging its mandate as the secretariat for the Global Programme of Action, primarily concentrated on dealing with scientific assessments of land-based activities, resource mobilization, in particularly to assist developing

countries in implementing the Global Programme of Action through development of national programmes of action, addressing the municipal wastewater challenge, developing a clearing-house mechanism, and participation of developing countries in the first Intergovernmental Review Meeting.

25. The GPA identified the need for regular scientific reviews of the marine environment at the global level and recommended the establishment of linkages with the activities of on-going international programmes focusing on monitoring and assessment. The GPA specifically identified the IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) as one mechanism for developing scientific assessment on land-based activities. During the twenty-sixth session of GESAMP (Paris, 25-29 March 1996), UNEP proposed establishment of a Working Group on Marine Environmental Assessments. This proposal was endorsed and UNEP was designating as the lead agency for this Working Group. The working group based on the analyses of a series of regional reports on land-based activities prepared under the aegis of the UNEP Regional Seas Programme, and other reports produced two GESAMP global reports. They are "A Sea of Troubles" and "Protecting the Oceans from Land-based Activities" (GESAMP reports and studies No. 70 and 71).

2.2.2 The Regional Seas Programmes as a platforms for implementation

26. During the period 1996-1999, UNEP convened eight regional workshops of government-designated experts, within the framework of its Regional Seas Programme. The workshops discussed and finalized regional assessments on land-based activities, including prioritization of sources of pollution both at the national and regional levels; discussed the development of the regional components of the clearing-house mechanism; and reached, in most cases, agreement on non-binding regional programmes of action on land-based activities, as a planning tool. Regional programmes of action, as planning or implementation tools, were developed, with the support of the GPA Coordination Office, in the following regions: South-East Pacific, ROPME Sea Area, East Asian Seas, Eastern Africa, West and Central Africa, Upper South-West Atlantic, South Pacific, Red Sea and Gulf of Aden, and South Asian Seas (for details see Progress report, UNEP/GPA/IGR.1/3).

27. GPA Coordination Office during the initial phase also particularly worked with selected non-UNEP regional seas convention secretariats such as the Helsinki Commission for Baltic Marine Environment Protection (HELCOM), OSPAR Commission for the Convention for the Protection of the Marine Environment of the North-East Atlantic and the Arctic Council's Protection of the Arctic Marine Environment (PAME) programme, with regard to exchange of information and experiences, their contributions to strengthening other regional seas programme through a "twinning programme" between regional seas programmes.

2.2.4 Contributions of the Global Environment Facility

28. While adopting the Global Programme of Action, the Global Environment Facility (GEF) was not designated as the financial mechanism for the implementation of the GPA. Notwithstanding the above, the GEF, funded a number of national and regional activities designed to assist countries in meeting their obligations under the Global Programme of Action. Taking in view the GEF Operational Programme No.10 "Contaminant-based Operational Program" that contains specific mention of support to the Global Programme of Action, the three implementing agencies -UNEP, UNDP and the World Bank - in partnership with concerned Governments, initiated numerous activities in

support of the Global Programme of Action. For example, UNEP through its Regional Seas Programme, developed a targeted GEF project in the Mediterranean to implement the Protocol on land-based activities as amended in 1996.

29. GPA Coordination Office contributed to the development and implementation of a GEF medium-sized project for sub-Saharan Africa. This project, which was implemented under the leadership of the Advisory Committee on Protection of the Sea (ACOPS), UNEP and other partners, to assist Sub-Saharan African countries, among others, to develop a programme of interventions addressing problems of regional priority in support of the African Action Plan and African Strategy for the Development and Protection of the Coastal and Marine Environment in sub-Saharan Africa, adopted at the Cape Town Conference (30 November-4 December, 1998). The project outcomes also contributed to national plans and programmes consistent with the objectives of relevant regional conventions, such as the Convention for Cooperation in the Protection and Development of the marine and Coastal Environment of the West and Central African Region (Abidjan Convention) and the Convention for the Protection and Development of the marine and Coastal Environment of the Eastern African Region (Nairobi Convention) and related protocols.

30. In addition to above noted targeted projects that focus specifically on implementation of GPA, most GEF International Waters projects contain components or activities designed to address issues of marine contamination and pollution, sediment mobilization and transfer, domestic waste (including sewage) management, and integrated freshwater catchment and coastal zone management. Enhancing skills and capabilities of stakeholders to management land-based activities through integrated approach and addressing coastal zone problems through actions in the catchment basins draining to the marine environment were promoted through projects such as the Sao Francisco River Basin of Brazil, and San Juan River Basin in Nicaragua and Costa Rica.

31. With GEF resources in the La Plata Basin UNEP implemented Bermejo project that addressed the causes of soil erosion and sediment mobilization in the Bermejo sub-catchment of the Plata system. Similarly, the Plata Maritime Front project, implemented by UNDP, addressed the problems arising from enhanced sediment inputs and their contamination in the Plata estuary. In the Danube and Black Sea region all three GEF implementing agencies (UNEP, UNDP and the World Bank) developed coordinated actions to address the problems resulting from anthropogenically enhanced nutrient inputs to the Black Sea from the Danube River Basin.

2.2.5 Facilitating development of national programmes of action

32. The implementation of the Global Programme of Action at the national level is of crucial importance for the achievement of the goals set out in the GPA text. The Paragraph 19, chapter II, of the Global Programme of Action states that “States should, in accordance with their policies, priorities and resources, develop or review national programmes of action within a few years and take forward action to implement these programmes with the assistance of the international cooperation identified in chapter IV, in particular to developing countries, especially the least developed countries, countries with economies in transition and small island developing States (hereinafter referred to as “countries in need of assistance”). The effective development and implementation of national programmes of action should focus on sustainable, pragmatic and integrated environmental management approaches and processes, such as integrated coastal area management, harmonized, as appropriate, with river basin management and land-use plans”. One of the tools to implement the Global Programme

of Action at the national level is the national programmes of action (NPA). NPAs are intended to provide management frameworks for addressing land-based sources of pollution by touching upon cross-sectoral issues such as legislation, policies and financing and enabling concrete activities to protect the marine environment.

Importance of developing a NPA though much emphasized in the GPA, it had a slow start. In 2001 when the governments met in Montreal Canada to review the progress in the implementation of the GPA, from the Secretariat's progress report it appears that only 13 countries were developing a NPA and two countries reported to have finalized their NPAs. The countries that were in the process of developing NPAs were all in the global South namely; Bangladesh, Bhutan, Brazil, Egypt, India, Maldives, Nepal, Nigeria, Pakistan, Sri Lanka, Russian Federation, United Republic of Tanzania and Yemen. Canada and Iceland reported finalization of their NPA. GPA Coordination Office, in its effort to facilitate developing NPA closely worked with the Regional Seas Programme, ACOPS and other partners such as GEF. In the progress report the GPA Coordination Office also acknowledged that numerous other countries requested support, but at that point of time could not be honoured due to resource constraint, and hence was brought to the attention of governments during the IGR-1.

2.2.6 Addressing other pollution source categories

33. GPA Coordination Office taking into account the outcomes of various regional consultations made a strategic choice to direct its resources to address GPA source category such as sewage, physical alternations and destruction of habitats, and development of integrated coastal area and rive-basin management and clearing-house mechanism as tools to promote GPA implementations.

34. **Sewage:** The priority for action on sewage, as identified by the Global Programme of Action, was reconfirmed by the various regional workshops of government-designated experts organized by the GPA Coordination Office within the framework of the Regional Seas Programme (see paragraphs above) and also by the UNEP Governing Council in decision 20/19 of 1999. In response to the above, the GPA Coordination Office, in cooperation with the World Health Organization (WHO), the United Nations Centre for Human Settlements (Habitat) and the Water Supply and Sanitation Collaborative Council (WSSCC) developed the Global Programme of Action's Strategic Action Plan on Municipal Wastewater. This Strategic Action Plan was prepared to further develop the guidance given in the Global Programme of Action for sewage, and to set the standard in the approach to municipal wastewater management, by promoting global consensus on best practices and procedures to address municipal wastewater. The Plan aimed at supporting the efforts of States to address the serious public health problems, economic losses and the degradation of coastal ecosystems that result from the disposal in coastal areas of inadequately treated municipal wastewater.

35. By the time governments met in Montreal for the IGR-1, GPA Coordination Office under the Strategic Action Plan for Sewage compiled a set of case studies illustrating the environmental, social and economic benefits of addressing wastewater in coastal areas of East Asia, South Asia, Eastern Africa and the South-East Pacific; prepared a background document reviewing existing knowledge on best practices in municipal wastewater management and strategy options for possible technical, political, institutional and public awareness and education measures, as well as external financing possibilities; formulated draft recommendations for decision-making on municipal wastewater.

36. Additionally, GPA Coordination Office to build a cadre of human resources for effective and sustained implementation of the Strategic Action Plan on Municipal Wastewater, particularly at the municipality level, established effective partnership with the Train-Sea-Coast Programme (TSC). The TSC programme established in 1995 by the United Nations Division of Ocean Affairs and the Law of the Sea, Office of Legal Affairs, at the United Nations Headquarters (UN/DOALOS/OLA) is a training network in the field of coastal and ocean management. GPA Coordination Office target to use the TSC programme to build the capacities of the municipal planners, staff of different departments involved in sewage management (such as public works, water, sewage, health) and the industrial and private sectors.

37. **Physical alterations and destruction of habitats:** The physical alterations and destruction of habitats by physical, chemical or biological means constitute the most widespread, frequently irreversible, human impact on the coastal zone. GPA Coordination Office, therefore, in the light of the outcomes of the regional consultations selected physical alterations and destruction of habitats (PADH) as the second source category to concentrate on. The approach taken to address this source category was similar to the approach taken in the Strategic Action Plan on Municipal Wastewater as discussed above. It entailed a normative component, through the development of guidelines, checklists and key principles; a demonstration component, through the compilation of best practices and procedures; and a capacity-building component through facilitating partnerships to address concrete problems. The programme aimed to address threats posed by specific economic sectors such as tourism, aquaculture, mining and development of ports and harbour. To develop and implement the PADH programme, GPA Coordination Office directed resources to develop collaboration the Convention on Biological Diversity, the International Coral Reef Action Network, World Trade Organization, Food and Agriculture Organization of the United Nations, Wetlands International, National Institute for Coastal and Marine Management/RIKZ (as the host institute of the Global Programme of Action Coordination Office in the Netherlands) and relevant UNEP divisions, in particular the Division of Technology, Industry and Economics, the Coral Reef Unit and the Regional Seas Programme.

38. **Integrated coastal area and river-basin management:** GPA Coordination Office within the operational framework of its parent UNEP Division of Environmental Policy Implementation took the lead to promote the concept of integrated coastal area and river-basin management (ICARM) and mobilised actions to develop guidelines and pilot project. Initial works to highlight the linkage between river basin management and coastal zones management and promoting the concept of linked management were initiated with the Danish Hydrological Institute (DHI) within the framework of the Collaborative Centre Agreement between DHI and UNEP. Subsequently, cooperative agreements were reached with the Netherlands National Institute for Coastal and Marine Management/RIKZ (the host institute of the GPA Coordination Office), the Global Water Partnership, the International Network of Basin Organizations.

2.2.7 A clearing-house mechanism for the Programme

39. While adopting the GPA in 1995, States agreed to cooperate in the development of a clearing-house mechanism as a means of mobilizing experience and expertise, facilitating effective scientific, technical and financial cooperation, and capacity-building. GPA Coordination Office to this effect entered into dialogues with the lead organizations designated for each of the Global Programme of Action pollutant source-categories. GPA Coordination Office during 1996 and 1999 organized a series of meetings with representatives of United Nations agencies, Governments and secretariats of regional seas programmes to discuss the development and implementation of the clearing-house

at the regional and international levels. These consultative meetings resulted in agreements with partners and the programme got into motion. The central node of the CHM was launched in September 1999 on the occasion of the Twenty-second General Assembly special session for the review and appraisal of the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States. For the development of pollutant source category nodes, GPA Coordination Office continued its outreach efforts to respective UN agencies and other stakeholders and that resulted in establishing CHM nodes by the Secretariat of the Convention on Biological Diversity and the Integrated Coastal Management Global Web Service. GPA Coordination Office also initiated to include the development of clearing-house applications with the UNEP.Net programme, and linking with the United Nations Atlas of the Oceans project and interaction with the regional seas web-sites.

2.2.8 A new multilateral environmental agreement to address persistent organic pollutants

40. Persistent Organic Pollutants (POPs) are one of the Global Programme of Action source categories. POPs, are chemical substances and persist in the environment, bio-accumulate through the food web pose a risk of causing adverse effects to human health and the environment. To eliminate or restrict the production and use of POPs, an international environmental treaty was signed on 22 May 2001 in Stockholm, Sweden (henceforth called Stockholm Convention on Persistent Organic Pollutants) and this entered into force on 17 May 2004. The first meeting of the Conference of the Parties to the Convention took place in Punta del Este, Uruguay, 2–6 May 2005. The Convention seeks the reduction or elimination of releases from a number of intentionally produced listed chemicals, as well as the continuation of measures to minimize or eliminate releases of unintentionally produced persistent organic pollutants, such as dioxins and furans. Stockpiles and wastes containing persistent organic pollutants must be managed and disposed of in a safe, efficient, and environmentally sound manner, taking into account international rules, standards, and guidelines. A process incorporated into the Convention allows for substances to be added or current obligations to be modified as new information is obtained.

2.2.9 The first Inter-Governmental Review of the Programme

41. The representatives of Governments and the European Commission participating in the international conference held in Washington D.C., USA while adopting the Global Programme of Action agreed to hold “periodic intergovernmental review of the Global Programme of Action, taking into account regular assessments of the state of the marine environment” (Washington Declaration, Paragraph 13c). The Washington meeting report while elaborating on the institutional arrangements for the implementation of the Global Programme of Action also noted that “the terms of reference of periodic intergovernmental review meetings to be convened by UNEP, in close collaboration with the relevant organizations and institution” (UNEP (OCA)/LBA/IG.2/6, Paragraph 33e). This was subsequently endorsed by the United Nations General Assembly through its Resolution (A/RES/51/189) and by the Nineteenth Session of the UNEP Governing Council in its decisions (19/14A and 19/14B). In compliance to the Washington Declaration and follow-up resolutions of the United Nations General Assembly and UNEP Governing Council, the first inter-governmental review (IGR-1) meeting of the Global Programme of Action was convened

and the meeting was hosted by the Government of Canada in Montreal from 26-30 November 2001.

42. The representatives of 98 governments attending the IGR-1 through the Montreal Declaration (for details see Annex 1) reaffirmed that “implementation of the Global Programme of Action is primarily the task of national Governments. Regional seas programmes also play an important role in implementation and both should include the active involvement of all stakeholders”. They also reiterated their commitment that “to improve and accelerate the implementation of the Global Programme of Action by incorporating the aims, objectives and guidance of the Global Programme of Action into new and existing activities, action programmes, strategies and plans at the local, national, regional and global levels and into sectoral policies within our respective jurisdictions; ... and called on the United Nations agencies and programmes and international financial institutions to incorporate, where appropriate, the objectives of the Global Programme of Action into their respective work programmes, giving priority in the period 2002-2006 to addressing the impacts of sewage, physical alteration and destruction of habitats and nutrients on the marine environment, human health, poverty alleviation, food security and safety, water resources, biodiversity and affected industries”. The governments further committed to “strengthening the capacity of local and national authorities with relevant financial and other resources to identify and assess needs and alternative solutions to specific land-based sources of pollution; and to formulate, negotiate and implement contracts and other arrangements in partnership with the private sector (and) to give “due consideration to the positive and negative impacts of domestic legislation and policies, including, inter alia, fiscal measures, such as taxation and subsidies, on land-based activities degrading the marine and coastal environment.” (Montreal Declaration 2001; Paragraphs 5-9).

43. Taking into account the accomplishments of the initial start-up phase on the implementation of the Global Programme of Action and the outcomes of the IGR-1, the second phase of the Global Programme of Action was defined as “From Planning to Action” leading to the second inter-governmental review meeting held in Beijing, People’s republic of China in 2006.

2.3 Phase II (2002 to 2006): From planning to action

2.3.1 Strengthening Programme implementation at the national level

44. The implementation of the Global Programme of Action at the national level is of crucial importance for the achievement of the goals set out in the 1995 Programme, and the Montreal Declaration of 2001. To support governments in fulfilling their commitments articulated in the Montreal Declaration, GPA Coordination Office in its 2002-2006 work plan emphasized on the development of action-oriented national programmes of action through targeted work. This was geared to assist governments in “incorporating the aims, objectives and guidance of the Global Programme of Action into new and existing activities, action programmes, strategies and plans at the local, national, regional and global levels and into sectoral policies within their respective jurisdictions”. To this effort, the GPA Coordination Office in 2002 published a “Handbook on the Development and Implementation of National Programmes of Action for the Protection of the Marine Environment from Land-based Activities (in short NPA Handbook) to provide guidance for environmental managers and policy makers on how

to implement the GPA in their own countries. The Handbook advocated performance-based approach to planning that should focus on sustainable, pragmatic and integrated environmental management approaches and processes, such as integrated coastal area management, harmonized, as appropriate, with river basin management and land-use plans. On the basis of the priorities established, the governments are encouraged to define specific management objectives, both with respect to source categories and areas affected. Such objectives should be set forth in terms of overall goals, targets and timetables, as well as specific targets and timetables for areas affected and for individual industrial, agricultural, urban and other sectors. Furthermore, wherever possible, governments should take immediate preventive and remedial action using existing knowledge, resources, plans and processes. Such actions are expected to be guided by country's own governance structure, legislation and national budgeting principles and the mandate of ministries and institutions dealing with different aspects of coastal and marine environment and resources management.

45. Since the publication of the Handbook and its use in practice many lessons have been learned and many related policy developments gained importance. It was also evident that while many NPAs were formulated, concrete measures and actions were lagging far behind. From the overall experience the key conclusion has been moving towards sustainable integrated development is a learning process, it cannot be implemented through a fixed plan; it should be a flexible, adaptive system that can continuously evolve and improve. In the light of the experiences gained the GPA Coordination Office in 2006 brought out a new publication titled "Protecting coastal and marine environments from land-based activities: a guide for national action". In this revised version it is stressed that, to be successful it is important to take note of the financial, legislative, social and technical barriers while planning concrete actions and drafting a NPA.

46. The new 'Guide' emphasised on affordable programming and called for realistic, step-by-step implementation priorities within a cross-sectoral, participatory framework through a flexible and iterative process. Linkages with other strategic processes are made more explicit, such as the Millennium Development Goals, sustainable development partnerships, poverty reduction strategies and sectoral policies, and linkages between coastal areas and upstream river basins. The publication stressed on mobilisation of stakeholders and resources, and ensuring that activities fit into existing institutional, policy, societal and budgetary frameworks. The Guide for national actions acknowledged that needs and priorities vary greatly between countries, and thus action has to be tailor-made. NPAs are flexible processes and should be adapted to the prevailing circumstances in each country. That is why existing NPA documents, their titles and their development and implementation processes differ considerably.

47. The assessment of problems, constraints and opportunities to tackle problems, is one of the most important steps in the NPA process. It is therefore suggested that depending on the outcome of such an assessment, a country can choose its NPA-route, which could involve linking up to other existing relevant programmes, implementing a limited NPA or taking on a full-scale NPA. In other words governments are encouraged not to ask itself 'do we have a NPA document, but to reflect on a series of inter-related questions such as 'how effective are we in tackling land-based sources of marine pollution?' 'How can our action be improved to become more successful?', 'What concrete steps are realistic and affordable and can thus be undertaken to better address land-based sources of pollution facing the country?', or 'What action needs to be taken at national level and what activities are required on the ground at local level'? The overall objective of developing a NPA should be to protect the marine environment from land-based activities by making the link between freshwater, coastal and marine

environments. The focus should be on development of realistic action that complements other programmes and activities and this in turn will determine which NPA route a country should follow. Based on the review of various policy instruments three possible paths: short, intermediate and full are envisaged.

48. The *short NPA path* is recommended for countries where the coastal and marine environment is fully integrated into ongoing strategies, programmes and activities to achieve sustainable development. For such cases a separate stand-alone NPA is not recommended, but calls for a drafting a policy note explaining the mechanisms through which NPA relevant activities are dealt with in the country, and suggested monitoring framework to make sure coastal and marine environments remain part of the existing mechanisms and the problems are reduced. The *intermediate NPA path* is for countries that have already operational mechanisms through which they are aiming to achieve more sustainable development, but the coastal and marine environment is not always sufficiently incorporated. Sometimes the capacity and speed at which activities take place ask for specific action. Emphasis should be on networking to ensure that existing planning frameworks such as national environmental management strategies or national sustainable development plan incorporate action components and funds to address land-based activities towards protection of the coastal and marine environment. The *full NPA path* is proposed for countries, which do not have appropriate mechanisms in operation to ensure that the coastal and marine environment is sufficiently protected from land-based activities. For such countries a fully-fledged NPA process recommended that should go through the entire (periodically repeated) NPA cycle in all its detail, making sure that steps are taken in close cooperation with relevant institutions and processes.

49. By the end of 2006 the countries that have developed and/or were developing NPA increased significantly. According to GPA Coordination Office 2002-2006 progress report by October 2006, 63 countries were implementing GPA albeit in different degrees either through specifically designed national programmes of action, or through national programme of action-related processes such as national development policies, programmes, initiatives and frameworks. Of the reported countries; 17 were in Africa (Algeria, Angola, Benin, Côte d'Ivoire, Egypt, Equatorial Guinea, Ghana, Guinea-Bissau, Liberia, Libya, Morocco, Nigeria, Sao Tome and Principe, Sierra Leone, United Republic of Tanzania, Tunisia and Togo); 7 in Asia and the Pacific (Australia, Bangladesh, China, India, Pakistan, Sri Lanka and Tonga); 19 in Europe (Albania, Bosnia and Herzegovina, Croatia, Cyprus, Finland, France (Mediterranean), Greece, Iceland, Israel, Italy, Kazakhstan, Malta, Monaco, the former Serbia and Montenegro, Slovenia, Spain, Russian Federation (Caspian Sea and Arctic), Turkey (Mediterranean) and Turkmenistan); 15 in Latin America and the Caribbean (Barbados, Belize, Brazil, Chile, Colombia, Costa Rica (Caribbean), Ecuador, Honduras, Jamaica, Mexico (Caribbean), Panama, Peru, St. Lucia, the Bahamas, and Trinidad and Tobago); one in North America (Canada) and 4 in West Asia (Lebanon, Palestinian Authority, Syria and Yemen) (Progress Report Para 8, UNEP/GPA/IGR.2/2. 2006). The reasons for this success in the development of such large numbers of NPAs over the period of 2002-2006, as noted by the Secretariat, are due to strong leadership and political will at national level supported by strong collaboration with the Global Environment Facility (GEF), donor countries and international and regional partners.

50. Governments while embarked on developing NPA also initiated formulation of related new instruments for environmental protection such as specific regulations controlling discharges, introducing environmental taxes, environmental quality criteria and emission standards. Increase in the use of environmental impact assessments and reliance on integrated coastal management practices were also been reported.

Practically in most countries all land-based activities were targeted to varying degrees by these new instruments.

51. Upon finalisation of the NPAs, many moved into actual implementation of the NPA through pilot projects to address priority issues. The projects implemented by the countries were aimed to demonstrate sustainable management approaches, testing of new technologies, stimulating multi-agency cooperation and developing partnership between the state and non-state actors to address land-based sources of coastal and marine pollution. The partnership with non-state actors namely the non-governmental organizations and private sector institutions, are of worth noting as an example of new institutional arrangements for coastal resources management and addressing land-based sources of marine pollution through application of appropriate technology and management systems suited to local circumstances. These pilot projects have mainly been implemented with the resources from national governments and other participating institutions. However, for many the GPA Coordination Office also provided financial and technical supports and helped countries to access resources from the GEF and other development partners.

BOX 1: Reversing the Stress on the Marine Ecosystem Establishment of a Waste Stock Exchange System in Ghana

Ghana has a coastline of 550 km, which is 7% of country's land area but the home to 20 million people (i.e., 25% of the nation's total population) and housed around 70% of industries and businesses. However, the marine and coastal resources of Ghana exist within a very fragile ecosystem and pressures on coastal ecosystems are high due to high concentrations of human activities in coastal zones. The Ghanaian Ministry of Environment in collaboration with the GEF supported Guinea Current Large Marine Ecosystem Project developed its NPA which identified five priority areas for action: waste management, fisheries degradation, wetland and mangrove degradation, industrial pollution of water resources in the coastal zone and coastal erosion.

An important step in the protection of the marine environment has been the selection of waste management as a key theme for a pilot project. The pilot project on waste management illustrates the innovative approach to sustainable development by establishing a Waste Stock Exchange Management System by a Ghana-based company. The company took the slogan "one person's waste, another person's raw material" and mobilised support that contributed to achieving significant results in the field of sustainable waste-management. The project is a public-private partnership. This independent self-financing and fully functional Waste Stock Exchange Management System included the identification, characterization, and quantification of tradable waste, the development of mechanisms to facilitate the functioning and autonomy of the waste stock exchange, the creation of environmental awareness of market and economic incentives for environmental pollution control, the setting up of processes to minimize pollution from land-based activities, and the institutionalization of integrated pollution prevention and control strategies and actions. A key product of the project is processing waste oil into residual oil products. It has set-up a waste oil treatment plant at the Tema Port facility near Accra, Ghana.

BOX 2: Implementing the GPA at the local level in the Philippines

Puerto Galera is a town of 30,000 permanent residents who are heavily dependent on tourism which is the main source of income for residents and the local government. Tourist numbers rose dramatically from 138,000 in 2002 to reportedly more than 1 million in 2004. The increase in tourist numbers has been proportional to increasing discharges of sewage pollution to the marine environment including tourist beaches. Puerto Galera is in close proximity to a highly sensitive marine biodiversity area, the

Verde Island Passage. Sewage treatment has therefore become a priority action. However, Puerto Galera is a small municipality experimenting with a relatively new concept so the immediate issue was not building sewage treatment plants, but rather making sure the prevailing institutional environment was right - the legal, political, financial, and social challenges - which would make or break the sewerage project.

The project involved the collection of wastewater from the households and commercial establishments in the three areas. The wastewater would then be pumped to three sewage treatment plants and treated before being discharged to the sea or reused. The project has a dual purpose of improving the environment and sanitation, and protecting the water quality of waterways and the coastal waters, thus serving the interests of individual residents and resort owners as well as wider public and environmental interests.

Political leadership, vision and will were vital ingredients for the success of the project. The mayor of Puerto Galera, Hon. Hubbert Christopher Dolor was the 'champion' of the cause and pushed forward the implementation of the project in partnership with a private sector. A key challenge was fundraising. The municipality did not have a track record in undertaking such an investment and as such it had limited options in the form of pure debt financing or joint venture arrangements. The local government had to address the issue of investor confidence in order to attract funding and so building up the financial resources of the municipality was critical in order for it to access loans, attract private sector investors and to show it could pay its debt obligations.

A willingness to pay survey gave good indications of the affordability, acceptability, and potential financial viability for the primary users of the sewage treatment plants. The Development Bank of the Philippines provided the financial support of the project with a 15-year loan facility to cover capital investment costs.

2.3.2 Addressing other pollution source categories

52. GPA Coordination Office, in the light of the outcomes of the IGR-1, also invested time and resources to address other priority issues such as Sewage, Physical Alteration and Destruction of Habitats (PADH), Nutrient, Integrated Coastal Area and River-basin Management (ICRAM) and strengthening the GPA Clearing-House Mechanism.

2.3.2.1 Sewage

53. The GPA Coordination Office in cooperation with the United Nations Human Settlements Programme (UN-Habitat), the Water Supply and Sanitation Collaborative Council and WHO developed the Strategic Action Plan on Municipal Wastewater to address one of the major Global Programme of Action pollution source categories affecting coastal waters. The programme was designed to support a holistic approach to sanitation and sewage management. Under this collaborative arrangement in 2004 a guidance document titled "Guidelines on municipal wastewater management"² was produced, to serve as a practical guide for decision-makers and professionals on how to plan, design, and finance appropriate and environmentally sound municipal wastewater discharge systems. The document elucidated ten key principles to facilitate local and national action on municipal wastewater.

BOX 3. 10 key principles to facilitate local and national action on municipal wastewater

² https://esa.un.org/iys/docs/san_lib_docs/guidelines_on_municipal_wastewater_english.pdf

- 1. Secure political commitment and domestic financial resources.** A political climate has to be created in which high priority is assigned to all the aspects of sustainable municipal wastewater management, including the allocation of sufficient domestic resources.
- 2. Create an enabling environment at national and local levels.** Public authorities remain responsible for water and wastewater services. The 'subsidiarity principle', i.e. the delegation of responsibilities to the appropriate level of governance, applies to the entire water sector. National authorities should create the policy, legal, regulatory, institutional and financial frameworks to support the delivery of services at the municipal level in a transparent, participatory and decentralized manner.
- 3. Do not restrict water supply and sanitation to taps and toilets.** A holistic approach to water supply and sanitation should be adopted. This incorporates not only the provision of household services, but various other components of water resource management, including protection of the resource that provides the water, wastewater collection, treatment, reuse and reallocation to the natural environment. Addressing the environmental dimensions mitigates direct and indirect impacts on human and ecosystem health.
- 4. Develop integrated urban water supply and sanitation management systems also addressing environmental impacts.** Municipal wastewater management is part of a wider set of urban water services. The wastewater component is usually positioned at the end of a water resource management chain. Integration of relevant institutional, technical, sectoral, and costing issues of all major components of the chain is required. Consideration should be given to the joint development, management, and/or delivery of drinking water supply and sanitation services.
- 5. Adopt a long-term perspective, taking action step-by-step, starting now.** The high costs of wastewater systems necessitate a long-term, step-by-step approach, minimizing current and future environmental and human health damage as much as possible within existing budgetary limits. Non-action imposes great costs on current and future generations and misses out on the potential of re-using valuable resources. A step-by-step approach allows for the implementation of feasible, tailor-made and cost-effective measures that will help to reach long-term management objectives.
- 6. Use well-defined time-lines, and time-bound targets and indicators.** Properly quantified thresholds, time-bound targets and indicators are indispensable instruments for priority setting, resource allocation, progress reporting and evaluation.
- 7. Select appropriate technology for efficient and cost-effective use of water resources and consider ecological sanitation alternatives.** Sound water management relies on the preservation and efficient utilization of water resources. Pollution prevention at the source, efficient use and re-use of water, and application of appropriate low-cost treatment technologies will result in a reduction in wastewater quantity and in investment savings related to construction, operation and maintenance of sewerage systems and treatment facilities. Depending on the local physical and socio-economic situation, different technologies will be appropriate. Eco-technology is a valid alternative to traditional engineering and technical solutions.
- 8. Apply demand-driven approaches. In selecting appropriate technology and management options attention must be given to users' preferences and their ability and willingness to pay.** Comprehensive analyses of present and future societal demands are required, and strong support and acceptance from local communities should be secured. With such analyses realistic choices can be made from a wide range of technological, financial and management options. Different systems can be selected for different zones in urban areas.
- 9. Involve all stakeholders from the beginning and ensure transparency in management and decision-making processes.** Efforts and actions on domestic sewage issues must involve pro-active participation and contributions of both governmental and non-governmental stakeholders. Actors stem from household and neighbourhood levels to regional, national and even international levels, and possibly

the private sector. Early, continuous, targeted and transparent communication between all parties is required to establish firm partnerships. The private sector can act as a partner in building and improving infrastructure, in operating and maintaining of facilities, or in providing administrative services.

10. Ensure financial stability and sustainability. Link the municipal wastewater sector to other economic sectors. Sound and appropriate wastewater management may require substantial construction and operational investments in wastewater infrastructure and treatment facilities. Relative to the water supply sector, cost recovery in the wastewater sector is traditionally a long process. Any cost recover programme must take into consideration social equity. Developments in other (socio-) economic sectors, for instance water supply or tourism, may create opportunities to address sanitation at the same time. Linking wastewater management with other sectors can ensure faster cost-recovery, risk-reduction, financial stability and sustainable implementation. Innovative, more flexible and effective financial management mechanisms (e.g. micro-financing, revolving funds, risk-sharing alternatives, municipal bonds) have to be considered. Public-private partnerships, and also public-public partnerships, are important tools to assist local governments in initial financing and operating the infrastructure for wastewater management.

54. The “Guidelines and the 10 Keys” are considered prerequisite for successful municipal wastewater Management, and they both cover policy issues, management approaches, technology selection and financing mechanisms. The document aimed to promote global consensus, to set international standards and to encourage innovative approaches, comprising integrated wastewater management, enhanced institutional set-ups, innovative financing mechanisms, multi-stakeholder and community involvement, and low-cost environmentally sound technologies. The guidelines, backed by the web-based Sanitation Connection (SANICON) knowledge base, were widely disseminated.

55. To raise the profile of the Strategic Action Plan on Municipal Wastewater, GPA Coordination Office submitted an information document titled “Financing wastewater collection and treatment in relation to the Millennium Development Goals and World Summit on Sustainable Development targets on water and sanitation” during the Eighth special session of the Governing Council/ Global Ministerial Environment Forum held in Jeju, Republic of Korea, 29-31 March 2004 (UNEP/GCSS.VIII/INF/4). This paper argued that given the current rate of the world population growth, the number of people without access to water supply and sanitation will remain the same or even increase, if financial commitment to these sectors is not improved. The current amount of resources spent on water supply and sanitation issues urgently needs to be more effectively allocated to ensure that countries can address the pressing issues of poverty eradication and public health in a sustainable manner. The paper also argued that there is a need for a paradigm shift, both in thinking and action, with respect to basic water supply and sanitation. Water supply sanitation discussion should no longer restrict to issue such as “taps and toilets”, but must incorporate all components of the water management process. In view of the WSSD Plan of Implementation and the decision adopted by the UNEP Governing Council in its 22nd session (GC22/2/II), the paper noted that the focus of sanitation services should include wastewater collection, treatment, re-use and re-allocation to the environment. The UNEP Governing Council welcomed them in the “Jeju Initiative” and recommended them as best practice principles suitable for wide application by local and national authorities, private sector and relevant international organisations. An abridged version of the aforementioned paper was later published in the March 2004 issue of the UNEP publication “Our Planet”.

56. The GPA Coordination Office developed a training course “Improving Municipal Wastewater Management in Coastal Cities” with the UNESCO-IHE Institute for Water Education. This was a five day interactive course, designed based on the fundamentals of

the United Nations Division for Ocean Affairs and the Law of the Sea (UN/DOALOS) Train-Sea Coast programme. The course was fully documented in 5 languages: English, Spanish, Portuguese, Russian and Turkish and was embedded in capacity building networks such as UNDP CAP-NET. The course was delivered 17 times in Africa, Europe, Latin America, Asia and the Pacific, and attended by 400 participants from 34 countries. Participants were from Angola, Argentina, Bangladesh, Brazil, China, Colombia, the Cook Islands, Djibouti, the Federated States of Micronesia, Egypt, Fiji, Guam, Jordan, Kenya, Kiribati, the Maldives, Mozambique, Pakistan, Palau, Panama, Papua New Guinea, Philippines, the Republic of the Marshall Islands, Samoa, Saudi Arabia, the Solomon Islands, South Africa, Sri Lanka, the Sudan, United Republic of Tanzania, Turkey, Tuvalu, Vanuatu and Yemen. Nine of these countries are small island developing States. Most are party to the various regional seas conventions and action plans, and thus constitute an integral part of GPA implementation at the regional level.

57. This capacity-building initiative also a GPA contribution to the implementation of the Bali Strategic Plan on Technology Support and Capacity-building, adopted by the UNEP Governing Council at its twenty-third session in February 2005. The programme includes both training of trainers and training of practitioners. As a result, the training has led to an improvement in the identification, formulation and implementation of sanitation infrastructures. Building on these successes, the European Union Water Facility and United Nations Development Programme-GEF provided additional funding for an expansion of the training programmes in the in Africa, the Caribbean and the Pacific, and with a special focus on small island developing States.

58. As a member of UN-Water, the GPA Coordination Office contributed to the WHO and UNICEF joint monitoring programme for water supply and sanitation. The joint monitoring programme reports on the status of water supply and sanitation, and supports countries in their efforts to monitor this sector, which enable better planning and management. On 20 December 2006, when the UN General Assembly declared 2008 as the International Year of Sanitation, GPA Coordination Office represented UNEP in the Steering Committee of the International Year of Sanitation 2008. The International Year of Sanitation promoted five key messages "Sanitation is vital for health; Sanitation contributes to social development; Sanitation is a good economic investment; Sanitation helps the environment; Sanitation is achievable" all consistent with GPA approach to sanitation.

2.3.2.2 Physical alteration and destruction of habitats

59. The Physical Alterations and Destruction of Habitats (PADH) programme emphasises the economic, social and environmental significance of the coast and aims to support the efforts of stakeholders in protecting coastal and marine habitats against alterations and destructions from human induced development activities. The coast or near shore environments that fall between the sea and land, are the most diverse and dynamic environment on earth. Depending on a variety of physiographic factors, the coastal habitat varies. Important coastal habitats, most commonly recognized include coral reefs, mangroves, seagrass meadows, salt marshes and tidal flats. The majority of the world's known economically important marine species lives within near-shore zones or depend upon coastal habitats such as mangroves and coral reefs for a part of their life cycle. The importance of protecting the habitats from human induced activities are therefore of paramount importance. GPA Coordination Office through the PADH programme aimed to:

- a. Build capacities within governments to address the urgent threats to coastal zones through, among other issues, strengthening legislation and regulatory capacity and facilitating multi-stakeholder/partnership fora;
- b. Safeguard the ecosystem function, maintain the integrity and biological diversity of habitats, which are of major socio-economic and ecological interest through integrated management of coastal areas;
- c. Promote effective action in specific locations to reduce and prevent the degradation of the coastal and marine environment caused by pollution and physical alteration and destruction of habitats, and where practicable, restore marine and coastal habitats that have been adversely affected by anthropogenic activities.

60. The programme focuses on sediment mobilisation effects by four economic sectors that pose threats to habitats. The sectors include tourism; aquaculture; mining (sand and aggregate extraction) and ports and harbour for reasons explained below.

61. **Tourism** is already the world's largest industry, and one that is continuously growing. The number of international tourists increased from 170 million in 1970 to 703 million in 2002. "Tourism Vision 2020" prepared by the World Tourism Organisation with 1995 as the base year predicts that by 2020 the global number of travellers will reach to 1.6 billion (an increase of 4.1% per annum) and the travellers will spend around US\$ 2 trillion every year on tourism.

62. Often tourism is qualified as a double-edged activity. It has the potential to contribute in a positive manner to socio-economic achievements but, at the same time, its fast and sometimes uncontrolled growth can be the major cause of degradation of the environment and loss of local identity and traditional cultures. Biological and physical resources are in fact the assets that attract tourists. However, the stress imposed by tourism activities on fragile ecosystems accelerates and aggravates their depletion. Paradoxically, the very success of tourism may lead to the degradation of the natural environment; by depleting natural resources tourism reduces the site attractiveness to tourists, the very commodity that tourism has to offer. The interdependent, cyclic relationship between the tourism industry and the environment is fragile and requires precautionary and preventative action.

63. Therefore, given the economic significance of tourism, and projected growth in the activity, it is imperative that steps be taken immediately to protect the natural resources on which tourism depends and without overlooking cultural or architectural heritage. Maintaining the balance between resource use and good environmental quality requires political commitment to undertake clear and consistent policy intervention, improve planning and management systems, immediate remedial action, and develop a base knowledge from which to operate.

64. **Aquaculture** is the fastest growing animal food-producing sector in the world. Its contribution to the world total supplies of fish, shellfish and molluscs has grown steadily, increasing from 3.9 per cent of total production in 1970 to 27.3 per cent in 2000, and it is believed that there is potential for a further expansion in many parts of the world and for many species. In 2001 more than half of the global aquaculture production originated from marine or brackish coastal waters. It is also argued that aquaculture as an expanding and productive industry in the coastal zone has the potential to make a significant contribution to the world's aquatic food supply, food security, and alleviation of poverty. These benefits can however be realised only if the aquaculture activities are integrated with other coastal activities and undertaken in a

sustainable manner. Conversely, poorly planned, ill-sited and badly managed aquaculture facilities have a number of serious negative impacts — loss or alteration of habitats, including changes of the natural coastlines and reduction or totally obliteration of natural habitats especially mangroves and wetlands in tropical areas.

65. In many places fishing is affected as fish spawning and nursery grounds are being destroyed or degraded. The siting of aquaculture facilities in mangrove areas not only impairs the habitat itself but also impairs coast protection and other ecological functions of the ecosystem and deprives the local communities of their livelihoods. Expansion of aquaculture leads not only to significant physical alteration of coastal areas concerned but also to sediment mobilisation, which often effects a much larger area. It is therefore very important that the potential effects beyond the altered area and the cumulative impacts of a series of facilities in a particular area be considered before development and steps taken to minimise adverse impacts. Adequate assessment and planning in the pre-construction phase is crucial as opportunities for mitigation during or after construction phase is very limited and prohibitively expensive.

66. The rapid development of the industry has evoked much discussion over its impacts, both environmental and socio-economic. Many environmental impacts of aquaculture have led to concerns about the sustainability of the industry itself and much effort has also been devoted to identify and promote management practices which will facilitate the industry to grow in a sustainable manner.

67. **Mining:** One of the immediate outcomes of expanding urbanization within the coastal areas is the rapid growth in the construction industry and the escalating demands for sand. With sand nourishment gaining popularity as a more acceptable approach to erosion management especially in countries with limited land based sand reserves, the demand for sand from offshore areas has sharply increased. Although not as widespread, mining the coral reefs to provide construction material is a critical issue in many countries.

68. Mining is an expanding industry that has major implications in the coastal areas. Among the more common minerals mined are rock coral, shell and sand used as building materials, construction aggregate, and as fill material in reclamation, bauxite, and placer deposits of metals such as tin, chromium, manganese and titanium. A more recent development is the large-scale mining of offshore sand to provide for the beach nourishment programmes that are becoming increasingly popular and for restoration projects. Of the current mining activities, sand and coral mining are considered the two most important activities that have direct and immediate negative impacts on the physical stability and sustainability of the coastal zone. Although global estimates are not available, national estimates indicate that sand mining is escalating in most countries. Technological advances in dredger design have resulted in more efficient and powerful dredgers that can operate in locations hitherto not accessible. While in the case of coral, there are some global estimates on coral reef degradation but these do not indicate quantities attributed to coral mining. However, national estimates in some countries especially in Eastern Africa, Caribbean, South and Southeast Asia indicate that of coral mining continues at alarmingly high levels.

69. Both small-scale and large-scale mining of sand is concentrated in estuaries, drowned river valleys, beaches, dunes, and near-shore areas. Mining of sand from such areas affect the littoral sand budget leading to erosion in nearby areas. Large-scale mining of sand is also conducted outside the coastal zone, in offshore areas and in riverbeds and such mining too causes alterations in sediment mobilization and can lead

to increased coastal instability. Topographic changes caused by underwater dredging have immediate impacts on the near-shore waves and currents. These hydrodynamic changes can rapidly lead to local perturbations in the littoral transport patterns and eventually changes in the shoreline morphology. The other important adverse impacts of coastal mining are physical damage or destruction of habitats, which are cleared, eroded, buried or crushed by mining activities. Resulting turbidity and alteration of currents often extend impact zones well beyond the immediate mining site. Corals and seagrass beds are particularly sensitive to increased sediments loads and these habitats can easily be chronically or permanently degraded due to coastal mining.

70. **Ports and Harbours:** The global need for coastal facilities has risen dramatically in the last decade due to growing commercial, industrial and recreational needs. Liberalization of trade and increased reliance on international trade as the primary engine for economic growth and development has been major factors in the rapid development of ports during the last decades. New ports and harbours are being developed and existing facilities expanded with great momentum.

71. Port facilities not only require large areas of coastal land and waters for their construction, conversion or extension, but also for the operation of all port installations, accompanying industrial and commercial installations and transport systems. Marine structures and installations (breakwaters, quays, groins etc.) also require large areas of land and water. The impacts of ports on the coastal environment are considerable. Effects and changes at times occur particularly in sensitive areas, due to dredging, soil excavation, soil replacement or backfilling, surface sealing, water drainage and high ground loads. Although these are clearly unavoidable given the intended use of the installation, proper infrastructure planning will nevertheless contribute to a degree of environmental protection.

72. Dredging and reclamation associated with port and navigational channel construction and maintenance is probably the most significant ocean environmental effect of port operations. The global volume of port related dredging is estimated to be 232-382 million cubic metres per year for capital dredging and 80-100 million cubic metres per year for maintenance dredging. Most dredging spoils are dumped at sea. About 15-18% is used for reclamation and construction of artificial islands. In addition about 50 million cubic metres per year are dredged directly for reclamation, port construction or other needs for fill. Impacts of dredging are very broad and occur not only on the dredged site but also on adjacent areas. Dredging can disturb benthic ecosystems and generate suspended sediment that increases turbidity. Although dredged material can be disposed of at sea on regulated sites as long as it does not pose a threat to mortality of organisms, it has been documented that re-suspended spoil in the form of fine clay particles can be transported large distances if currents in the area are strong enough, thus posing a danger to marine habitats in particular seagrass beds and coral reefs.

73. But often development of the ports and harbour facilities is unavoidable given the national and global economic significance of their intended use. Maritime transport carries the bulk of the world cargoes and is considered the most environmentally efficient mode of transportation. Total world amount of products loaded or unloaded in the world's ports reached 5.83 billion tons in 2002, and the world port traffic is expected to continue to grow. In view of the above, opportunities to minimize significant impacts must not be overlooked in the planning and design phases, as mitigation or restoration during or after construction is prohibitively expensive. To address sustainable port development, effective government policy and regulations are important, but must be supported by industry self-regulation. This should include the

adoption of good management practices during planning, design and operations, in which an optimal balance may be found between socio-economic activities and physical, morphological and ecological issues.

74. While effective government policy and regulation are important, self-regulation by the industry and adoption of good management practices in planning design and operations of port facilities will significantly help to manage environmental risks arising out of their operations thus ensuring sustainable port development. This should include the adoption of good management practices during planning, design and operations, in which an optimal balance may be found between socio-economic activities and physical, morphological and ecological issues.

2.3.2.3 Building consensus in addressing physical alteration and destruction of habitats

75. In line with other GPA programmes, as noted earlier, the PADH programme entails a normative component, through the development of guidelines, checklists and key principles; a demonstration component through the compilation of best practices and procedures; and a capacity building component through facilitating partnerships to address critical issues and problems. Where practicable, restore marine and coastal habitats that have been adversely affected by anthropogenic activities through enforcement of legislations and regulations including economic instruments.

76. GPA Coordination Office in collaboration with various stakeholders formulated a set of key principles for minimizing physical alteration of coastal areas, destruction of habitats and sediment mobilization. These principles are intended to (a) increase awareness and recognition of actions necessary to minimise the impacts of tourism, aquaculture, mining and port and harbour development on the coastal zone; (b) provide direction in the development of these economically important sectors so that they do not in any way hamper environmentally sustainable development within the coastal zone and (c) serve as a consensus guide to national and sub-national decision makers and the stakeholders in the industry to trigger actions for minimising physical alteration and habitat destruction. Various industry and business associations, the United Nations agencies and intergovernmental bodies endorsed these key principles due to persistence efforts of the GPA Coordination Office.

77. Principles relating to ports and harbours were endorsed by institutions namely International Navigation Organization (PIANC) and private sector institutions, such as the International Association of Ports and Harbour (IAPH), the International Association of Dredging Companies (IADC) and the Central Dredging Association (CEDA). In the case of principles for tourism development, endorsement has come from United Nations Industrial Development Organisation (UNIDO) and United Nations World Tourism Organisation (UNWTO). Key principles for aquaculture have been developed in a joint effort with FAO, the Network of Aquaculture Centres in Asia and the Pacific (NACA), the World Bank and the World Wide Fund for Nature (WWF). A set of guiding principles for shrimp aquaculture have also been developed, which was endorsed in February 2006 by the Governing Council of the Network of Aquaculture Centres in Asia and the Pacific, and also endorsement by FAO Committee on Fisheries in its 2006 meeting in New Delhi, India.

78. The implementation of these principles takes place at the national level through their incorporation in various sectoral policies and through the initiation of pilot projects within the framework of national programmes of action. For example, in the Bahamas, the tourism principles are used as a basis to develop the national sustainable tourism awareness programme – a pilot initiative supported by the GPA Coordination

Office in partnership with the secretariat of the Convention on Biological Diversity. This led to the 2006 Small Island Developing States Tourism Conference in the Bahamas, co-sponsored by the United Nations World Tourism Organisation (UNWTO) and the University of the West Indies. GPA Coordination Office also joined United Nations Industrial Development Organization (UNIDO) and United Nations World Tourism Organization (UNWTO) to develop a project “Reduction of environmental impact from coastal tourism through introduction of policy changes and strengthening public-private partnerships” and secured GEF resources. The project was designed to address the negative impacts of tourism on the coastal and marine environment in sub-Saharan Africa including Cameroon, Gambia, Ghana, Kenya, Mozambique, Nigeria, Senegal, Seychelles and Tanzania and to pilot implementation of the guiding principles developed under UNEP-GPA/UNIDO/UNWTO collaboration. The project promoted development of sustainable tourism policies and strategies and the implementation of pilot demonstration projects.

2.3.4 Enhancing the knowledge-base

79. GPA Coordination Office carried out a number of studies such as review of legislation, rules and procedures that are currently in place to prevent the further degradation of the coastal and marine environment caused by physical alterations and destruction of habitats. The objectives of the studies were to review coastal legislation, and analyse present resource utilisation patterns to suggest new policy measure to improve the resource management practise. 12 studies were conducted covering 22 countries including Bangladesh, Belize, Colombia, the Comoros, Cuba, Guatemala, India, Jamaica, Kenya, Madagascar, Maldives, Mauritius, Mexico, Mozambique, Pakistan, Reunion (France), Saint Lucia, Seychelles, Sri Lanka, United Republic of Tanzania, Trinidad and Tobago, and Venezuela (For details see Appendix 5).

2.3.4.1 Nutrient pollution

80. Nutrient over-enrichment, an increasing problem worldwide was clearly recognised by governments while adopting the Global Programme of Action. In the coastal environment, most concern has been over increases of nitrogen, which stimulates algal growth and reduces the quality of light in the water columns leading to a depletion of oxygen, which in turn reduces the ability of other marine organisms to exist and lead to the formation of dead anoxic zones. GPA Coordination Office taking into account the actions proposed in the Global Programme of Action such as “identification of areas where nutrient inputs are likely to cause pollution, directly or indirectly; identification of point sources and diffuse sources of nutrient inputs into these areas; identification of areas where changes in anthropogenic nutrient inputs are causing or are likely to cause pollution, either directly or indirectly, and prioritization of these areas for action...” (Paragraph 130) developed cooperative work programme with UNEP Division of Technology, Industry and Economics and International Fertilizer Industry Association (IFA), specifically to design action programme drawing from the 1997 UNEP-IFA joint report “Mineral Fertilizer Use and the Environment”.

81. In this pursuit, a joint UNEP-Woods Hole Research Center (WHRC) workshop on 8-10 March, 2006 brought together members of the scientific and policy making communities in Paris to take stock of scientific understanding of the effects of reactive nitrogen in the environment and to explore what policy measures may be necessary to address surpluses and deficiencies of reactive nitrogen in the environment. In the light of the outcomes of this workshop, GPA Coordination Office facilitated a special side event in the margin of the IGR-2 in Beijing on 19 October 2006. This brought together experts and policy makers interested and/or active on issues of freshwater, coastal and

marine ecosystem management and helped the scientific and policy communities to better understand the issues and agreement to work together. The meeting participants concluded to work in cooperation on capacity building needs of governments and relevant scientific bodies on data, research, assessment, monitoring and policy design. The possibility of establishing national or regional level projects in countries or regions where governments are seeking to develop policies to address critical reactive nitrogen management issues was also agreed upon, and GPA Coordination Office was requested to facilitate this process.

2.3.4.2 Integrated coastal area and river-basin management

82. The Global Programme of Action is the only intergovernmental programme that addresses the natural inter-linkages between freshwater and the coast. GPA Coordination Office through the integrated coastal area and river basin management (ICRAM) programme addresses the institutional divides between the fresh and salt water community. GPA Coordination Office firmly believe that management linkage between the rivers, estuaries, coast and ocean is an essential element for the implementation of the GPA. The core focus of the ICRAM programme has been to develop and promote the ICARM concept and guiding principles. To promote ICRAM concept at global level FreshCo partnership was established as a platform to exchange experiences of some 20 organisations active in the field of integrated management of river and coast. Under the FreshCo initiative ICRAM guiding principles were developed. A set of 12 ICRAM guiding principles include recommendations for managers, policymakers and decision makers, focusing on identifying shared issues, needs and benefits for integrated coastal area and river basin management; securing political commitment for such management; defining common management goals and information platforms; and creating an enabling environment for the management of rivers and coasts to achieve sustainable solutions at transboundary, national, river basin and local levels. The principles were discussed with an inter-agency expert group, and then presented to a wider audience during the third World Water Forum in Japan, 2003. The principles have led to greater awareness of the need to consider freshwater and saltwater issues in conjunction with each other, and to the development of progress markers.

83. GPA Coordination Office worked with partners to identify progress markers to enhance awareness and recognition of the critical link between the river basin and coastal areas for the sustenance of the ecosystems and to help the planners and managers of resources to assess progress towards linked management of catchments and coasts. The methodology developed has been tested and extensively discussed in a series of regional and global ICRAM stakeholders meetings. This led to the publication of the “Ecosystem-Based Management: Markers for Assessing Progress”.

2.3.4.3 Developing guiding principles for post-tsunami rehabilitation and reconstruction

84. After the devastating tsunami of December 2004, to guide the massive reconstruction effort, GPA Coordination Office developed 12 guiding principles charting the basis and way forward for environmentally sound coastal rehabilitation. The principles 1 to 7 focus on the priority technical measures. These address what must be done in order to better prepare shorefront communities for future change and to design and implement a rehabilitation and reconstruction process that, where possible, creates conditions superior to those that were present before the tsunami struck. They draw on the scientific knowledge that has evolved in recent decades as coastal processes and their interaction with human activities have been analysed. The lessons learned from

the reconstruction and rehabilitation following other natural disasters form the substance of the first seven principles. In any emergency, the order in which actions are taken is important. The delineation of construction setbacks and improving the long-term conditions of the poor are top priorities and are, therefore, addressed first in the Principles. Principles 8 through 12 deal with how to apply the principles. These principles draw upon the experience in dozens of nations over the past forty years in the evolution of what has come to be called "integrated coastal management" (ICM). These principles address the processes of public participation, the usefulness of setting unambiguous goals at both national and local scales, the evaluation of results, and the dissemination of experience and new knowledge.

85. These guiding principles were discussed in a meeting jointly convened by the GPA Coordination Office and UNEP Tsunami Disaster Task Force in Cairo on 17 February 2005. The meeting attended by all the tsunami affected countries (Bangladesh, India, Indonesia, Kenya, Malaysia, Maldives, Myanmar, Seychelles, Sri Lanka, Thailand, United Republic of Tanzania, Yemen) and representatives of UNEP Regional Seas Programme, international organizations and institutions (e.g., the United Kingdom Department for Environment, Food and Rural Affairs (DEFRA) and Department for International Development (DFID), FAO, UNESCO, World Bank, Islamic Development Bank, League of Arab States, The World Conservation Union (IUCN) and World Wide Fund for Nature (WWF) discussed and adopted the set of guiding principles presented by the GPA Coordination Office. Subsequently, GPA Coordination Office also facilitated national level dialogues to 'operationalize' the guidelines and ensure their incorporation in coastal reconstruction planning. The guiding principles were widely used in the reconstruction of efforts of national governments and for their easy use translated into many national/local languages, namely Arabic, Creoles, Dhivehi, Singhalese, Tamil and Thai.

2.3.4.4 The clearing house mechanism

86. GPA Coordination Office developed the Clearing-House Mechanism (CHM) as a referral system through which decision-makers at the national and regional level are provided with access to current sources of information, practical experience, and scientific and technical expertise relevant to developing and implementing strategies to deal with the impacts of land-based activities. GPA Coordination Office strongly believed that capacity-building, public awareness, donor coordination, responding to requests, and providing access to information on appropriate technologies and best practices are of paramount importance to achieve the goals of the GPA, and the clearing-house mechanism provides a means and a framework to achieve this.

87. The GPA clearing-house mechanism was developed as a 'network of networks' to provide access to information and data; support networking and decision making to promote needs driven development. The CHM utilized the concept of a "node" to define each member site participating in the network. These nodes were coordinated through a central node, or central site, which provided a suite of common elements that are shared by all sites. The role of the central node was not to control, but rather to facilitate and coordinate the information delivery mechanism. In effect, the CHM was ought to be 'owned' by the participants. This meant responsibility for quality, timeliness, maintenance, access and related issues on the initial producer or provider of information. This was considered important, as most governments and international organizations, often want to retain full responsibility and control over their own Internet sites and the maintenance of the content.

88. GPA Coordination Office and development partners established general guidelines for the adoption of internationally recognised standards, common tools and other elements necessary to establish the structure and technology that underpins the clearing-house mechanism. The structure is based on the premise that the Internet and the World Wide Web provide the necessary capability and capacity to link the disparate sites that comprise the clearing-house, and GPA CHM users throughout the world can enjoy that accessibility to the Internet. However, to give access to users with limited internet access, hard copies of the clearing house content were produced and distributed, in printed and CD-rom format.

The CHM had three major types, or groups, of nodes:

1. The **central node** was developed and maintained by the GPA Coordination Office. This node provided one of the main gateways into the CHM, including direct access to the other participating nodes. The site also served as the Web site of the GPA Coordination Office and provided considerable background information about the GPA and the many programmes and associated activities.
2. **Pollutant source category nodes** (sewage, POPs, heavy metals, etc.) were developed and managed by designated UN agencies such as FAO, WHO, IAEA, IMO and UNEP.
3. **Regional and national level nodes** were developed primarily through the regional seas programmes as an institutional framework for implementing regional GPA clearing-house activities. National nodes were planned to support and augment the regional nodes and make the Clearing-house information easily accessible at the national level, complemented with the relevant national information.

89. GPA Coordination Office also used the Clearing House Mechanism as a means for the enhancement of global partnerships. The national programme of action network of practitioners, created in 2005, served as a useful forum for partnership building and information exchange between government officials and other stakeholders involved in the development and implementation of national programmes of action for the protection of the marine environment from land-based activities. The Clearing House Mechanism was further expanded to redeveloped web page relating to oils (<http://oils.gpa.unep.org>), produced in partnership with the Swedish Environmental Protection Agency; a redeveloped physical alteration and destruction of habitats web page (<http://padh.gpa.unep.org>); and better collaboration with UNEP.Net initiatives and other related networking and information management initiatives. Expansion of the GPA knowledge base and the creation of inter-linkages between the Global Programme of Action and other global and regional initiatives were considered vital to the effectiveness of GPA implementation. Unfortunately, due to resource constraint GPA clearing house mechanism had limited linkages, and the web portal eventually deteriorated due to lack of proper maintenance.

2.3.4.5 Assessing the state of the marine environment

90. In preparation of the IGR-2 the GPA Coordination Office carried out an overview study to assess the state of the marine environment and of progress made in the protection of the marine environment since the adoption of GPA in 1995. The report titled "The State of the Marine Environment: Trends and processes" analysed the situation and status of action for the nine source categories within the framework of the GPA. The study concluded that progress in dealing with the nine source categories has been uneven. In three areas (Persistent Organic Pollutants, Radioactive Substances, Oils

(Hydrocarbons) good progress has been made. For another three areas (Heavy Metals, Nutrients, Sediment mobilization) were results are mixed and yet a third group where conditions have worsened i.e., Sewage, Marine Litter, Physical Alteration and Destruction of Habitats. The factors influencing success are, on the one hand, questions directly related to the task at hand, such as the regulatory system, institutional structures, technology or funding, and on the other, factors which are outside the scope of the GPA, but that nevertheless have a determining influence, as is the case of population growth and development. The study therefore, concluded that, while progress has undoubtedly been made, there is still a long way to go. In order to move forward, some recommendations were made, namely to continue strengthening existing institutional structures and cooperative mechanisms, focus on monitoring and assessing environmental trends and progress in the context of the GPA and apply a broader management strategy, based on an integrated or ecosystem approach.

2.3.5 The Second Inter-governmental Review, 2006

91. The Second Inter-governmental Review meeting of the Global Programme of Action was held in Beijing, People's Republic of China from 16-20 October in 2006. Representatives of 104 governments and the European Commission attended the meeting. The Ministers and high-level representatives in their deliberations emphasized the need and importance of GPA and committed to keep the GPA high on national, regional and international agendas as an effective mechanism to promote the sustainable management of coasts, oceans and their associated watersheds. Governments resolved to improve cooperation and coordination at all levels in order to deal with issues related to watersheds, coasts, seas and oceans in an integrated manner and to incorporate the integrated management and sustainable use of river basins, seas and oceans into relevant national policies and programmes. Through the adoption of Beijing Declaration (for details see Annex 2) the governments committed to furthering the implementation of the GPA during the period 2007–2011 by “ (a) Applying ecosystem approaches; (b) Valuing the social and economic costs and benefits of the goods and services that coasts and oceans provide; (c) Establishing partnerships at the national, regional and international levels; (d) Cooperating at the regional and interregional levels; (e) Mainstreaming the GPA into national development planning and budgetary mechanisms; (f) Supporting the UNEP GPA Coordination Office in undertaking its task of facilitating, furthering and promoting the implementation of the GPA” (and reaffirmed their commitment) to the continued currency and relevance of the Global Programme of Action as a fundamental framework for the protection of the coastal and marine environment and to commit ourselves to taking the Global Programme of Action's objectives and to mainstreaming them across our governments, and also to advancing them, as appropriate, in the relevant intergovernmental organizations and in the various multilateral environmental agreements to which we are Parties and in which we participate” (Beijing Declaration 2006).

2.4 Phase III (2006-2012): Mainstreaming the Programme at the national and regional levels

92. The governments attending the IGR-2, through the Beijing Declaration committed “to mainstream the objectives of the Global Programme of Action into development planning and implementation, including the United Nations country level programmes, the United Nations Development Assistance Framework, poverty

reduction strategy papers, common country assessments and country assistance strategies, to reduce and manage the risks and impacts of coastal and marine pollution” (UNEP/GPA/IGR.2/5).

2.4.1 Support to mainstreaming efforts

93. Pursuant to the decisions taken during IGR-2, GPA Coordination Office produced a guidance document “Making Mainstreaming Work: An Analytical Framework, Guidelines and Checklist for the Mainstreaming of Marine and Coastal Issues into National Planning and Budgetary Processes”. Following the finalization of this guidance document, GPA Coordination Office organized a series of regional training workshops, in partnership with governments, Regional Seas Programmes and other institutions, to familiarize national governments and key stakeholders with the concept of mainstreaming and the key steps that would entail to mainstream coastal and marine issues into national planning and budgetary processes leading to integrated planning. These workshops took place in Asia (November 2007) Eastern Africa (May 2008), the Caribbean (July 2008) and the South Pacific (September 2009). The regional workshops were attended by senior officials of the Ministry of Environment as well as from Ministries of planning, finance, public utilities, tourism, water resources and fisheries, all of whom have a stake in the maintenance and improvement of the environmental quality and ecological function of estuarine, near shore and ocean waters and the associated livelihoods of coastal population.

94. The Asia regional workshop was organised in collaboration with the Ministry of Environment and Forests, Government of India and the Institute for Ocean Management of Anna University. The workshop was held in Chennai, India with attendance of officials from Bangladesh, Sri Lanka, India, Indonesia, Philippines and Vietnam. Government representatives from Seychelles, Comoros, Madagascar, Mauritius, Kenya, Tanzania, Mozambique and South Africa attended the Eastern Africa regional workshop held in Port Louis, Mauritius. The regional meeting was hosted by the Mauritius Ministry of Environment and National Development and facilitated by the Secretariat of the Nairobi Convention. The officials from Jamaica, Belize, Trinidad and Tobago, Bahamas, Barbados and St Lucia, as well as representatives from the Caribbean Development Bank and Organization of Eastern Caribbean States attended the Caribbean regional workshop. The Jamaican Ministry of Environment hosted the workshop with support from the Secretariat of Cartagena Convention/Caribbean Environment Programme. The South Pacific regional workshop was organised by the Permanent Commission for the South Pacific (CPPS), and was attended by representatives from Chile, Colombia, Ecuador, Panama and Peru as well as representatives of various government and non-governmental institutions from Ecuador.

95. These regional mainstreaming workshops facilitated sharing of national level experiences in integrating coastal and marine environmental issues into national development plans and budgets. The presentations and discussions of the workshops helped the participating country delegates to reach a new understanding of the mainstreaming approach and created new incentives to expedite the mainstreaming process. The participants concluded that to make mainstreaming effective, it is of paramount importance to firstly, present priorities for coastal areas within the framework of national development plans and, secondly, where possible to articulate these priorities based on an economic analysis that demonstrates the full value of the sustainable management of marine and coastal resources to national development.

96. As a follow-up of these regional mainstreaming workshops several countries achieved progress in their efforts to mainstream coastal and marine environmental

management issues into the wider framework of governance. For example, the Government of Indonesia paid attention in strengthening the link between river basin management, land-based sources of pollution and the impacts of climate change to facilitate the integration of coastal issues into national development frameworks and budgeting. In such policy development endeavours in September 2014 Indonesia also adopted its National Ocean Policy (National Act No. 32/2014 on Marine Affairs), which provides a legal framework for the management of coastal and marine resources. It promotes national and local governments working together to manage and develop coastal and marine resources and small islands. The government of Viet Nam in recognition of the importance of its coasts, seas and islands' contribution to the economy and national development, in 2008 re-organised itself to better capitalise on its marine economy by creating the Viet Nam Administration for Seas and Islands (VASI). This institutional change reflects the new vision of the Vietnamese government "Viet Nam must be stronger and richer, by the sea". VASI is mandated to integrate and unify the state's management on seas and islands and to carry out public services in this area including development of marine policies and laws, monitor and survey the marine environment; develop early warning and emergency responses systems; and promoting integrated coastal, marine and island planning and management. Viet Nam in its pursuit of integrated planning and management of coastal and ocean resources in June 2015 enacted the Law of Marine Resource and Environment of Sea and Islands (Law No. 82/2015/QH13) that stresses the importance of an integrated approach towards the management of its coastal and ocean resources and aims to synchronize national coastal management by establishing an interagency coordinating mechanism, led by the Ministry of Natural Resources and Environment (MONRE) and tasked with addressing the development of economic sectors associated with seas and islands using an integrated management approach.

97. Many countries along the coast of Western Indian Ocean such as South Africa, Seychelles, Mauritius, Tanzania, Mozambique there are sincere efforts to put in place policy frameworks and institutional mechanisms to ensure sustainable development and management of coastal and marine ecosystems and the resources. All these countries in have put in place their national and local levels plans, and some also developed their long-term policy and/or vision document.

BOX 4. Mainstreaming efforts in Kenya

Kenya's coastal and marine ecosystems are among the most productive. They support production, income & livelihood sectors & provide essential ecological services from the region. Coastal economies such as maritime trade, tourism, fisheries, agriculture, mining and other industries contribute around 9.5% of annual GDP. Owing to heavy dependence on natural resources, the rapid growth in population and expansion of various economic sectors at the coast and countrywide have led to over-exploitation, environmental degradation and resource-use conflicts. The impacts and threats to these ecosystems are complex and demand long term, cross-sectoral, multidisciplinary and broad stakeholder participatory responses in assessment and intervention targeting through structured engagements. There is need to sustain intervention objectives through National Program Action Plans and budgetary back stopping by government and other partners.

Through its strategic policies and programmes, Kenya in its Vision 2030 recognizes the importance of linking conservation and protection of coastal and marine ecosystems to socio-economic development. The government has taken the initiative to

harmonize national development plans and district development plans. Kenya has established a collaborative inter-agency working group consisting of sectoral agencies, local authorities and various community groups. The Kenya Vision 2030, which is the blueprint of country's long-term development goal "i.e., becoming a globally competitive and prosperous country with a high quality of life by 2030" Kenya aims for sustainable utilization and conservation of coastal ecosystems, enforcement of legislation, capacity-building, proper municipal waste management system, and integrating indigenous coastal management systems.

98. In the Caribbean many interesting policy development have taken place. For example, Barbados in 2010 produced its national environmental summary with assistance from UNEP to facilitate incorporation of environment as a component into the United Nations Common Country Assessment (UNCCA) and the United Nations Development Assistance Framework (UNDAF). The national environmental summary provides a critical analysis of gaps and opportunities that exist within the current policy/programme and national legislative framework and which are used to address the major environmental issues. The linkages to poverty reduction and development were also highlighted. Since then Barbados developed limits on voluntary recreational fresh and marine water quality standards; discharge standards for sewage, oils, nutrients and sediments; adopted water quality standards and finalised its coastal zone strategy and action plan. Barbados has also ratified the Land based Sources Protocol (under the Cartagena Convention for the Caribbean). Given the wide cross-sectoral nature of the LBS protocol and pollutants entering the marine environment, efforts have been made to mainstream components of the NPA into the work programme and policies of other government departments and ministries.

99. The Barbados Coastal Zone Management Unit (CZMU) is mandated to develop standards for water quality in coastal and marine areas as well as maintenance, rehabilitation and enhancement of coastal and marine habitats; determination of temporal changes in coral reef communities, and developing necessary measures to protect, rehabilitate and enhance coastal and marine habitats. The CZMU also carry out coastal planning and management activities, and provides professional technical evaluations of all coastal related applications received from the Town and Country Development Planning Office to assess user conflict and development pressure points along the coastline and use the policies developed in the integrated coastal zone management plan for the implementation of sound coastal management practices.

100. The Jamaican government incorporated key areas of concerns identified in the Jamaican NPA into the Government of Jamaica's policy and legislative frameworks, and these have become an integral part of the Jamaica's National Environmental Action Plan (JaNEAP). The JaNEAP is a three-year cycle plan and its implementation is monitored through the JaNEAP annual report. In Jamaica the NPA also supported the development of the National Sustainable Tourism Plan in the form of the Blue Flag programme, increases in beach license fees, and improved understanding of the contribution to be gained by an integrated watershed and coastal zone management approach.

101. In Belize completion of the NPA was accompanied by legislative changes to the Environmental Protection Act including the passing of Effluent Limitations Regulations and the Integrated Water Resources Management Act. The NPA has influenced the implementation of solutions to environmental and coastal issues to the extent that it has enabled a greater focus on environmental actions in support of the country's national development priorities. Guyana upon finalization of its NPA in 2009 drafted new "standards for industrial effluent discharge into the environment" and established an

inter-agency coordinating mechanism to mainstreaming public health into the main budgetary process utilizing the GPA approach.

BOX 5. Integrative planning and cross-agency coordination strengthened in Saint Lucia

Through the development of its NPA and coastal zone management policies and actions, Saint Lucia has been successful in promoting marine and coastal environmental protection through key sectors within Saint Lucia's economy, including the development of recreational water quality standards. Saint Lucia's Coastal Zone Management Policy, Guidelines and Selected Projects were approved and adopted by the Cabinet of Ministers in 2004. The country's Coastal Zone Management Strategy seeks to improve the management of the island's coastal and marine resources to ensure that economic growth is balanced with the sound management and use of coastal and marine resources. The Strategy recognizes that the management of the coastal and marine resources of the island is complex and can only occur through inter-agency collaborative approaches that integrate the management of the coastal zone into all other sector-based management programmes.

At the vanguard of Saint Lucia's ICZM Action Plan is the country's Coastal Zone Management Unit. This Unit has established inter-sectoral committees which coordinate and integrate the island's institutional framework for environmental management and mainstreaming coastal and marine issues into the country's wider development planning process. A result of this work is evidenced by a shift in how the work programmes of these other line agencies are now being defined with marine/coastal concerns in mind. A good result of this collaborative work has been the development of 'voluntary recreational water quality standards' that are cross-sectoral in nature and have been supported by different sectors namely, agricultural, light industry and tourism.

Saint Lucia as a party to the Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and in January 2008, acceded to the Land-Based Sources of Marine Pollution (LBS) Protocol. The LBS Protocol seeks to respond to the protection of the marine environment from land-based point and non-point sources of marine pollution.

102. GPA Coordination Office in its efforts to facilitate mainstreaming of coastal and marine issues into national planning and budgetary processes also assisted countries to undertake review studies and introduce policy reforms in utilizing their own resources effectively and efficiently, and to find possible new domestic resources, make the most of foreign assistance and optimize possibilities of utilizing international financial institutions and commercial financing. In Sri Lanka, the Ministry of Environment and Natural Resources based on a study supported by the GPA Coordination Office established an environmental conservation levy exclusively for environmental conservation, including in relation to specific products and services that clearly pose an environmental hazard.

BOX 6. Development of market-based instruments for environmental management in Sri Lanka.

Sri Lanka developed the National Programme of Action (NPA) to address Land-based sources of marine pollution 2003 and the NPA approved by the Government. The NPA identified various policy gaps and resource constraints to facilitate implementation of the NPA. A study to explore feasibility of applying market-based instruments (MBI) for additional domestic resource mobilization to act on priority problems identified in the NPA was carried out. The MBI study was instrumental to mobilize political actions to

design new policy measures and a new policy in the form of a Tax on polluting household was proposed in the Budget of 2008 by the Minister of Finance and got approved.

Types of Market Based Instruments considered in the new act were: Licences; Deposits; Charges; Environmental Conservation Levies and Environmental Conservation subsidies. Green Cess; Green Conservation Levy; Green Surcharge and Green Contribution were introduced under the Environmental Conservation Levies. Green Cess was imposed on commodities, which require special environmentally friendly disposal methods to avoid possible pollution costs e.g., mobile phones, computers, CFL bulbs, all types of batteries, electric equipment, asbestos, glass wares, tyres etc. Under the Act Green Surcharge is proposed on environmental polluting commodities to encourage consumers to buy environmental friendly commodities and promote innovation of environmental friendly alternatives. Green surcharge has been proposed on plastic party plates, polythene bags, single button flushing toilet system and fossil fuel driven vehicles. The new Act has made the users of commodities that need special disposal method to pay the cost of their disposal based on the polluter pay principle. An Environment Conservation Council proposed under the new Act (see below) categorized the commodities those are to covered under the Green Cess, Green Surcharge, the amount to be charged and procedure for collection either at the stage of production or consumption.

The New Environment Levy Act is expected to collect around Rs. 1000 million (USD 10 million) per year. This is nearly 25% of total government allocation for the protection of Environment (based on the 2008 estimate of Rs 4000 Million or USD 40 million). The Sri Lankan Parliament enacted laws specifying that the generated revenues shall be deposited in a dedicated account in the Treasury, and shall only be used for environmental conversation. The Parliament through enactment of laws also empowered the Ministry of Environment and Natural Resources to collect and also use the money for defined purpose as the head of the Environment Conservation Council.³

103. In sum it could be safely stated that the GPA's approach to mainstreaming contributed to catalyse broader approaches to integrated coastal management. In China, the development of a NPA and associated coastal pollution control programmes got embedded in the 12th five-year plan (2011-2015). The government of Seychelles, while revising its Environment Management Plan for the period 2011-2020, set out that the Environment Management Plan of Seychelles (EMPS) represents the country's environmental programmes foreseen over a ten-year period and constitute a global environmental strategy for Seychelles. The Kenyan Ministry of Environment and Mineral Resources prepared and approved its Integrated Coastal Zone Management Action Plan 2011-2015, while in Japan, the "Basic Act on Ocean Policy" was enacted in 2007. The "comprehensive governance of the oceans" and "integrated management of the coastal zone" stipulated in this Basic Act are intended to protect the marine environment from land-based activities. South Africa in 2009 designated the Prince Edward Islands as Marine Protected Areas. The Prince Edward Island with an approximate area of 180,000 square kilometres located in the southern ocean between South Africa and Antarctica, is the largest marine protected area (MPA) in the Antarctic region and the sixth largest MPA in the world. South Africa now has 20 MPAs protecting approximately 20% of its coastline, which is enshrined in the Marine Living Resources

³ Composition of the Environmental Conservation Council. Minister of Environment and Natural Resources (Chair-person) and the Members are Secretary –Ministry of Environment and Natural Resources; Chairman – Central Environmental Authority; Chairman - Sustainable Energy Authority; Chairman - Geological Survey and Mines Bureau; Chairman – Marine Pollution Prevention Authority; Director General of Central Environmental Authority; Conservator General of Forests; Director – Meteorological Department; Director General of Wildlife; A Senior Officer from Ministry of Finance & Planning; Three independent experts in Economics, Environmental Economics or Administration appointed by the Minister of Environment and Two officers of the Central Environmental Authority appointed by the Chair-person.

Act (1998). South Africa has increased the coverage of MPAs to include marine, wetlands, terrestrial, estuarine and riverine ecosystems. This coverage extend up to 88kms inshore and by doing so implements a cornerstone of the GPA which is connecting the land and ocean communities.

104. To keep the momentum and sharing of cross-regional mainstreaming experiences GPA Coordination Office organised workshops in the margin of global and regional meetings such as in Hanoi (2008) during the meeting of the Global Forum on Oceans, Coasts and Island and in Manila 2009 during the East Asian Seas Congress. The aim of these workshops, were to inform and reflect on countries experiences in 'mainstreaming' with a focus on solutions and how to expand the institutional basis to address land-based sources of marine pollution.

105. During these sessions, speakers representing Ministries of Finance, Planning and Environment from Africa, Asia and the Caribbean based on their country experiences discussed the links between the management of coastal and marine resources, poverty reduction and economic growth, with a particular focus on policy development. They illustrated how the conservation and sustainable management of marine and coastal ecosystems contributes to poverty alleviation and the achievement of the MDGs, and how to reconcile development pressures with protection objectives. Based on their country experiences, the participants discussed at length various aspects of policy development processes and tried to seek answers to questions such 'what a policy should contain', and 'what policy choices a nation can afford'. Such exchange of views and experiences contributed to better understanding of national planning and budgetary processes which tend to focus on factors that will stimulate growth and development, keeping this in perspective to redefine approaches to the protection and sustainable management of coastal and marine environment. Government officials from Kenya, South Africa, Seychelles, Mauritius, Saint Lucia, Sri Lanka, the Philippines, Indonesia, Viet Nam and the Director of Priority Action Programme of the Mediterranean region of the Barcelona Convention.

106. This momentum of NPA development process and/or incorporation of the GPA priority concerns into relevant sectoral programmes of the government continued to grow. The progress report submitted by the GPA Coordination Office to third intergovernmental review meeting (IGR-3) notes that "some 72 countries have established framework national programmes of action since the inception of the Programme. Since 2006, 15 countries have begun to develop national programmes of action, 8 have revised their national programmes of action and many have successfully integrated coastal and marine environmental management and pollution reduction measures into national sustainable development plans or strategies and budgetary mechanisms. In addition, 17 countries have reported having comparable policies enabling them to address land-based sources of marine pollution consistent with the Programme. (UNEP/GPA/IGR.3/2 Paragraph 8). To inform the governments on the status of national programmes of action and the lessons learned in terms of mainstreaming Global Programme of Action source categories into national policies and budgetary processes, GPA Coordination Office submitted an information document (UNEP/GPA/IGR3/INF/5) titled "Marine and Coastal Ecosystems: Moving into the Mainstream.

2.4.2 Mainstreaming nutrient pollution considerations

107. Keeping in view the conclusions of the State of the Marine Environment and the outcomes of the multi-stakeholders workshop organised in the margin of the IGR-2 in Beijing, the GPA Coordination Office, on 21-22 June 2007, in partnership with the

Ministry of the Environment of the Government of The Netherlands and the UNEP Division of Technology, Industry and Economics convened a meeting to brainstorm on possible collaborative efforts that could be undertaken to address the nutrient challenge as agreed in Beijing meeting. The meeting participants agreed to form a “Partnership” to address this challenge through promotion of best practices and policy change aiming to reduction of the eutrophication of freshwater, coastal and marine environments caused by nutrient over-enrichment. The Partners also agreed to focus actions initially to (a) raise awareness; (b) disseminate information and facilitate the exchange of experience and good practice; and (c) facilitate and encourage actions by all stakeholders. GPA Coordination Office was mandated to provide secretariat services to ensure an integrated approach and to allow for synergies and the sharing of information and experience.

108. The Partnership continued to grow and secured membership of government, industry, science community, UN agencies and civil society organisations. Given the momentum and growing interest of the partners through their participation in a series of virtual and face-to-face consultative meetings, in 2009 the partners decided to launch the Global Partnership on Nutrient Management (GPNM) officially. This was done on 6 May 2009 in the United Nations Headquarters in New York, USA when the Commission on Sustainable Development was holding its seventeenth session to discuss agriculture. The event was co-sponsored by the Government of the United States of America, Government of The Netherlands and the GPA Coordination Office on behalf of the United Nations Environment Programme. Representatives from 15 developing countries, 5 of developed countries, agencies such as Federation of Free Farmers, The Philippines, International Federation of Agricultural Producers from India, International Fertilizer Industry Association (IFA), FAO attended the session. With the successful launch of the GPNM, the partners requested GPA Coordination Office to host the secretariat (<http://new.unep.org/gpa/gpnm/gpnm.asp>; www.nutrientchallenge.org). With generous support of the GPNM partners, GPA Coordination Office in 2010 produced the guidance document “Building the foundations for sustainable nutrient management” and “Addressing the Nutrient Challenge: Where we are, what we need to know and what we need to do”. The latter was circulated as an information document for the government attending the GPA IGR-3 in January 2012 (UNEP/GPA/IGR3/INF/7).

2.4.3 Mainstreaming efforts to address marine litter

109. Litter is found in all the world's oceans and seas, even in remote areas far from human contact and obvious sources of the problem. Marine litter (or debris) includes persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment, such as plastics, glass, metal, styrofoam, rubber and lost or discarded fishing gear. The continuous growth in the amount of solid waste thrown away, and the very slow rate of degradation of most items, together leading to a gradual increase in marine litter found at sea, on the sea floor and coastal shores. It is an economic, environmental, human health and aesthetic problem posing a complex and multi-dimensional challenge. Plastic debris in the oceans, due to its slow rate of degradation in the marine environment, continues to accumulate, while breaking down into smaller particles and micro-plastics. Concerns have also been expressed regarding the potential impact of releases of persistent bio-accumulating and toxic compounds from such debris.

110. Building on collaborative work of the GPA Coordination Office and Regional Seas Programme during 2005-2006, after the IGR-2, significant attention was given to the problem of marine litter. This culminated in the publication of a global review of the

approaches taken to mitigate this issue, as well as Guidelines on the Survey and Monitoring of Marine Litter and Guidelines on the Use of Market-Based Instruments to Address the Problem of Marine Litter. On an allied theme, considerable work was undertaken by the Regional Seas Programme in association with the Food and Agriculture Organization (FAO) to examine the threat posed by so-called 'ghost fishing' with an appraisal of abandoned, lost, or otherwise discarded fishing gear. The FAO-UNEP 2009 joint publication⁴ outlined the impacts and causes of the problem, as well as possible preventive, mitigation and curative measures.

111. In 2011, the GPA Coordination Office took the decision to join with the National Oceanic and Atmospheric Administration of the United States and other partners, to organise the 5th International Marine Debris Conference, in March 2011, in Honolulu, Hawaii. The conference brought together a wide array of participants (over 400) from government, industry, academia and civil society, as well as individual citizens who were passionate about finding lasting solutions to the problem of marine debris. The conference discussed research advances and shared strategies and best practices to assess, reduce, and prevent the impacts of marine debris. Despite the scale and complexity of the challenge faced by the international community in managing the marine litters, among others, the conference reached the conclusion that marine debris is preventable. What is needed is a closer and coordinated working relationship between governments, industry, researchers, civil society and the general public to tackle the problem of marine debris at its source, whether that be from land or sea-based activities. The Conference adopted the Honolulu Commitment (<http://www.unep.org/gpa/what-we-do/global-partnership-marine-litter>), which inter alia, establishes a cross-sectoral approach to help reduce the occurrence of marine debris, and calls for the development a global strategy for the prevention, reduction and management of marine debris. The partners attending the international conference requested GPA Coordination Office to coordinate the work on marine litter.

2.4.4 Mainstreaming wastewater management

112. GPA Coordination Office continued to deliver its training programme to build the capacities of the concerned actors responsible for planning and management of wastewater infrastructures. The programme was delivered within the framework of the project "Pollution reduction through improved municipal wastewater management in coastal cities in Africa and the Caribbean countries with a focus on small island developing States (SIDS). Partners involved in the delivery of the course have been the UNESCO/IHE Institute for Water Education in the Delft, The Netherlands and various other regional and national institutions. The training course was designed to improving skills and knowledge needed in project identification, planning and financing at the municipal level in water, sanitation and wastewater management. This course as noted earlier (see Paragraph 56-57) is based on the 'UNEP/WSSCC/WHO/UN-HABITAT Guidelines for Municipal Wastewater Management' and their associated "10 Keys for local and nation action", developed in the framework of the Train-Sea-Coast (TSC) programme of the United Nation's Division for Ocean Affairs and the Law of the Sea (UN/DOALOS), which is part of TRAIN-X UN capacity building initiative.

113. During the period of 2007-2011 through a delivery of 73 courses in 30 countries a total of 1,426 professionals have been trained. Of the total professional trained one third were women. Countries covered under the training programme are Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Tanzania in the Eastern Africa;

⁴. FAO and UNEP 2009. Abandoned, lost or otherwise discarded fishing gear, UNEP Regional Seas series and studies no 185 and FAO Fisheries and Aquaculture Technical paper no. 523.

Benin, Cameroon, Côte d'Ivoire, Ghana, Mauretania, Nigeria, Republic of Congo, Senegal and Togo in Western Africa; Bahamas, Barbados, Belize, Guyana, Jamaica, St. Kitts and Nevis, Suriname, Trinidad and Tobago in the Caribbean; Cook Islands, Fiji, Kiribati, Tonga in the Pacific; and Algeria, Egypt, Iraq, Jordan, Lebanon, Libya, Morocco, Oman, the Occupied Palestine Territory, Qatar, Saudi Arabia, Sudan, Syria, Tunisia and Yemen in the Middle East.

114. In addition to the abovementioned training of professionals, GPA Coordination Office also developed a training-of-trainers (TOT) module and trained prospective instructors selected out of the participants attending the basic training on wastewater management. During this training the prospective trainers received a learning-by-doing exposure to the different logistic, pedagogical and methodological approaches used to facilitate workshops. The prospective instructors were provided with additional material directly after the course. The TOT was used to build a pool of local, regional and international instructors for the different modules in each language, and also ensure future capacity building well beyond the scope of present project. A total 27 instructors have been trained from 17 countries.

115. The evaluation of the training programme noted improved skills and knowledge in project identification, planning and financing at the municipal level in water, sanitation and wastewater management. Participants use the training manual and guidelines when planning new infrastructure developments. The training of local and regional instructors has contributed to increased capacity to provide such training independent of GPA Coordination Office support. There are also evidences that some of the training participants have been able to influence planning actions of their organizations, increasingly using their skills acquired in carrying out objective-oriented planning and systematic involvement of stakeholders in critical phases of the planning processes. Participants are also networking with each other, which is contributing to improved exchange of knowledge and implementation of best practices.

2.4.4.1 UN Environment and UN-Habitat collaboration on wastewater management

116. To meet the wastewater challenge UNEP and UN-Habitat based on their previous collaborative works in 2010 brought out a new publication titled "Sick water? The central role of wastewater management in sustainable development. A rapid response assessment". This report highlighted that globally, two million tons of sewage, industrial and agricultural waste is discharged into the world's waterways and at least 1.8 million children under five years-old die every year from water related disease, or one every 20 seconds, and called for immediate actions to address the challenge.

117. HRH, Prince Willem-Alexander of the Netherlands, and the Chair, UN Secretary-General's Advisory Board on Water and Sanitation wrote the preface of the report and noted that "the wastewater challenge is not only a threat, but a challenge where we can find opportunities for green employment, social well-being and ecological health.. (and) stated that "The United Nations Secretary-General's Advisory Board on Water and Sanitation (UNSGAB) is committed to accelerating progress on the Millennium Development Goal targets for water and sanitation" (http://www.unwater.org/downloads/sickwater_unep_unh.pdf). The report was launched under the banner UN-Water on the World Water Day 2010.

2.4.5 The third Inter-governmental Review, 2012

118. The third session of the inter-governmental review meeting of the Global Programme of Action hosted by the Government of the Philippines, was held from 25-26 January 2012 in Manila. Representatives of 65 Governments and the European Commission, as well as representatives of international financial institutions, international and regional organizations, the private sector, non-governmental organizations, other stakeholders and major groups also attended the meeting. The governments attending the IGR-3, recognizing “the achievements in the implementation of the Global Programme of Action over the period 2007–2011” through the Manila Declaration reiterated their commitments “to furthering the implementation of the Global Programme of Action with a focus on the identified priorities for the period 2012–2016 (and) decide actively to engage ourselves and step up our efforts to develop guidance, strategies or policies on the sustainable use of nutrients so as to improve nutrient use efficiency with attendant economic benefits for all stakeholders, including farmers, and to mitigate negative environmental impacts through the development and implementation of national goals and plans over the period 2012-2016, as necessary (and decided) that the GPA Coordination Office in the period 2012-2016 should focus its work on nutrients, litter and wastewater as the three priority source categories for the GPA, using global multi-stakeholder partnerships; and request the Coordination Office to develop its activity plan on the basis of these strategic directions” (Manila Declaration Paragraph 3-5).

2.5 Phase IV (2012 to date): Maintaining Programme implementation and building partnerships

2.5.1 Government commitment

119. Governments’ determination to implement the Global Programme of Action continued unabated. A web-based search of national programmes of action, national action plans or incorporation of GPA priority issues into existing national planning processes carried out in end 2016, shows that 107 countries have policy frameworks in place to address land-based sources of marine pollution. Additionally, responses of 33 governments received through an on-line survey (as of March 2017) facilitated by the GPA Coordination Office show that in 72.4 countries NPAs are under implementation since their adoption over the last decades, and a third of the responded governments (35.7%) stated that they have revised/updated their NPAs. Furthermore, it is worth noting that nearly all countries (94%) reported that the issues of land-based sources of marine pollution are mainstreamed into other national planning frameworks such as integrated water resource management (IWRM) plans, integrated coastal zone management (ICZM) plans etc. 75.8% countries also reported that systematic monitoring programme are in place to collect data on the quality of coastal water and levels of pollution. The responses also show that the NPA priorities are totally in line of the GPA current priorities decided during the IGR-3. According to national responses all (100%) countries reported managing disposal of untreated wastewater as the top priority, followed by 87.9% countries reported management of nutrients and 84.8% countries for marine litter are of priority concerns.

120. Pursuant to the decision of the IGR-3, GPA Coordination Office directed its resources to engage strategically with national governments and other relevant stakeholders to address the three priority source categories (i.e., nutrients, marine litter and wastewater). Dedicated efforts were made to strengthening cooperation between the GPA and the UNEP Regional Seas Programme and developing strategic partnerships with the Global Environment Facility (GEF), specifically the GEF supported International

Waters projects and other relevant regional initiatives. Accomplishments made and the challenges to address with respect to each of the priority action areas are discussed below in successive order.

2.5.2 Addressing the nutrient challenge

121. The governments through the Manila Declaration gave their full endorsement to the Global Partnership on Nutrient Management and clearly articulated their views; we quote, “*Decide* actively to engage ourselves and step up our efforts to develop guidance, strategies or policies on the sustainable use of nutrients so as to improve nutrient use efficiency with attendant economic benefits for all stakeholders, including farmers, and to mitigate negative environmental impacts through the development and implementation of national goals and plans over the period 2012-2016, as necessary; and ... to support the further development of the Global Partnership on Nutrient Management and associated regional and national stakeholder partnerships, *as well as* their activities, including assessments as agreed by the partnership, and sharing of best practices using extension and advisory services for policy makers and farmers” (Manila Declaration Para 4 and 5a).

122. GPA Coordination Office continues to host the secretariat of the Global Partnership on Nutrient Management (GPNM) in order to promote sustainable production and use of nutrients, notably nitrogen and phosphorous, and to trigger high-level strategic interest and engagement among countries and stakeholders on the issue of addressing the “nutrient challenge”. The partnership continued its work pertaining to knowledge generation, providing extension and technical services, outreach and advocacy and expanding the network of partners.

123. With respect to knowledge generation GPNM published two key documents; namely Our Nutrient World - the challenge to produce more food and energy with less pollution (2013) and a technical paper on Nitrogen Use Efficiency and Nutrient Performance Indicators (2015). The report Our Nutrient World⁵ produced by a group of 50 scientists, representing 15 nationalities working for various institutions including the fertilizer industry, provides a concise overview of the state of knowledge related to the nutrient challenge. This report draws attention to the multiple benefits and threats of current use efficiency of nutrients. It highlights how nitrogen and phosphorus fertilizers contributes to global food security and how they will remain critical in the future, especially given projected growth of population and potential bioenergy needs. The report also demonstrates that high nutrient use has created a web of pollution affecting the environment and human health, while insufficient access to nutrients has led to soil degradation, causing food insecurity and exacerbating land use changes and related losses of biodiversity and emissions of greenhouse gases. The report made abundantly clear the key threats of unsustainable use of nutrient and shows how these problems cross all global change challenges, threatening water, air and soil quality, climate balance, stratospheric ozone and biodiversity, and argued that improved nutrient use efficiency would provide the foundations for a ‘greener economy’ to produce more food and energy while reducing environmental pollutions. The report argued for global actions to improve nutrient use efficiency and concluded that with a 20% improvement in the nutrient use efficiency by 2020 the world community will be able to save nearly USD 170 billion a year through improvement in human health, climate and biodiversity.

⁵<http://unep.org/gpa/documents/publications/ONW.pdf>.

124. Our Nutrient World report stimulated discussions on policy change and reportedly used by many agencies in formulating and/or influencing discussion on defining Sustainable Development Goals (SDGs) pertaining to agriculture and food security. The report "An Action Agenda for Sustainable Development" submitted to the UN Secretary General by the Leadership Council of the Sustainable Development Solutions Network using data and analyses of the GPNM publication Our Nutrient World, clearly recognized the need and importance of addressing nitrogen and phosphorus within the framework of SDGs. The second publication offers the technical basis for using Nitrogen Use Efficiency (NUE) as a performance indicator to improve global food production and control the potential harmful environmental impacts of excess nitrogen-based compounds from manufactured and animal waste fertilizers⁶. This report is a response to the IGR-3 decision where the governments called for "step up efforts to develop guidance, strategies or policies on the sustainable use of nutrients so as to improve nutrient use efficiency with attendant economic benefits for all stakeholders, including farmers, and to mitigate negative environmental impacts" (Manila Declaration).

125. Thanks to GPA Coordination Office's active outreach, the issue of nutrients was featured as the first emerging issue in the UNEP 2014 Yearbook.⁷ The inclusion of nutrient management in the most significant UNEP publication is a clear signal that it is being recognized globally as an issue warranting attention. The 2014 Yearbook highlighted the changes in the global nitrogen cycle and the implications of excess nitrogen in the environment including increase in the number and areas of coastal dead zones and climate change impacts. The report sums up what is being done to reduce excess nitrogen releases and what still need to be done to promote integrated nitrogen management.

126. GPA Coordination Office secured USD 1.7 million of GEF resources to implement the Global Nutrient Cycle project. Among many outputs, the project developed quantitative modelling approaches on coastal nutrient enrichment, and succeeded in reaching consensus with a variety of agencies and institutions in sharing data and also in reassessing the Global NEWS (Global Nutrient Export from Watersheds) nutrient load data and made them available on the web to support modelling efforts; land-use and best management practices scenario evaluation. As a follow-up GPA Coordination Office in partnership with GPNM members successfully carried out analysis of data for last one hundred year (1900 - 2000) and produced an interactive slide showing nitrogen concentration all over the world and its change with a five year interval, and also published many articles in peer-reviewed journals and produced many information documents (<http://www.nutrientchallenge.org>).

127. To provide extension and technical services to various stakeholders, the GPA Coordination Office through the GEF supported Global Nutrient Cycle project developed a global nutrient management toolbox based on resources compiled from 334 practices from 60 countries to aid in capacity building. Validation of the toolbox functionality with stakeholders has been carried out during a training session with participation of agricultural advisory professionals and farmers at the Chilika Lake demonstration site of Orissa, India in July 2015; followed by a familiarization exercise/nutrient roundtable workshop during the 8th GEF International Waters Conference in Sri Lanka in May 2016, attended by participants from 20 countries. The nutrient management toolbox is hosted on the GPNM web portal.⁸

⁶ <http://unep.org/gpa/documents/publications/NUEandNPIGPNM2015.pdf>

⁷ <http://www.unep.org/yearbook/2014/>

⁸ <http://www.nutrientchallenge.org/toolbox2>

128. At the national level GPA Coordination Office facilitated development of the watershed-based nutrient flux modelling for the Manila Bay watershed in the Philippines to evaluate land use practices and impacts of nitrogen and phosphorus discharge to the bay. This has informed and contributed to the development of a nutrient reduction strategy and investment plan for the Manila Bay watershed. Further, through the development of the “Ecosystem Health Report Card-2012 and 2014” for the Chilika Lake, in Odisha state of India⁹ and Laguna de Bay 2013 in the Philippines¹⁰ GPA Coordination Office contributed in raising awareness and drawing policy attention for integration of nutrient contributions as a key parameter of the Chilika Lake and Laguna de Bay management plans and additional allocation of resources for implementation of the plans.

129. GPA Coordination Office in recognition of the Manila Declaration’s emphasis on the importance of “multi-stakeholder partnership” continued its efforts to bring together state and non-state actors and their institutional capabilities and human resources in the form of skills, experiences and ideas to agree on a joint plan of action to tackle the nutrient challenge. This led to the creation of GPNM regional platforms in Asia and the Caribbean.¹¹ The GPA Coordination Office is working to embed these regional nutrient platforms within the Regional Seas programmes and discussions are underway on the modalities with the Coordinating Body for the Seas of East Asia (COBSEA), South Asia Cooperative Environment Programme (SACEP), Northwest Pacific Action Plan (NOWPAP) and the Caribbean Environment Programme of the Cartagena Convention. The GPA Coordination Office under the scope of the GPNM is supporting the Abidjan Convention and the Cartagena Convention Secretariats in harmonizing institutional responses at the UN Environment agency level in addressing the recent proliferation of sargassum seaweed in the central Atlantic Ocean that has been severely affecting coastal fisheries and the tourism sectors in West Africa and the Caribbean. The phenomena is being linked to nutrient loading (among other climate change-induced factors) from land-based activities, and scientific cooperation is strengthened through the work of the Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP).

130. GPA Coordination Office is working with Concordia University of Montreal, Canada to develop a massive open online course (MOOC) on nutrients and wastewater. This course will be planned for integration within the global nutrient management toolbox as one of the key tools for distance learning/capacity building. Given the fact that a lot of nutrients are flowing into the environment through wastewater discharges, to ensure complementarity the course is designed in collaboration with the GW²I and draw from its resource materials. This MOOC is being designed to extend the reach of the GPA in its capacity building efforts, targeting technical and policy support personnel at national level to better deliver knowledge to relevant stakeholders. The MOOC course material will also be extended through the academic institutions to further widen the reach at the global scale. The MOOC on nutrient and wastewater draws from the lessons learned in recent development of a MOOC on marine litter in association with the Open University of the Netherlands.

⁹ http://www.chilika.com/documents/newsevents_1468305711.pdf

¹⁰ <http://pemsea.org/dev/sites/default/files/Laguna%20de%20Bay%202013%20Ecosystem%20Health%20Report%20Card.pdf.pdf>

¹¹ Countries engaged in these platform meetings and dialogues to date include; Asia Platform: Bangladesh, Cambodia, China, India, Indonesia, Japan, Korea, Malaysia, Philippines, Sri Lanka, Thailand, Vietnam; Caribbean Platform: Antigua & Barbuda, Belize, Colombia, Costa Rica, Cuba, Dominican Republic, Guatemala, Guyana, Haiti, Jamaica, Panama, Trinidad & Tobago, United States of America.

2.5.3 Addressing marine litter, marine debris and microplastics

131. GPA Coordination Office launched the Global Partnership on Marine Litter in Rio de Janeiro during the United Nations Conference on Sustainable Development (June 2012). The Global Partnership on Marine Litter (GPML) is a voluntary multi-stakeholder partnership of governments, international agencies, NGOs, academia, private sector, civil society and individuals committed to contribute to the development and implementation of GPML activities aiming to further reduce and better manage marine litter. The first Partnership Forum was convened in 2013.

132. The GPML took cognizance of the “Honolulu Strategy”¹² as a framework for a comprehensive global effort to reduce the ecological, human health, and economic impacts of marine debris globally and agreed to promote GPML as a common frame of reference for collaboration and sharing of best practices and lessons learned. It was also agreed that the GPML should aim to work with all stakeholders to reduce the amount and impact of marine debris from both land-based and sea-based sources. In this pursuit GPML activities were incorporated into the workplan of the UNEP-led Global Partnership on Waste Management to ensure that marine debris issues, goals, and strategies are tied to global efforts to reduce and manage waste.

133. The GPML aims to facilitate information sharing and collaboration through regular webinars. To enhance the capacities of the stakeholders, a series of workshops and training courses have been organized and on the ground activities were supported through the demonstration projects. Among others, capacity building activities include Massive Open Online Course on Marine Litter (MOOC), developed in collaboration with the Open Universiteit of the Netherlands. The MOOC consists of a leadership track and an experts/practitioners track.

134. The MOOC attracted global audience. To date 6,456 participants from 54 countries attended the MOOC. The results of the initial evaluation of the course point to a high level of satisfaction by the course participants. Involvement of students was high from the start of the MOOC. The MOOC is currently under review to include hotspot assessment, risk-based assessment and financing aspects of marine litter interventions. GPA Coordination Office, in view of the success of the MOOC has decided to run the course in Spanish towards the end of 2017 and exploring partners’ interest to be engaged in the development and implementation of MOOC in other languages. Efforts are underway to identify relevant subject experts and relevant case studies from various regions for inclusion in the MOOC.

135. GPA Coordination Office also supported a variety of activities ranging from capacity building and awareness rising to the development of municipal action plans in Panama, Colombia, Ecuador, Peru, and Chile. During 2013-2015 in partnership with the Permanent Commission for the South Pacific (CPPS) 600 people have been trained. 12 capacity building workshops were organised targeting local fishing communities. These workshops contributed in mobilizing local stakeholders under the auspices of municipal authorities to search for solutions to combat the negative impacts of marine litter on coastal and marine ecosystems. Subsequently, 5 municipalities developed and moved into implementation of local action plans for the management of marine litter with participation of the coastal communities of the Southeast Pacific.

¹² <http://unep.org/gpa/documents/publications/honolulustrategy.pdf>

136. Technical support was extended to the Government of Samoa through the Secretariat of the Pacific Regional Environment Programme (SPREP) to demonstrate best practice measures for effective waste management and minimization of marine debris. The private sector and the local communities were engaged in the implementation of the project, which had four components: community and media awareness; improved waste management in the ports of entry into Samoa in particular the Samoa Port and Samoa Airport; waste disposal facilities within the venue of the Third International Conference on Small Island Developing States and the accommodation providers; and working with the communities to improve waste practices in Apia areas.

137. Within the framework of this pilot project SPREP, with participation of the local communities carried out cleanup of the Mulivai and Vaisigano rivers, beach cleanups, installing trash stands in the beaches and provision of litter booms in major contributory rivers. Additionally under the project waste-craft skill development workshops were organised to train women groups in re-use of rubbish for making sought-after consumer products. Members of the Fugalei SISDAC women's committee, the Tuaeifu women's committee, the Pan-Pacific South East Asia Women's Association (PPSEAWA), and Women in Business Development Incorporated (WIBDI) attended these workshops. The project has spread effect in the region and been replicated in Fiji. The project has proven to be a huge success - not just in terms of raising awareness of sound waste management practices but also in providing income to many communities from the sale of items created from the waste materials.

138. The GPA Coordination Office's work on the marine litter contributed towards raising the profile of marine litter at a global level and resulted in adopting a resolution on marine plastic debris and microplastics by the governments during the First United Nations Environment Assembly (UNEA) in 2014. The UNEA through the adoption of Resolution 1/6¹³ recognized need to take urgent action to address the challenges posed by marine plastic debris and micro-plastics, by reducing pollution through improved waste management practices and by cleaning up existing debris and litter and welcomed the establishment of the Global Partnership on Marine Litter. Through this resolution the governments requested the Executive Director of UNEP "to support countries, upon their request, in the development and implementation of national or regional action plans to reduce marine litter (and) in consultation with other relevant institutions and stakeholders, to undertake a study on marine plastic debris and marine micro-plastics, building on existing work and taking into account the most up-to-date studies and data, ... (and) to present the study on micro-plastics for the consideration of the United Nations Environment Assembly at its second session in 2016. This decision of the UNEA signalled a firm commitment of the governments to address marine litter and created a huge impetus for the GPML.

139. UN Environment together with partners and members of the GPML continue to commit resources and share their expertise to deliver what the governments asked for through the 2014 UNEA Resolution 1/6. An Advisory Group was established within the framework of the GPML, including 29 Governments and Major Groups and Stakeholder nominated experts, to articulate the needs and interest of decision-makers and ensure that all components are of policy relevant. A detailed study under the title "Marine Plastic Debris and Microplastics - Global Lessons and Research to Inspire Action and Guide Policy Change" was produced. In line with the Resolution 1/6, the report proposed a set of policy recommendations to guide decision makers for urgent actions that could be adapted to global, regional, national and local contexts and identified areas

¹³ <http://web.unep.org/about/cpr/resolutions-and-decisions-unea-1>

that warrants more research, including key impacts on the environment and human health.

140. Subsequently with regard to knowledge generation several other reports have been published namely *Plastics in Cosmetics* with the Institute for Environmental Studies VU University Amsterdam¹⁴; *Biodegradable Plastics and Marine Litter - Misconceptions, concerns and impacts on marine environments*¹⁵; *MARPOL Annex V Training Package (with IMO), Abandoned, lost or otherwise discarded gillnets and trammel nets - Methods to estimate ghost fishing mortality, and the status of regional monitoring and management (with FAO)*¹⁶, *Review of the Current State of Knowledge Regarding Marine Litter in Wastes Dumped at Sea Under the London Convention and Protocol (IMO)*¹⁷, *Vital Graphics Marine Litter*¹⁸, and *Marine Litter Legislation – A Toolkit for Policymakers* in collaboration with Environment Law Institute, USA¹⁹.

141. The G7 Summit of June 2015 welcomed the UNEA's decision and called to give marine litter a high priority and recognised UNEP's work and in particular the role of the GPA in this field. In the G7 Summit Communiqué the leaders committed to develop action plan, to prevent, reduce and remove marine litter and use existing platforms and tools for cooperation to reduce duplication and take advantage of progress made e.g. the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), the Global Partnership on Marine Litter (GPML) and the Regional Seas Conventions and Action Plans and therefore support their use. They also called upon the Global Environment Facility (GEF) to support marine litter projects, and this subsequently resulted in the allocation of USD 2 million by GEF for a medium size project for 2017-18 with UN Environment as an implementing organization.

142. In pursuance to the UNEA Resolution 1/6, UNEP Executive Director presented the report on marine plastic debris and microplastics to the Second Session of the UNEA in May 2016.²⁰ This led to the adoption of Resolution 2/11 “Marine plastic litter and microplastic.”²¹ During the UNEA-2, the governments recalling the Manila Declaration of the GPA IGR-3 and outcomes of the United Nations Conference on Sustainable Development, stressed *“that prevention and environmentally sound management of waste are keys to long-term success in combating marine pollution, including marine plastic debris and microplastics, calls on Member States to establish and implement necessary policies, regulatory frameworks and measures consistent with the waste hierarchy (and) also recognizes that education, capacity-building, knowledge transfer and awareness-raising regarding sources and negative effects of and measures to reduce and prevent marine plastic debris and microplastics, as well as environmentally sound waste management systems and clean-up actions, are crucial (and) invites States, in cooperation with industry and other stakeholders, at the national, subregional, regional and international levels, to organize and/or participate in annual campaigns for awareness-raising, prevention and environmentally sound clean-up of marine litter, including in coastal areas and oceans”*.

¹⁴[http://apps.unep.org/publications/pmtdocuments/Plastic in cosmetics Are we polluting the environment through our personal care -2015Plas.pdf](http://apps.unep.org/publications/pmtdocuments/Plastic%20in%20cosmetics%20Are%20we%20polluting%20the%20environment%20through%20our%20personal%20care%20-2015Plas.pdf)

¹⁵<http://unep.org/gpa/documents/publications/PlasticinCosmetics2015Factsheet.pdf>

¹⁶<http://unep.org/gpa/documents/publications/BiodegradablePlastics.pdf>

¹⁷<http://www.fao.org/3/a-i5051e.pdf>

¹⁸[www.imo.org/en/OurWork/Environment/LCLP/newandemergingissues/Documents/Marine%20litter%20review%20for%20publication%20April%202016 final ebook version.pdf](http://www.imo.org/en/OurWork/Environment/LCLP/newandemergingissues/Documents/Marine%20litter%20review%20for%20publication%20April%202016%20final%20ebook%20version.pdf)

¹⁹<http://staging.unep.org/docs/MarineLitter.pdf>

²⁰http://apps.unep.org/publications/index.php?option=com_pub&task=download&file=012253_en

²¹ UNEP/EA.2/5: Report of the Executive Director on marine plastic debris and microplastics. <http://www.unep.org/about/sgb/Portals/50153/K1600817%20Doc%205%20Eng.pdf>

²¹ <http://web.unep.org/unea/list-resolutions-adopted-unea-2>

143. GPA Coordination Office also providing support to the development of regional and national action plans on marine litter and, where such action plans already exist, to facilitate implementation of national plan. This is done in partnership with the Secretariats of the Regional Seas Conventions and Action Plans such as the Mediterranean Action Plan of the Barcelona Convention, Black Sea Commission, Caribbean Environment Programme of the Cartagena Convention, Nairobi Convention, Abidjan Convention, Northwest Pacific Action Plan, Southeast Pacific and the South Pacific Regional Environment Programme, Kuwait Action Plan of the Regional Organization for the Protection of the Marine Environment, the South Asia Co-operative Environment Programme and the Coordinating Body on the Seas of East Asia.

144. Regional platforms for the GPML have been established in the Northwest Pacific, co-hosted by the Northwest Pacific Environmental Cooperation Center and the NOWPAP Secretariat, and the Wider Caribbean Region, hosted by the Gulf and Caribbean Fisheries Institute and the Cartagena Convention Secretariat. Administrative arrangement have been made for launching of two additional platforms; one in the Mediterranean and the other in the South Pacific. These regional platforms of the global partnership are mandated to identify stakeholders, define priority areas and coordinate with GPA Coordination Office to raise the profile of marine litter within the region through regionally appropriate approaches and to feed back information on regional priorities.

2.5.4 Reducing discharge of untreated wastewater

145. Pursuant to the decision of the IGR-3, GPA Coordination Office launched the Global Wastewater Initiative (GW²I) in October 2013. The GW²I is a global multiple stakeholder platform comprised of governments, UN agencies, international organizations, scientists, private sectors and major groups and stakeholders to provide the foundations for partnerships to initiate comprehensive, effective and sustained programmes addressing wastewater management. The GW²I aims to mobilise actions by various stakeholders in addressing unregulated and illegal discharges of untreated wastewater into the natural environment. It encourage policy and institutional reforms in support of new investments in wastewater management demonstrating that wastewater is a valuable resource for future water security and its management could create employment, support livelihoods, enhance human wellbeing and improve the health of the ecosystems.²²

146. The GW²I continues to built on the success of the GPA's Strategic Action Plan on Municipal Wastewater to further develop guidance to strengthening the normative basis for managing and monitoring the impacts of wastewater on the coastal and marine environment. The GPA Coordination Office through the GW²I facilitated in carrying out a comparative review of policies and legislations regulating wastewater treatment and management from developed and developing countries to provide a better understanding of good practices in addressing the global wastewater challenge.

147. The GW²I also conducted an economic valuation of wastewater to demonstrate the loss of coastal and marine ecosystem services due to discharge of untreated wastewater. The report provides a comprehensive picture of cost of no action versus benefits of effective wastewater management system from social and economic point of view. These publications will assist governments and other concerned stakeholders in designing policies and/or making investment decisions in addressing wastewater challenge. Additionally GW²I produced a wastewater technology matrix that could be

²² <http://unep.org/gpa/documents/GWI/GWIFactsheet.pdf>; <http://unep.org/gpa/gwi/gwi.asp>

used as decision-making tool for selecting appropriate wastewater management system. All these products are available on the web.²³

148. GPA Coordination Office in support of the GW²I working with national and local governments as well as Regional Seas Convention Secretariats in undertaking assessment of the status of National Programmes of Action (NPA) and defining issues for priority actions. Such a review carried out in cooperation with the Regional Organization for the Conservation of the Environment of the Red Sea & Gulf of Aden (PERSGA) of the Jeddah Convention has led to the development and adoption of the regional guidelines on wastewater management in coastal cities of the PERSGA member states and a manual for monitoring impact of wastewater on coral reefs. These documents are available in Arabic, English and French.

149. Technical support has also been given to Regional Organization for the Protection of the Marine Environment (ROPME) of the Kuwait Action Plan to review and update its current municipal wastewater management guidelines and develop a wastewater management strategy. With Abidjan Convention, GPA Coordination Office through the GW²I is engaged in the implementation the Canary Current Large Marine Ecosystem (CCLME) project to enhance knowledge and capacity development and strengthening policy regime for trans-boundary assessment and management of biodiversity, habitat and water quality critical to fisheries. Countries covered under this programme are Cape Verde, Guinea, Guinea Bissau, Mauritania, Morocco, Senegal and The Gambia. This programme has led to a regional assessment of pollution sources and the development of a regional action plan.

150. Under the Safe Use of Wastewater in Agriculture (SUWA) initiative, the GPA Coordination Office with its partners (FAO, WHO, UNU-INWEH, UNU-FLORES, UNW-DPC and IWMI) organized a series of awareness raising and capacity development workshops. During 2012-2013, this programme brought together 160 participants from 73 countries of Asia, Africa and Latin America. Building on the success of this initiative, GW²I is now working with its partners to launch a new programme to promote use of treated wastewater for non-agricultural purposes, such as watering of urban greens, golf courses irrigation etc. The programme is expected to generate revenue as well as help to alleviate the pressure on limited freshwater resources.

151. At national level under the GW²I, GPA Coordination Office through PERSGA supported the governments of Sudan, Egypt and Djibouti (through the Ministries of Environment and Natural Resources and Physical Development, the Ministry of Environment and Tourism in the Red Sea State, Egyptian Environmental Affairs Agency) to organize national workshops for the development of monitoring indicators to assess the impact of wastewater on coral reef in support to the implementation of the regional guidelines for wastewater management prepared under the auspices of PERSGA. Various stakeholder groups including the policy makers involved in marine and coastal resources management attended these workshops. These workshops served as an effective platform for the exchange of views and expertise on the subject, shed light on the challenges faced by monitoring programs in the region and the need to improve these programs, including the importance of community involvement and dissemination of knowledge on pollution and the ways to reduce it.

152. The GW²I is also supporting implementation of demonstration projects in piloting wastewater treatment technologies and innovative management practices. Technical and financial supports have been provided to Georgia, Morocco, Tanzania,

²³ <http://unep.org/gpa/resources/publications.asp>

Benin, Ethiopia, Ghana, and Antigua and Barbuda. In Georgia, the project “Reducing the pollution of the Black Sea through sustainable wastewater and nutrient management in Khobi Municipality of Georgia” among others succeeded in integrating women into implementation. The project outcomes have been used to develop a guidelines and checklist on gender mainstreaming in wastewater management under title “Wastewater Management meets Gender Mainstreaming - Why and How to Achieve Gender Equality in the Sanitation and Wastewater Sector- Global Guidelines and Checklist”. The checklist is prepared to support project designers to ensure gender equality, empowerment and inclusiveness of women and girls into the water and sanitation activities and interventions in support of realization of Sustainable Development Goal 5.

153. In Benin, Ethiopia, Ghana and Morocco the demonstration projects are aimed at reversing desertification through afforestation/reforestation through use of treated wastewater and restoring the degraded wetlands. Under these projects degraded land areas have been delineated to create green belt zones through plantation to conserve biodiversity as well as combating climate change by reducing the amount of carbon gases into the atmosphere. The planted trees are expected to provide fodder, control pollution, improving air quality and health of the population. The Ouarzazate Green Belt project of Morocco attracted wide public and media attention and was selected by the government as a showcase during the twenty-second session of the Conference of Parties (COP 22) of the UN Framework Convention on Climate Change (UNFCCC) held in Marrakech, Morocco in November 2016.

154. The Tanzanian project is designed to improve the regulatory framework and technical standards for proper wastewater treatment in Tanzania through construction of decentralized wastewater management system as an integrated concept for sustainable human settlement development in emerging housing schemes in non-sewered areas of Dar es Salaam. While the Antigua and Barbuda project is to train stakeholders in water use efficiency and reuse of treated wastewater techniques in small-scale agriculture production.

155. The GW²I Secretariat facilitated creation of regional platforms to articulate regional priorities and integrate them within the overall objectives of GW²I and its operational framework. The GW²I regional platforms for Asia and the Caribbean have already been established. The China Beijing Environmental Exchange (CBEEEX) is the host of the GW²I Asia platform and the Caribbean Water and Wastewater Association (CWWA) is the host of the Caribbean platform.

2.5.5 Outreach and advocacy

156. Since the IGR-3 GPA Coordination Office enhanced its outreach efforts to mobilise stakeholders to joining the GPA source category partnerships and engaging in dialogues and actions to expedite changes at the level of policy and practice. These were carried out through web-based technologies and production and dissemination of materials such as flyers, factsheet, videos, policy briefs, research reports, scientific papers in various languages. Standard presentations and videos with key messages for various audiences have also been uploaded in to the web. Some of the GPA outreach product such as the video on nutrients produced with support from Jim Toomey of the USA even won the international award “2014 BLUE Carpet Film Award” (<http://unep.org/gpa/resources/Videos.asp>). Press releases, media advisories, press conferences, public service announcements have also been made use of to enhance the visibility of the GPA and its three partnerships to create awareness on the challenges and opportunities in promoting better management of nutrients, marine litter and wastewater, and how such actions contribute to sustainable development.

157. UNEP's Executive Director also highlighted the GPA and its priority issues in his keynote addresses and messages delivered on various occasions. For example, in the keynote address (delivered by video) to the International Fertilizer Industry Association (IFA) 82nd Annual Conference in Sydney, Australia (May 2014), the Executive Director highlighted that if key development goals such as food and energy security and transition to the green economy in the context of sustainable development and poverty eradication are to be achieved, it would be important to ensure sustainable production and use of fertilizers and the industry has to come forward to play its historic role in this endeavour. He reiterated that without swift and collective action, the next generation will inherit a world where many millions may suffer from food insecurity caused by too little or too much nutrient use in agriculture. If we continue along the present trajectory, threats from too much will become more extreme, and unsustainable use of nutrients will contribute even more to biodiversity loss and accelerating climate change. The video link is available at <http://youtu.be/8uMUQzN6N4Y>.

158. GPA also ensured its presence in major global and regional meetings/conferences through holding of workshops, seminars, poster session and exhibits. At times GPA officials have taken part in the events organised by others as resource persons and/or key note speakers. The outreach and advocacy activities contributed in securing commitments from partners to GPA and its three partnerships as well as in influencing the global/regional agenda setting.

2.6 Programme implementation through the Regional Seas Conventions and Action Plans

159. The importance of regional cooperation for the implementation of the GPA is clearly articulated in the Paragraph 29 of the GPA. It is stated that "Regional and sub-regional cooperation and arrangements are crucial for successful actions to protect the marine environment from land-based activities. This is particularly so where a number of countries have coasts in the same marine and coastal area, most notably in enclosed or semi-enclosed seas. Such cooperation allows for more accurate identification and assessment of the problems in particular geographic areas and more appropriate establishment of priorities for action in these areas. Such cooperation also strengthens regional and national capacity-building and offers an important avenue for harmonizing and adjusting measures to fit the particular environmental and socio-economic circumstances". The GPA also advocated for creating new regional cooperative arrangements, where necessary, to support effective joint actions to mitigate and remediate impact on land-based sources of coastal and marine pollution.

160. In 1995 when the GPA was adopted, at regional level, six regional agreements dealing with the problem of land-based sources of marine pollution were in force. They were (i) the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention), (ii) the Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention), (iii) the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-based Sources (LBS Protocol to the Barcelona Convention), (iv) the Protocol for the Protection of the South-East Pacific against Pollution from Land-based Sources (Protocol to the Lima Convention), (v) the Protocol for the Protection of the Marine Environment against Pollution from Land-based Sources (Protocol to the Kuwait Regional Convention) and (vi) the Protocol on Protection of the Black Sea Marine Environment Against Pollution from Land-based Sources (Protocol to the Bucharest Convention).

168. These regional agreements concerning land-based sources and activities concluded prior to adoption of the GPA in 1995, generally cover the marine application area coinciding with the jurisdictional sea area of the relevant convention and a land application area measured up to the freshwater limit, including intertidal zones and salt-water marshes. Whereas, since the adoption of the Global Programme of Action, the regional agreements dealing specifically with the protection of the marine environment from land-based activities, are largely more comprehensive in terms of the application area (i.e., hydrological boundary) and the sources of pollution to be brought under regulation for maintaining the ecological integrity of the marine environment. However, regional Conventions, which had their own legal instruments in place to deal with land-based sources of marine pollution revised these instruments to make them more robust in addressing land-based sources of marine pollution such as the Barcelona and OSPAR Conventions.

2.6.1 Barcelona Convention

169. The Barcelona Convention, in 1996 introduced an amendment of the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities (LBS Protocol), to take into account the Global Programme of Action and this was signed by the contracting parties in its meeting at Syracuse, Italy. This Amendment entered into force in 2008. Under the revised/amended 1996 LBS Protocol, the Contracting Parties of the Barcelona Convention agreed to take all appropriate measures to prevent, abate, combat and eliminate, to the fullest possible extent, pollution of the Mediterranean Sea Area caused by discharges from rivers, coastal establishments or outfalls, or emanating from any other land-based sources and activities within their territories, giving priority to the phasing out of inputs of substances that are toxic, persistent and liable to bio-accumulate. Through these amendments, the parties also agreed to follow the application of the precautionary principle, the extension of the scope of the Protocol to airborne pollution of land-based origin, the regulatory system for waste discharge, the continued monitoring of pollution levels, and technical assistance to developing countries. Under this amendment the Contracting Parties also committed to implement, individually or jointly, as appropriate, national and regional action plans and programmes, containing measures and timetables for their implementation.

170. Marine pollution remained a key focus of the Barcelona Convention (Mediterranean Action Plan - MAP). The Strategic Action Programme to Address Pollution from Land-Based Activities in the Mediterranean Region (SAP/MED) identifies priority target categories of polluting substances and activities to be eliminated or controlled by the Mediterranean countries through a planned timetable (2000 - 2025) in line with concrete obligations of the Protocol of the Mediterranean Sea against Pollution from Land-based Sources (LBS Protocol). There are twenty-one LBS national action plans (NAP) to address land-based pollution. The Barcelona Convention Secretariat in its efforts to coordinate the regional marine pollution assessment and control carried out an evaluation of the national implementation of the Strategic Action Plan (SAP/MED) in 2012. The evaluation concluded that all the member States particularly on policy and regulatory aspects supported by monitoring programmes and reporting, and hot spot elimination have achieved important progress. The report, however, also noted that in considerations of the increasing trends of a number of pressures on marine and coastal environment, there is a need for enhancing NAP's financial sustainability and effective and streamlined reporting.

171. In the Meeting of the Contracting Parties to the Barcelona Convention held in France (February 2012), the governments among others adopted the Action Plan for the

implementation of the ICZM Protocol for the Mediterranean (2012–2019); regional plans in the framework of Article 15 of the LBS protocol and standards for bathing waters quality with reference to the Article 7 of the LBS Protocol and strategic framework for marine litter management. The Contracting Parties in its 18th meeting (December 2013) adopted the Marine Litter Regional Plan (MLRP) for the Mediterranean. The MLRP is a legally binding decision and came into force in July 2014. Under this MLRP the Contracting Parties agreed to act in a coherent manner in order to achieve respective targets on marine litter and integration of marine litter measures into the LBS national action plans, and development and implementation of appropriate policy and legal instruments, and institutional arrangements to prevent and reduce marine litter.

172. In the Mid-Term Strategy for the period 2016-2021 approved by the 19th meeting of the Contracting Parties of the Barcelona Convention (February 2016) land and sea based pollution is one of the three core themes outlined in the MTS. The MTS is designed to provide effective support to the Contracting Parties to implement the five pollution-related Protocols of the Convention with a particular focus on legally binding commitments arising from Articles 5 and 15 of the LBS Protocol. Under the MTS the Secretariat aims among others to expedite implementation of the programmes/measures as envisaged in the updated national action plans, developing and delivering package of key technical implementation tools/guidelines and provide technical assistance and capacity building for their implementation; support updating and strengthening of national pollution monitoring programme to monitor good/poor environmental status, emerging pollutants as well as the effectiveness of programmes of measures/NAPs in line with the LBS Protocol and enhance cooperation at regional, sub-regional and national levels to prevent and control marine pollution.

2.6.2 OSPAR Convention

173. The OSPAR Convention introduced an amendment in its protocol on the prevention and elimination of pollution from land-based sources in 1998 (24 July). Under this amendment it was stated that when adopting programmes and measures for the purpose of this amendment, the Contracting Parties shall require, either individually or jointly, the use of best available techniques for point sources, best environmental practice for point and diffuse sources including, where appropriate, clean technology. Furthermore, when setting priorities and in assessing the nature and extent of the programmes and measures and their time scales, the Contracting Parties shall use the criteria developed by the Convention Secretariat and agreed by the member States. For effective implementation of this amendment, the duty of the Commission would be to draw up plans for the reduction and phasing out of substances that are toxic, persistent and liable to bio-accumulate arising from land-based sources; and when appropriate, programmes and measures for the reduction of inputs of nutrients from urban, municipal, industrial, agricultural and other sources.²⁴

174. The members of the Commission for the Protection of the Marine Environment of the North-East Atlantic reaffirmed its commitment to delivering an ecosystem approach, adopting the North-East Atlantic environment strategy and joint assessment and monitoring programme (2010–2014) at its ministerial meeting in Bergen, Norway, in September 2010. The new strategy is informed by a 2010 quality status report that confirms qualified improvements for key Global Programme of Action sources. It is reported that nutrient discharges to eutrophication problem areas have fallen by 85 per cent compared to 1985 levels for phosphorus, whereas those for

²⁴ http://www.ospar.org/site/assets/files/1169/ospar_convention_a1.pdf

nitrogen only by up to 50 per cent. Discharges of radionuclides from nuclear installations have fallen, and radiation doses to humans and marine life from this pollutant are low in the regions encompassed by the Commission.

175. In 2013 the OSPAR Commission participated in the International Conference on Prevention and Management of Marine Litter in European Seas, organized by Germany and the European Commission. In the light of the outcome of this conference, and a series of OSPAR workshops and meetings, OSPAR adopted a Regional Action Plan on Marine Litter in 2014. The Regional Action Plan aims at the reduction of marine litter from sea-based sources and land-based sources, as well as the removal of existing litter from the marine environment. It also forms the basis for regional measures to deliver good environmental status under the litter Descriptor of the EU's Marine Strategy Framework Directive.

176. The OSPAR Commission also adopted the Guidelines for Coordinated monitoring for Eutrophication (OSPAR Agreement 2016-05) within the framework of Coordinated Environmental Monitoring Programme to enable Contracting Parties "to assess eutrophication status and trends, in particular through the application of the OSPAR Common Procedure; to assess pressures on the marine environment; to evaluate the effectiveness of measures in relation to the objectives of the OSPAR Eutrophication strategy". Under the programme pressures principally from inputs of nitrogen and phosphorus are monitored for all relevant parts of the OSPAR area.

2.6.3 Helsinki Commission

177. The Baltic Marine Environment Protection Commission (i.e., the Helsinki Commission) is promoting the application of an ecosystem approach to the protection of its marine environment. In 2007, in Krakow, it adopted a time-bound targeted regional action programme within the framework of the Baltic Sea Strategic Action Plan radically to reduce pollution in the Baltic Sea and restore its good ecological status by 2021. One major highlight of this new plan is that it ushers in a new era of marine environment protection by including the concept of maximum allowable nutrient (nitrogen and phosphorus) input and aiming to maintain the ecological status of the Baltic Sea. It also contains provisional country-wise annual nutrient input reduction targets to halt the degradation of the sea.

178. The Ministerial Meeting of the Helsinki Commission held in Copenhagen (October 2013) reviewed progress in the implementation of HELCOM Baltic Sea Action Plan (2007-2021) and reiterated its commitments among others "to contribute to global efforts for healthy and productive oceans and seas, especially under the framework of the UNEP Global Programme of Action for the Protection of the Marine Environment from the Land-based Activities" and called for actions for preserving biodiversity, further improvements in municipal wastewater treatment and prevention of pollution from agriculture as well as prevention of emissions and discharges of hazardous substances, reaching the targets for a healthy Baltic Sea environment, including nutrient reduction targets. The Ministerial Summit also decided to further pursue the coordinated national implementation of the Baltic Sea Action Plan and committed to strive for the development and application of sustainable agricultural practices with the least environmental impacts on the Baltic Sea, underpinned by technical, economic and regulatory measures to improve farm nutrient management, especially manure nutrient recycling, including calculation of nutrient surplus in fertilization practices, and nutrient accounting at the farm level.

2.6.4 Cartagena Convention

179. Due to sustained and continued support of the GPA Coordination Office, the contracting parties of several regional seas conventions entered into regional agreements to deal with the protection of the marine environment from land-based activities. To this effect, in the Wider Caribbean the member states of the Cartagena Convention adopted the Protocol Concerning Pollution from Land-based Sources and Activities in 1999 and that came into force in 2010. The text of the Protocol provides general obligations and a legal framework for regional co-operation. The operative annexes describe the work that each Contracting Party must do, and gives guidance for the development of regional actions. The Protocol establishes a list of land-based sources and activities and their associated contaminants of greatest concern to the marine environment; outlines and establishes the process for developing regional standards and practices for the prevention, reduction, and control of the sources and activities identified, establishes specific regional effluent limitations for domestic sewage; and finally requires each Contracting Party to develop plans, programmes and other measures for the prevention, reduction and control of agricultural non-point sources of pollution. A Scientific, Technical and Advisory Committee (STAC) monitor the implementation of the Protocol and also responsible for the development of future source-specific annexes if deemed necessary by the Contracting Parties of the Cartagena Convention.

180. The Caribbean Environment Programme under the Cartagena Convention (CAR/RCU) continues to provide guidance to member countries for introducing necessary policy and institutional reforms to ensure compliance of the LBSA protocol. Under its assessment and management of environment pollution the Secretariat among others is collecting data on nitrogen and phosphorus discharge into the region's coastal waters from industrial and domestic sources as well as giving technical and financial support to strengthen countries laboratory capacities to monitor LBS parameters. The Secretariat facilitated launching of three GPA partnerships namely GPNM, GPML and GW²I by hosting regional meetings. GPA Coordination Office in collaboration with the Caribbean Environment Programme secured a USD 245,000 grant from the US Department of State to support a new initiative "applying innovation to reduce nutrient pollution from wastewater and agricultural discharges in waterways, coastal and marine environments of the Caribbean Sea", targeting Jamaica and Costa Rica as demonstration countries. This project will be jointly implemented under the aegis of the GPNM Caribbean Regional Platform and the Caribbean Regional Platform of the GW²I over 2017 and 2018.

2.6.5 Bucharest Convention

181. The GPA Coordination Office implemented the legal component of a GEF project on ecosystem recovery in the Black Sea and, in cooperation with the permanent secretariat of the Black Sea Commission, provided technical and legal support for the revision of the Protocol on the Protection of the Marine Environment of the Black Sea from Land-Based Sources and Activities to the Convention on the Protection of the Black Sea against Pollution (Bucharest Convention). The Protocol was extensively discussed and negotiated by the contracting parties. Advocacy and outreach materials were also produced in the six national languages of the Black Sea region (Bulgarian, Georgian, Romanian, Russian, Turkish and Ukrainian), explaining the need and reasons for the revision of the Protocol, and incorporating the new provisions. The final draft protocol was presented at a ministerial meeting and diplomatic conference in Sofia on 7 April 2009, at which it was adopted and signed by all the Black Sea countries.

2.6.6 Jeddah Convention

182. Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) of the Jeddah Convention, adopted the Protocol concerning the Protection of the Marine Environment from Land-based Activities in the Red Sea and Gulf of Aden, in September 2005. The protocol includes the marine area specified in Article 2 of the Jeddah Convention. It also includes the coastal brackish water as well as the coastal swamps and lagoons, groundwater and water basins embodying the coastal collected waters. By signing the protocol the Contracting Parties agreed to take all appropriate measures to protect the environment of the Red Sea and Gulf of Aden against pollution resulting from any land-based sources or activities and to reduce and/or eliminate such pollution to the maximum extent possible with priority given to the gradual elimination of toxic, persistent, and biologically accumulating inputs. PERSGA has established the LBA Unit in its headquarters for development and implementation activities and projects concerning LBA, particularly the regional programme of action in coordination with the GPA Coordination Office.

2.6.7 Nairobi Convention

183. Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention), adopted in 1985, entered into force in 1996. Under the Nairobi Convention the Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land Based Sources and Activities (LBSA Protocol) was adopted in 2010. Through adoption of the LBSA Protocol the Contracting Parties agreed to take appropriate measures in conformity with international law “to prevent, reduce, mitigate, combat and, to the extent possible, eliminate the pollution or degradation of the Protocol area from land-based sources and activities, using for this purpose the best practicable means at their disposal and in accordance with their respective capabilities” (Art 4). They also committed to apply the precautionary principle, polluter pays principle and ensure that new or existing activities, developments, programmes, plans, policies and processes that are likely to cause significant adverse impacts to the marine and/or coastal environment are subjected to environmental impact assessment, environmental audit or strategic environmental assessment, as appropriate and prior authorization by a competent national authority or authorities as a matter of law.

2.6.8 Abidjan Convention

184. The Abidjan Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region adopted in 1981, entered into force in 1984. Under the Abidjan Convention “The Protocol to the Abidjan Convention concerning cooperation in the protection and development of marine and coastal environment from land-based sources and activities in the western, central and southern African region was adopted in June 2012. The objective of this Protocol is to prevent, reduce, mitigate and control pollution from land-based sources and activities on their territories or emanating from any other land-based source, including through the atmosphere, to protect and sustain the marine and coastal environment of the Protocol area (Art 1). By signing the Protocol the Contracting Parties agreed to “cooperate in the formulation and adoption of agreed measures, procedures, practices and standards, such as but not limited to, the precautionary principle, the polluter pays principle, environmental assessment and audit, environmental standards and integrated coastal area and river basin management to prevent, reduce, mitigate and control pollution from land-based sources and activities and to promote environmental management in conformity with the objectives of the Convention and this Protocol. The Contracting Parties also committed to “put in place appropriate

legislative and regulatory measures for the effective discharge of the obligations set forth in the Convention and this Protocol and endeavour to harmonize their national policies in this regard, cooperate with competent with sub-regional, regional and international organizations to ensure effective implementation of the Convention and this Protocol and to assist one another in fulfilling their obligations under the Convention and this Protocol.

2.6.9 Tehran Convention

185. Caspian Sea Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Tehran Convention), adopted in 2003 (4 November), entered into force in 2006 (12 August). Contracting Parties of the Tehran Convention are the governments of Azerbaijan, Iran, Kazakhstan, Russian Federation and Turkmenistan. The objective of this convention is “the protection of the Caspian environment from all sources of pollution including the protection, preservation, restoration and sustainable and rational use of the biological resources of the Caspian Sea”. In accordance with Articles 7 - 11 of the Convention the Parties among others undertake an obligation to take measures to prevent, reduce and control pollution from the land-based sources. Further, noting the importance for the Caspian littoral States of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities, during the fourth meeting of the Conference of Parties in 2012 (December 12) the member States signed the Protocol for the Protection of the Caspian Sea against Pollution from Land-based Sources and Activities. “The purpose of this Protocol is to prevent, control, reduce and to the maximum extent possible eliminate pollution of the marine environment from land-based sources and activities in order to achieve and maintain an environmentally sound marine environment of the Caspian Sea.” Under the Protocol the Contracting Parties committed to take all appropriate measures, individually or jointly in accordance with the provisions of the Convention to prevent, control, reduce and to the maximum extent possible eliminate pollution of and other adverse effects on the marine environment and coastal areas of the Caspian Sea from land-based sources and activities. The Contracting Parties therefore agreed to apply the precautionary principle, by virtue of which where there are threats of serious or irreversible damage to the marine environment or to public health, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent such damage; apply the polluter pays principle, by virtue of which the costs of pollution prevention, control and reduction measures are to be borne by the polluter; promote cooperation between and among Contracting Parties in environmental impact assessment related to activities which are likely to have significant adverse effect on the marine environment of the Caspian Sea; to promote sustainable development of the coastal areas through the integrated approach to development of coastal areas; and to cooperate on the basis of mutual consent in achieving the objectives of the Protocol with non-littoral States that have in their territories parts of the hydrologic basin of the Caspian Sea.

186. In realising the objectives of the Protocol, the Contracting Parties agreed to designate a national authority competent to coordinate the implementation of this Protocol and adopt regional and/or national programmes or plans of actions based on pollution source control and containing measure and, where appropriate, timetables for their completion. In developing such programmes or plans the contracting parties are urged to take into consideration recommendations of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities and the relevant provisions of the Strategic Action Programme for the Caspian Sea and inform accordingly other Contracting Parties through the Secretariat.

187. The Regional Seas Programmes, which do not have a protocol to address land-based sources of marine pollution, incorporated this into their 'action plan'.

2.6.10 Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific region

188. The Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific region (NOWPAP) supports member states in the implementation of the GPA through its programme on Marine Litter, Eutrophication and Integrated Coastal Zone and River Basin Management. Concerning GPA issues, current focus of the NOWPAP Action Plan is on nutrients and marine litter. Under the nutrients programme, the NOWPAP secretariat taking into account the conclusions and recommendations of the integrated eutrophication assessment in the selected area of the NOWPAP region (2011), has developed a common procedure to harmonize assessment data and their reference values, conducted more case studies including expanding the assessment area to include the open sea as well as developing regional ecological quality objectives where nutrients input could be one of the indicators/targets. The NOWPAP intergovernmental meeting has approved this common procedure. In the area of marine litter, NOWPAP member states have been encouraged to implement actions to prevent, monitor and remove marine litter at national and local level and have been addressing the problem of marine litter collectively through the formulation and implementation of the Regional Action Plan on Marine Litter. The Secretariat in 2013 has published a report titled "Best Practices of Marine Litter Management in Fisheries, Aquaculture and Shipping sectors in the NOWPAP region" to facilitate knowledge exchange and support members countries in their efforts to reduce the amount of marine litter and strengthen actions taken against marine litter. NOWPAP is also hosting the Northwest Pacific Regional Node of the Global Partnership on Marine Litter (GPML) and promoting the International Coastal Cleanup, thereby building close partnership relations with governments and NGOs in the region and beyond.

2.6.11 Coordinating Body on the Seas of East Asia

189. The Coordinating Body on the Seas of East Asia (COBSEA) primarily limited its efforts to strengthening the capacity of the member countries in discharging their obligations towards the implementation of the marine pollution related multilateral environmental agreements such as the Global Programme of Action and MARPOL and to this effect extending technical support to member States to facilitate dialogues and exchange of information and best management practices for the development, revision and harmonization of policies and legislations to address sources of marine pollution.

2.6.12 South Asian Seas Programme

190. The Action Plan for the South Asian Seas Programme (SASP) executed through the South Asia Cooperative Environment Programme (SACEP) is designed for the Protection of the Marine Environment from Land-based Activities through development of strategy, drafting of a regional programme for monitoring of marine pollution in the coastal waters of the South Asian Seas, regular exchange of relevant data and information; development of pilot activities in countries of the South Asian Seas to control the degradation of the marine coastal environment from land-based activities. The action plan also has components of training of personnel involved in these pilot projects to control the degradation of the marine and coastal environment from land-

based activities, and development of a regional programme to identify the special problems of the largest coastal cities, each having a population of more than 10 million in the areas of: (i) disposal of domestic effluents; and (ii) collection and disposal of solid wastes.

191. The Governing Council of SASP/SACEP in its meeting of 2003 urged its members to expedite implementation of the Global Programme of Action, and the Council agreed to develop a common, regional level legislative framework on coastal zone management. GPA Coordination Office assisted SASP/SACEP through undertaking a series of national workshops and review studies. This resulted in production of 5 national reports and synthesis report titled “Developing a Legal Framework for Managing Land Based Activities that Impact on the Coastal and Marine Environment in South Asia” for presentation to its Governing Council.

192. GPA Coordination Office in 2009 extended support to the Secretariat of the South Asian Seas Action Plan and South Asian Cooperative Environment Programme to organise a regional training workshop on “marine resources sampling and data collection and interpretation” in India targeting mid-level managers to help them in effectively perform their duties in conservation and management of marine resources. This was a five days training workshop and was co-sponsored by the Ministry of Earth Science, Government of India. This training workshop attended by senior officials of the Ministry of Environment, representing the governments of Bangladesh, India, Sri Lanka, Pakistan and Maldives was conducted in two parts. Firstly developing a common understanding on the basic theoretical issues through discussions on the land, followed by practical sampling and analysis conducted in the Andaman Sea on board in the Ministry of Earth Sciences research vessel the Sagar Kanya.

193. GPA Coordination Office in 2010 in partnership with the Foundation for Environmental Education, Denmark, extended financial support to the Secretariat of the South Asian Seas Action Plan to organise national workshops in its member States with participation of national focal points and other key stakeholder to propagate the idea of beach certification. These workshops provided a platform to further development of national programmes, and participating countries have agreed to pursue Beach Certification Programme to promote “A Clean beach – A Tourist Haven” concept.

194. In 2013, GPA Coordination Office facilitated in concluding a collaborative project between the SACEP/SASP and GEF/FAO supported Bay of Bengal Large Marine Ecosystem Project to undertake a review study on Controlling Nutrient Loading and Eutrophication of Coastal Waters of the South Asian Seas. The study identified the sources of nutrients that end up in the coastal waters and suggested measures for the development of a regional action plan as well as establishment of a regional policy forum to monitor progress in the implementation of the action plan. GPNM Asia Platform members carried out this study, while the GPNM secretariat nested within the GPA Coordination Office provided advisory services to SACEP to ensure scientific integrity of the study. The report was reviewed by a group of experts from the SACEP member countries (May 2014) and the SACEP Ministerial meeting in its meeting of 2014 welcomed the report and asked the secretariat to mobilize resources to address recommendations from the report.

2.6.13 Integrated coastal zone management protocols under regional seas programmes

195. **Barcelona Convention.** The Protocol on Integrated Coastal Zone Management in the Mediterranean aims at establishing a common framework for Integrated Coastal

Zone Management (ICZM) in the Mediterranean, entered into force on 24 March 2011. It is the first instrument of international law to be entirely and solely devoted to ICZM and has six aims (i) sustainable development of coastal zones by rational planning of activities; (ii) preservation of coastal zones; (iii) sustainable use of natural resources; (iv) preservation of ecosystems and coastlines; (v) prevention and reduction of natural disasters and climate change; and (vi) improvement of cooperation. Furthermore, the Protocol defines the general principles of ICZM, the coordinating procedures required for its implementation, its founding pillars, and the instruments of ICZM.

196. **Nairobi Convention.** The seventh Conference of Parties (COP7) of the Nairobi Convention in its meeting of December 2012 in Maputo, Mozambique agreed to develop a Protocol on Integrated Coastal Zone Management' (CP7/3). In pursuance to this decision the secretariat mobilised expertise and constituted a committee to draft the ICZM Protocol. The draft protocol has gone through a series of national and regional consultations. The progress was reported back to the Eighth Conference of Parties meeting in June 2015, and per CoP decision CP8/3 the Secretariat is holding negotiation meetings to finalise the instrument and present to the member States for adoption.

2.7 Other regional policy initiatives

2.7.1 European Union Marine Strategy

197. In view of the increasing concerns about the state of the oceans and seas of Europe, the European Union's Sixth Environment Action Programme included a commitment to develop a Thematic Strategy for the Protection and Conservation of the Marine Environment (the European Union Marine Strategy) with the overall aim "to promote the sustainable use of the seas and conserve marine ecosystems". While the European Union Marine Strategy is primarily focused on the protection of the regional seas bordered by European Union countries, it also takes into account the international dimension in recognition of the importance of reducing the footprint of the European Union in marine areas in other parts of the world, including the high seas.

198. The European Union Marine Strategy was prepared after an extensive consultation process, which took place from 2002 to 2004. GPA Coordination Office actively participated in the process through the working groups established for that purpose (i.e., addressing the ecosystem approach, monitoring and assessment, hazardous waste, and strategic goals and objectives), the inter-organization consultation forum and stakeholder meetings. On 24 October 2005, the European Commission adopted the European Union Marine Strategy, which addresses a number of threats, including the loss or degradation of biodiversity and changes in its structure, loss of habitats, contamination by dangerous substances and nutrients, and impacts of climate change.

2.7.2 European Union Water Framework Directive

199. The Water Framework Directive, although limited to the European regional context, constitutes an important example of integrated water management including coastal waters. As part of a substantial restructuring of European Union water policy and legislation, directive 2000/60/EC, agreed upon by the European Parliament and Council in September 2000, established a new framework for community action in the field of water policy. The directive, generally known as the Water Framework Directive, came into force on 22 December 2000. It rationalizes and updates existing European Union water legislation and provides for water management on the basis of river basin

districts, which include coastal waters. The Water Framework Directive is designed to integrate the way water bodies are managed across Europe. It aims to protect and enhance the water environment and prevent further deterioration of aquatic ecosystems and associated wetlands, promote the sustainable use of water, reduce water pollution, lessen the effects of floods and droughts, and introduce a coordinated approach to water management based on the concept of river basin district planning. The main activities for the implementation of the Directive will take place in the context of river basin management projects led by local authorities. The overall objective of river basin projects is to establish an integrated monitoring and management system for all waters within a river basin district, to develop a dynamic programme of management measures and to produce a river basin management plan that will be continually updated.

2.7.3 Partnerships in Environmental Management for the Seas of East Asia

200. Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) is an intergovernmental organization operating in East Asia to foster and sustain healthy and resilient oceans, coasts, communities and economies across the region. PEMSEA and GPA Coordination Office signed an memorandum of understanding in 2003 to undertake collaborative activities including sharing models of good practices through case studies; joint publication of Tropical Coasts; linking PEMSEA and GPA websites. Under this collaborative programme GPA Coordination Office contributed in the finalization of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA). The SDS-SEA was adopted by 12 countries of the region at the Ministerial Forum that took place during the East Asian Seas Congress in December 2003 held in Malaysia, through the Putrajaya Declaration. Through the Putrajaya Declaration of Regional Cooperation for the Sustainable Development of the Seas of East Asia, the ministers called “for the implementation of the Global Programme of Action and the Montreal Declaration on the Protection of the Marine Environment from Land-based Activities, with special emphasis on municipal wastewater, the physical alteration and destruction of habitats and nutrients through efforts at all levels.” As a contribution to GPA IGR-2, PEMSEA in collaboration with COBSEA brought out a special report “Partnership Opportunities for Enhancing GPA Implementation in the East Asian Region (2007-2011)”²⁵

201. Countries commitment to expedite implementation of the Global Programme of Action within the framework of the SDS-SEA was reiterated during the subsequent meetings of the Ministerial Forum. The 2009 Ministerial meeting also agreed to cover 20% of their coastal zone under the integrated management and adopt national coastal and ocean policies in 70 per cent of the countries by 2015. They also concluded to report on the state of the coastal health every three years during the EAS Congress. As of June 2015, ten of the twelve countries implementing the SDS-SEA, have developed and implemented national policies, strategies, action plans and programs in coastal and ocean management and river basin management. In addition, nine out of twelve countries (75% of the countries), have established national interagency and inter-sectoral coordination mechanisms for coastal and ocean management and river basin management. Progress in the implementation of the SDS-SEA is reviewed every three years through the EAS Partnership Council, of which GPA Coordination Office is a member.

²⁵ <http://pemsea.org/dev/sites/default/files/Partnership-Opportunities-for-Enhancing-GPA-Implementation-in-the-East-Asian-Region-2007-2011.pdf>

2.8 Support from the Global Environment Facility to facilitate Programme implementation

202. The Global Environment Facility (GEF) is one of the major actors in supporting countries to addressing the global environmental challenges and in their pursuits to sustainable development. The Global Environment Facility since its creation in October 1991, facilitated actions at global, regional and local levels to improve the state of environment and enhancing the wellbeing of communities. GEF investment through its International Waters focal area has been particularly of relevance for addressing the various source categories of the Global Programme of Action. In the early stage of the GPA, contribution of the GEF has been modest, but further to the Beijing Declaration, which calls on international financial institutions and mechanisms to finance activities of the GPA, the GEF contribution to the implementation of the GPA has increased significantly. During GEF-4 cycle (2006-2010), the GEF Council approved the use of integrated, ecosystem-based approaches to the management of trans-boundary water resources. In the International Waters Strategy of GEF-4, the focus has been on four priority global themes, one of which was 'Reducing Nutrient Over-Enrichment and Oxygen Depletion from Land-Based Pollution of Coastal Waters in LMEs Consistent with the Global Program of Action'. Under this thematic priority the GEF provided resources to projects and programmes addressing economically and ecologically problematic "Dead Zones" of oxygen-deficient water related to excessive levels of nitrogen and phosphorus pollution and oxygen-demanding substances. These have been with reference to its work on Large Marine Ecosystems and in support of the Global Programme of Action through implementation of national policy, legal, institutional reforms to reduce land-based sources of nitrogen and other pollutants consistent with agreed trans-boundary action programs and the Global Programme of Action.

203. GEF commitment to support GPA implementation was also incorporated in the strategic objectives of GEF-5 (2010-2014) International Waters focal area. The GEF-5 IW strategy noted that 'reduction of land-based sources of marine pollution will continue to demand GEF attention, particularly nutrients from sewage and agriculture that contribute to the alarming spread of coastal "Dead Zones" and adverse effects on coral reefs'. It also noted that 'GEF pilot successes in support for the GPA and nitrogen pollution reduction will be continued in order to reduce land-based nutrient pollution of shared LMEs and their coasts'. This was aimed at catalysing global attention to disruption of the nitrogen cycle and to limit the expansion of "Dead Zones" that interfere with food security and livelihoods. GEF International Waters focal area reiterated to support governments to introduce policy, legal, institutional reforms to reduce land-based inputs of nitrogen and other pollutants. The strategy, however, recognised that 'support to the GPA can only be at a limited level given limited replenishment funding to help address the disruption to the global nitrogen cycle'.

204. The GEF-6 International Waters Strategy (2014-2018) acknowledges that international waters, including freshwater and marine waters, are an increasing priority worldwide as these valuable resources face growing pressures and pollution further reduces the water available for human use, and thus accelerating the water crisis. It is also highlighted that globally, more than 80% of collected and discharged wastewater is not treated. Non-point pollution sources, such as from fertilizer application and animal farming, are other major contributors to pollution. The numbers of ocean hypoxic zones driven by nutrient loads and pollution have increased dramatically over the last 30 years, and there are now nearly 500 known hypoxic areas worldwide. Other land-and ship-based pollutants, such as high sediment loads, heavy metals, organic pollutants, and invasive species further contribute to the deteriorating ocean health. The GEF International Waters programme therefore defined "enhance multi-state cooperation

and catalyse investments to foster sustainable fisheries, restore and protect coastal habitats, and reduce pollution of coasts and Large Marine Ecosystems” as one of the three objectives for the GEF-6. Under the International Waters, the GEF clearly stated that “where capacity is built and collective action agreed upon, GEF will support national and local strategies and policies, as well as legal and institutional reforms to reduce coastal and upstream point and non-point sources of organic and inorganic nutrients and other key transboundary water pollutants. GEF-6 will also finance innovation in sewage treatment to decrease pressures on of freshwater, coastal and marine resources, with the overall goal of promoting ecosystem health, working with the Global Programme of Action on Land-based Sources of Marine Pollution (GPA), where relevant. GEF will engage the private sector in developing solutions, especially for agriculture sources of nutrients, aquaculture facilities, and process water from factories”.

205. Actual level of investment by GEF in supporting implementation of the Global Programme of Action could not be established due to two reasons. Firstly, a methodological challenge, as all GEF International Waters projects cannot be categorised as GPA facilitating project *per se*, though some components of a project may contribute to some source categories of GPA. Secondly, limited access to data from the very first replenishment phase of the GEF till the present. Notwithstanding the above limitations, based on review of various information that could be retrieved from the web and overview studies (including the one that GPA Coordination Office published in 2011 prior to IGR-3²⁶) it could be safely stated that the GEF through its International Waters programme supported nearly 300 projects around all regions of the world and extended financial grant over USD 2 billion which also mobilised several more billions to catalyse actions at various levels much of which contributes to the implementation of the Global Programme of Actions.

Part 3: The Global Programme of Action - Acknowledged and endorsed by the global community

206. Since the adoption of the Global Programme of Action almost all major international summits, conferences, meetings and the United Nations General Assembly sessions have consistently acknowledged the merits of the Programme and urged the countries to expedite implementation of the GPA.

3.1 United Nations General Assembly

207. The very first call by the United Nations General Assembly on the implementation of the Global Programme of Action was made in 1996. The General Assembly through its decision 51/189 (December 1996) stressed the need for States to take action for the formal endorsement by each competent international organization of those parts of the Global Programme of Action that are relevant to their mandates and to accord appropriate priority to the implementation of the Global Programme of Action in the work programme of each organization”. Since then almost each and every sessions of the United Nations General Assembly deliberated on the Global Programme of Action and also passed resolutions. The Seventy-first session the General Assembly held in

²⁶ The role of the Global Environment Facility's International Waters focal area in: Helping build the necessary institutional and management capacity for country led efforts to implement the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities. UNEP/GPA/IGR.3/INF/13

2016 though did not make any specific resolution on the Programme, adopted an overarching resolution on the “Implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the outcomes of the World Summit on Sustainable Development and of the United Nations Conference on Sustainable Development. In this resolution the member States affirmed their commitments towards the full implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21, the Johannesburg Plan of Implementation, including the time-bound goals and targets” (A/RES/71/223). Reference to the above resolution merits attention due to the fact that Global Programme of Action was developed to contribute in the implementation of the Agenda 21, and the Johannesburg Plan of Implementation among others made a specific call for GPA implementation (see Paragraph 215).

208. The Seventieth Session of the United Nations General Assembly in its Resolution 70/235 (December 2015) once again re-emphasized on the importance and urgency to protect and preserve the marine environment and its living marine resources against pollution and physical degradation, and recognizing “that most of the pollution load of the oceans emanates from land-based activities and affects the most productive areas of the marine environment, calls upon States, as a matter of priority, to implement the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and to take all appropriate measures to fulfil the commitments of the international community embodied in the Manila Declaration on Furthering the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities” (Para 199).

209. The General Assembly in the aforementioned Resolution, also expressed its concern about the adverse impact of marine debris on the biological diversity, health and productivity of the marine environment and consequent economic loss, spreading of hypoxic dead zones and harmful algal blooms in oceans as a result of eutrophication fuelled by riverine run-off of fertilizers, sewage outfall and reactive nitrogen resulting from the burning of fossil fuels and resulting in serious consequences for ecosystem functioning. The General Assembly therefore, urged the member States, in accordance with the commitment expressed in “The Future We Want” to cooperate, as appropriate, to address marine debris and microplastics in the marine environment and by 2025 to achieve significant reductions in marine debris to prevent harm to the coastal and marine environment, among others through the Global Partnership on Marine Litter, and develop coordinated strategies to enhance their efforts to reduce eutrophication, particularly by reducing total nutrient pollution from land-based sources and, to this effect, to continue to cooperate within the framework of relevant international organizations, in particular the Global Programme of Action (cf. Para 170-171, 188-193, 199-200 and 203). For many more United Nations General Assembly resolutions see Appendix 4.

3.2 The 2030 Agenda for Sustainable Development

210. The Heads of State and Government, and the High Representatives through adoption of “The 2030 Agenda for Sustainable development” (September 2015) committed to take further effective measures and actions to conserve and sustainably use oceans and seas. Of the seventeen goals articulated in the Agenda 2030, under “Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development” the global community committed “*by 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution*” (emphasis added). The global community through the adoption of SDGs also committed “by 2030, improve water quality by reducing

pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe use globally” (SDG 6.3).

Xxx In June 2017 the United Nations hosted a high-level Conference to Support the Implementation of Sustainable Development Goal 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development that was convened at the United Nations Headquarters in New York. The Governments of Fiji and Sweden co-hosted the Conference which drew government delegates from most countries across the globe, in addition to UN agencies, representatives from other governmental and non-governmental organizations and the private sector. The conference resulted in the main Outcome Document “Our ocean, our future: call for action” which laid the basis for a global commitment to safeguard the health of the oceans.

The Global Programme of Action Coordination Office contributed significantly to the preparatory process leading up to the conference and was tasked with the co-hosting, along with the International Maritime Organization, of an Informal Working Group on marine pollution, with a focus on target 14.1 that speaks to the reduction of pollution discharges into the marine environment. The contributions of the Informal Working Group led to the development of the Concept Paper²⁷ on Addressing Marine Pollution that served as the backdrop for the Partnership Dialogue on marine pollution that was held within the conference. The Global Programme of Action Coordination Office also served in an active moderating role to the Ocean Action Hub, under the marine pollution theme. The Ocean Action Hub was established in support of the conference to facilitate multi-stakeholder engagement.

The Outcome Document “Our ocean, our future: call for action” adopted under UN General Assembly Resolution 71/312 on 6 July 2017 at the close of the conference acknowledged the concern of countries on the *“impacts of climate change on the ocean, including the rise in ocean temperatures, ocean and coastal acidification, deoxygenation, sea level rise, the decrease in polar ice coverage, coastal erosion and extreme weather events”*. Significant hallmarks of the Call for Action included the need to *“Accelerate actions to prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris, plastics and microplastics, nutrient pollution, untreated wastewater, solid waste discharges, hazardous substances, pollution from ships and abandoned, lost or otherwise discarded fishing gear, as well as to address, as appropriate, the adverse impacts of other human-related activities on the ocean and on marine life, such as ship strikes, underwater noise and invasive alien species”* and to *“Promote waste prevention and minimization; develop sustainable consumption and production patterns; adopt the 3Rs...”* approach and to *“Implement long-term and robust strategies to reduce the use of plastics and microplastics, in particular plastic bags and single-use plastics, including by partnering with stakeholders at relevant levels to address their production, marketing and use.*

The full text of the Outcome Document “Our ocean, our future: call for action” can be found at http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/71/312&Lang=E

²⁷ Concept Paper on Addressing Marine Pollution
<https://sustainabledevelopment.un.org/content/documents/14398Partnershipdialogue1.pdf>

3.3 International Conference of the Small Island Developing States

211. The Heads of State and Government and High-level Representatives at the third International Conference on Small Island Developing States held in Samoa (September 2014) in the outcome document 'SIDS Accelerated Modalities of Action' (also called SAMOA Pathway) articulated their commitments "to address marine pollution by developing effective partnerships, including through the development and implementation of relevant arrangements, such as the United Nations Environment Programme Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, and, as appropriate, instruments on marine debris and on nutrient, wastewater and other marine pollution, and through the sharing and implementation of best practices" (Para 58d).

Similar commitment was also made by governments while attending the International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States in Mauritius in 2005. The governments through adoption of the Mauritius Declaration and the Mauritius Strategy for the Further Implementation of the Barbados Programme of Action, called for collaboration between small island developing States and international development partners to "fully implement the Global Programme of Action, particularly with the support of United Nations Environment Programme, by undertaking initiatives to specifically address the vulnerability of small island developing States" (Mauritius Strategy Paragraph 32).

3.4 United Nations Conference on Sustainable Development 2012

212. The Heads of State and Government and high-level representatives, attending the United Nations Conference on Sustainable Development in Rio de Janeiro, Brazil, (June 2012) in the conference outcome document 'The Future We Want' noted "*with concern that the health of oceans and marine biodiversity are negatively affected by marine pollution, including marine debris, especially plastic, persistent organic pollutants, heavy metals and nitrogen-based compounds, from a number of marine and land-based sources, including shipping and land run-off. We commit to take action to reduce the incidence and impacts of such pollution on marine ecosystems, including through the effective implementation of relevant conventions adopted in the framework of the International Maritime Organization (IMO), and the follow-up of the relevant initiatives such as the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, as well as the adoption of coordinated strategies to this end*" (Para 163, emphasis added). The governments in the outcome document also stressed "the need to adopt measures to significantly reduce water pollution and increase water quality, significantly improve wastewater treatment and water efficiency and reduce water losses....." (Paragraph 124).

3.5 G7 Summit

214. The leaders attending the G7 Summit in June 2015 called to give marine litter a high priority and recognised UNEP's work and in particular the role of the GPA in this field. In the G7 Summit Communiqué the leaders committed to develop action plans, to prevent, reduce and remove marine litter and use existing platforms and tools for cooperation to reduce duplication and take advantage of progress made e.g. the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), the Global Partnership on Marine Litter (GPML) and the Regional Seas Conventions and Action Plans and therefore support their use.

3.6 World Summit on Sustainable Development (WSSD) 2002

215. At the World Summit on Sustainable Development in 2002, world leaders identified the importance of the Global Programme of Action through the Johannesburg Plan of Implementation. The Johannesburg Plan of Implementation (Paragraph 33), calls upon governments, *inter alia*, to “advance implementation of the Global Programme of Action for the Protection of the Marine Environment from Land -based Activities and the Montreal Declaration on the Protection of the Marine Environment from Land -based Activities, with particular emphasis during the period from 2002 to 2006 on municipal wastewater, the physical alteration and destruction of habitats, and nutrients through actions at all levels to:

- (a) Facilitate partnerships, scientific research and diffusion of technical knowledge; mobilise domestic, regional and international resources and promote human and institutional capacity-building, paying particular attention to the needs of developing countries;
- (b) Strengthen the capacity of developing countries in the development of their national and regional programmes and the mechanisms needed to mainstream the objectives of the Global Programme of Action and to manage the risks and impacts of ocean pollution; and
- (c) Elaborate regional programmes of action and improve the links with strategic plans for the sustainable development of coastal and marine resources, noting in particular areas that are subject to accelerated environmental changes and development pressures.

3.7 Mainstreaming into UN Environment’s programme of work

216. Wide acknowledgement of the Global Programme of Action by governments reflected in their actions at national, regional and global levels contributed to GPA’s gradual incorporation within the UNEP wider programme of work and its various thematic areas and sub-programmes.

217. GPA source categories appear under two thematic areas of UNEP in the 2014-2015 UNEP programme of work, approved by the 27th Session of the Governing Council (February 2013). Under expected accomplishments of Chemical and Waste sub-programme, one of the outputs was defined as “actions catalysed through the multi-stakeholder Global Partnership on Nutrient Management to reduce and, where possible, eliminate threats to aquatic environments from land-derived nutrients”. The Ecosystem Management sub-programme committed “the GPA global partnerships on wastewater and marine litter developed and relevant catalytic actions identified and tested”. These commitments were pursued, and the 2014 programme performance report of UNEP (2015:35) noted that “UNEP’s main avenues for supporting countries to integrate the ecosystem approach in their efforts to sustain coastal and marine ecosystems are through the Regional Seas Programmes and the Global Programme of Action for the Protection of the marine Environment from on Land-Based Activities (GPA)”. The UNEP 2015 Annual Report re-emphasised the importance of GPA and Regional Seas Programme as the main vehicles that UNEP uses to support countries in integrating the ecosystem approach in their efforts to sustain coastal and marine ecosystems” (2016:25).

218. In the 2016-2017 programme of work UNEP reiterated “to promote the management of coasts and marine systems to ensure ecosystem services are restored or

maintained and also committed to “keep under review the trends in the production, use and release of chemicals and waste to identify issues of concern and catalyse sound management actions, including through multi-stakeholder partnerships that address them”. Furthermore, GPA Coordination Office, through the Marine and Coastal Ecosystems Branch and the Science Division of UN Environment is collaborating with IOC-UNESCO in the development of the indicators under SDG 14 on marine pollution. GPA Coordination Office delivers this through the existing wider research cooperation of partners associated with the GPNM and GPML.

Lessons learned and the way forward

219. Land-based sources of marine pollution undermine both the natural and the human resource base, and thus the health and wellbeing of coastal communities and their hinterlands, as well as habitats and species. The Global Programme of Action was adopted as a response to this multi-sectoral challenge, addressing questions of food security, poverty alleviation, public health, sustainable management coastal and marine resources and ecosystems, and economic and social benefits within the context of integrated coastal zone and watershed management approaches. Subsequently, the governments decided to use the Programme in advancing integrated planning approach, linking in with wider national and regional programmes and national strategies for sustainable development.

220. The activities under the Global Programme of Action, therefore relate to the work of a number of Conventions and multilateral agreements at global and regional levels, as well as the work of a number of UN agencies, donors and other multilateral organisations. As such, the GPA's integrated approach offers opportunities for the development of synergies and linkages, between governments and within the UN and multilateral system, and over the last decades much have been accomplished. These are clearly reflected in the acknowledgement of the GPA in various United Nations General Assembly resolutions, The Future We Want – the outcome document of the United Nations Conference on Sustainable Development (UNCSD) 2012 and reference to several GPA source categories objectives in the recently adopted 2030 Agenda for Sustainable Development. However, given the fact that over 20 years have passed since the adoption of the GPA, it would probably be the right time to reflect on the past achievements and challenges to consider strategies how in practice the objectives of the GPA can best be achieved further.

221. If the added value of the GPA is its integrated policy approach, then what is required is a commensurate integrated institutional structure, one which enables the right synergies and linkages to be made with other bodies, and strong enough to help channel resources for addressing the challenges that affects the health of the marine environment. It may be worth to recall that the international community (through the GPA itself) recognised that UNEP's Regional Seas Programmes are key to GPA implementation. Indeed, the Regional Seas programmes have already provided the impetus for a range of legally binding protocols and voluntary arrangements, which have demonstrated what can and needs to be done.

222. UNEP in line with its leading role as environmental catalyst has brought all coasts and ocean programmes i.e., GPA, Regional Seas, SIDS and Corals- under one Branch (Marine and Coastal Ecosystem Branch) of the Division of Environmental Policy Implementation. This makes integration easier and ensuring that different coasts and ocean programmes supported by UNEP are mutually supportive. However, what is not yet taken shape a strong institutional structure associated with GPA, to facilitate integrated approach to protecting the marine environment, centred on the GPA and involving the full participation of governments, key UN agencies and multilateral bodies as it was envisaged while adopting the GPA through the Washington Declaration and the United Nations General Assembly resolution (A/RES/51/189).

223. Additionally, notwithstanding the sincere efforts of the governments and GPA Coordination Office to ensure that the GPA (coastal and marine issues) is properly factored into country polices and programmes so that investment can be attracted and

channelled effectively, challenge still remains to bring policy makers closer together to potential investors, embracing not only the donor community and UN agencies and bodies, but also the private sector and civil society generally. Indeed, this should be the essence of 'mainstreaming GPA' and in part contingent upon the governance system. A more responsive and effective governance and institutional structure in itself would be the key in raising the visibility of benefits of GPA implementation.

224. This review of the GPA lends itself, therefore, to a discussion about marine and/or oceans governance, so as to improve its own delivery, and because of its wider impacts in promoting more effective coordination and cooperation by the international system on marine issues. For the GPA to translate its potential into fully effective action across a broad front, the governments and UNEP, in its role as the Secretariat, must facilitate a process to bring together Regional Seas Programmes and other key players such as regional development banks, economic commissions, the private sector, donors, river basin authorities, multilateral environmental agreements, UN agencies to ensure synergies of actions and agree on an agenda focusing on assisting governments in fulfilling their commitments on delivering "The 2030 Agenda for Sustainable Development" through implementing the Global Programme of Action.

ANNEXURES

Annex- 1: MONTREAL DECLARATION ON THE PROTECTION OF THE MARINE ENVIRONMENT FROM LAND-BASED ACTIVITIES

(Adopted by the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities at its first meeting on Friday, 30 November 2001)

1. WE, THE REPRESENTATIVES OF 98 GOVERNMENTS, WITH THE VALUED SUPPORT AND CONCURRENCE OF DELEGATES FROM INTERNATIONAL FINANCIAL INSTITUTIONS, INTERNATIONAL AND REGIONAL ORGANIZATIONS, THE PRIVATE SECTOR, NONGOVERNMENTAL ORGANIZATIONS, OTHER STAKEHOLDERS AND MAJOR GROUPS, MEETING IN MONTREAL, CANADA, FROM 26 TO 30 NOVEMBER 2001, FOR 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,

AGREE AS FOLLOWS;

2. WE ARE CONCERNED THAT:

(a) The marine environment is being increasingly degraded by pollution from sewage, persistent organic pollutants, radioactive substances, heavy metals, oils, litter, the physical alteration and destruction of habitats, and the alteration of timing, volume and quality of freshwater inflows with resulting changes to nutrient and sediment budgets and salinity regimes;

(b) The significant negative implications for human health, poverty alleviation, food security and safety and for affected industries are of major global importance;

(c) The social, environmental and economic costs are escalating as a result of the harmful effects of land-based activities on human health and coastal and marine ecosystems and that certain types of damage are serious and may be irreversible;

(d) The impacts of climate change on marine environments are a threat to low-lying coastal areas and small island States due to the increased degradation of the protective coastal and marine ecosystems;

(e) Greater urgency is not accorded to taking action at the national and regional levels for meeting the objectives of the Global Programme of Action.

3. WE ARE CONCERNED also about the widespread poverty, particularly in coastal communities of developing countries, and the contribution that the conditions of poverty make to marine pollution through, for example, lack of even basic sanitation; and how marine degradation generates poverty by depleting the very basics for social and economic development.

4. WE ACKNOWLEDGE that the United Nations Convention on the Law of the Sea and Agenda 21 provide the key framework for implementing the Global Programme of Action.

5. **WE DECLARE** that implementation of the Global Programme of Action is primarily the task of national Governments. Regional seas programmes also play an important role in implementation and both should include the active involvement of all stakeholders.

6. **WE SHALL COOPERATE** to improve coastal and ocean governance for the purpose of accelerating the implementation of the Global Programme of Action, by mainstreaming, integrating coastal area and watershed management, and enhancing global, regional and national governance processes.

7. **WE SHALL ALSO COOPERATE** to identify new and additional financial resources to accelerate the implementation of the Global Programme of Action, by building capacity for effective partnerships among Governments, industry, civil society, international organizations and financial institutions, and by making better use of domestic and international resources.

Mainstreaming of the Global Programme of Action

8. **WE COMMIT** ourselves to improve and accelerate the implementation of the Global Programme of Action by:

(a) Incorporating the aims, objectives and guidance of the Global Programme of Action into new and existing activities, action programmes, strategies and plans at the local, national, regional and global levels and into sectoral policies within our respective jurisdictions;

(b) Strengthening the capacity of regional seas organizations for multi-stakeholder cooperation and action, including through participation in partnership meetings focused on concrete problem identification and solution;

(c) Supporting the ratification of existing regional seas agreements and development of additional ones, as appropriate, and promoting collaboration between existing regional seas organizations, including through twinning mechanisms;

(d) Calling on the United Nations agencies and programmes and international financial institutions to incorporate, where appropriate, the objectives of the Global Programme of Action into their respective work programmes, giving priority in the period 2002-2006 to addressing the impacts of sewage, physical alteration and destruction of habitats and nutrients on the marine environment, human health, poverty alleviation, food security and safety, water resources, biodiversity and affected industries;

(e) Calling upon regional seas programmes in light of assessments of their marine environment to:

(i) Identify priorities with particular regard to those set out in paragraph 8 (d) above;

(ii) Prepare action plans to address the implementation of those priorities and work, as appropriate, with national authorities to implement those plans;

(iii) Produce interim reports on the carrying out of these action plans

with a view to completing full reports at the time of the next Global Programme of Action review.

Oceans and Coastal Governance

9. **WE FURTHER COMMIT** ourselves to improve and accelerate the implementation of the Global Programme of Action by:

(a) Taking appropriate action at the national and regional levels to strengthen institutional cooperation between, inter alia, river-basin authorities, port authorities and coastal zone managers, and to incorporate coastal management considerations into relevant legislation and regulations pertaining to watershed management in particular transboundary watersheds;

(b) Strengthening the capacity of local and national authorities to obtain and utilize sound scientific information to engage in integrated decision-making, with stakeholder participation, and to apply effective institutional and legal frameworks for sustainable coastal management;

(c) Strengthening regional seas programmes to play a role in, as appropriate, coordination and cooperation:

(i) In the implementation of the Global Programme of Action;

(ii) With other relevant regional organizations;

(iii) In regional development and watershed management plans;

(iv) With global organizations and programmes relating to implementation of global and regional conventions;

(d) Supporting this new integrated management model for oceans and coastal governance as an important new element of international environmental governance;

(e) Improving scientific assessment of the anthropogenic impacts on the marine environment, including, inter alia, the socio-economic impacts;

(f) Enhancing the state-of-the-oceans reporting to better measure progress towards sustainable development goals, informing decision-making (such as setting management objectives), improving public awareness and helping assess performance;

(g) Improving technology development and transfer, in accordance with the recommendations of the United Nations General Assembly.

Financing of the Global Programme of Action

10. We commit ourselves to improve and accelerate the implementation of the Global Programme of Action by:

(a) Strengthening the capacity of local and national authorities with relevant financial and other resources to identify and assess needs and alternative solutions to specific land-based sources of pollution; and to formulate, negotiate and implement contracts and other arrangements in partnership with the private sector;

(b) Calling on international financial institutions and regional development banks and other international financial mechanisms in particular the World Bank and the Global Environment Facility, consistent with its operational strategy and policies, to facilitate and expeditiously finance activities related to the implementation of the Global Programme of Action at regional and national levels;

(c) Giving due consideration to the positive and negative impacts of domestic legislation and policies, including, inter alia, fiscal measures, such as taxation and subsidies, on land-based activities degrading the marine and coastal environment;

(d) Taking appropriate action at the national level including, inter alia, institutional and financial reforms, greater transparency and accountability, the development of multi-year investment programmes and providing an enabling environment for investment.

Other provisions

11. We welcome the Strategic Action Plan on Municipal Wastewater and urge the United Nations Environment Programme to finalize this document as a tool for implementing the objectives of the Global Programme of Action.

12. We call upon Governments to ratify the Stockholm Convention on Persistent Organic Pollutants, the 1996 Protocol to the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter and other relevant agreements in particular regional conventions, such as the 1999 Aruba Protocol to the Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and protocols dealing with the prevention of pollution of the marine environment as a means of implementing the Global Programme of Action. We also stress the need for increased international cooperation on chemicals management.

13. We welcome also the work done by the Global Programme Coordination Office, commend its 2002-2006 work programme to the Governing Council of the United Nations Environment Programme and encourage it to implement the programme at a strengthened level, subject to availability of resources.

14. We note the outcome of the first Intergovernmental Review of the Global Programme of Action as a valuable contribution to the implementation of Agenda 21.

We request that the next Global Ministerial Environment Forum endorse this outcome.

We commend the outcome to the attention of the Monterey International Conference on Financing for Development, as well as of the Third World Water Forum to be held in Kyoto, Japan in 2003. We request the preparatory process of the World Summit on Sustainable Development to take full account of the outcome of this meeting and the objective of the Global Programme of Action as it considers measures on protection of the marine environment.

15. We request the Executive Director of the United Nations Environment Programme to convene the second Intergovernmental Review Meeting in 2006 and seek support for organizing the meeting.

Annex – 2: Beijing Declaration on furthering the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

We the representatives of 104 governments and the European Commission, with the valued support and concurrence of delegates from international financial institutions, international and regional organizations, the private sector, non-governmental organizations, other stakeholders and major groups,

Having met in Beijing from 16 to 20 October 2006 at the second session of the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities,

Acknowledging that people are dependent on the oceans and coasts and their resources for their survival, health and well-being, that a significant number of people derive their food security and economic livelihood from the coastal and marine environment and that many of those areas, in particular low-lying coastal areas and small island developing States, are vulnerable to the rise in the sea level and climate-related natural disasters as well as effects on the marine environment of ocean acidification resulting from land-based activities,

Noting the steady urbanization of coastal areas, with close to 40 per cent of the world's population living within 100 kilometres of the coast, and concerned about the findings of the United Nations Environment Programme's Global Marine Assessment and its report "The state of the marine environment: trends and processes", in particular as regards the severe and increasing occurrence of nutrient over enrichment of coastal waters, the continuing and projected increase in the discharge of untreated municipal, industrial and agricultural wastewater, and the substantial increase of atmospherically transported emissions,

Recognizing the growing damage that those trends are causing to people and the environment, including stress on marine ecosystems, loss of corals and wetlands, contamination of marine sources of human food and prejudice to the amenity of beaches and the health of bathing waters,

Noting the continuing need for improved monitoring to identify threats at regional, national and local levels and to assess the impact and effectiveness of measures to address such problems,

Recognizing that the Global Programme of Action is an effective tool for integrating environmental concerns into development planning and strategies at the regional and national levels and that, as such, it contributes substantially to the achievement of the internationally agreed development goals, including those contained in the Millennium Declaration²⁸ and those highlighted in Agenda 21,²⁹ the Barbados

²⁸ See General Assembly Resolution 55/2.

²⁹ 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, annex II.

Programme of Action,³⁰ the Johannesburg Plan of Implementation and the Mauritius Strategy for the Sustainable Development of Small Island Developing States,³¹

Emphasizing the importance of the Global Programme of Action in addressing the interaction of land and ocean and integrating freshwater with coastal and marine management approaches, thereby protecting human health and livelihoods while fostering the application of ecosystem approaches,

Noting that the need for sufficient financial resources and for capacity-building are major challenges faced by developing countries for the successful implementation of the Global Programme of Action,

Recognizing the important contribution of the United Nations Environment Programme Regional Seas Programme, the Global Environment Facility and international financial institutions in implementing the Global Programme of Action and concurrently recognizing the financial constraints faced in such implementation and the consequent need for resource mobilization and support,

Noting the progress made by some countries in building institutional capacity and developing legislative frameworks and environmental policies regarding the sustainable management of the marine and coastal environment,

Supporting the Bali Strategic Plan for Technology Support and Capacity-building, adopted by the Governing Council of the United Nations Environment Programme/Global Ministerial Environment Forum at its twenty-third session, in view of the fundamental role of capacity-building in the implementation of the Global Programme of Action,

Acknowledging the important contribution of multi-stakeholder partnerships, including those concluded at the current session of the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, to the implementation of intergovernmental commitments to advance action on internationally agreed and recognized goals,

Recognizing the successful results and achievements in the progression from planning to implementation of the Global Programme of Action in the period 2002–2006 and, in particular, the contribution of the United Nations Environment Programme's Global Programme of Action Coordination Office,

Resolve

1. To recommit ourselves to the Global Programme of Action as a flexible and effective tool for the sustainable development of oceans, coasts and islands;
2. To commit ourselves to furthering the implementation of the Global Programme of Action in 2007–2011:
 - (a) By applying ecosystem approaches;

³⁰ Report of the Global Conference on the Sustainable Development of Small Island Developing Status, Bridgetown, Barbados, 25 April-6 May 1994 (United Nations publication, Sales No. 4.94.I.18 and corrigenda), chap. 1, resolution 1, annex II.

³¹ Report of the International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing Status, Port Louis, Mauritius, 10-14 January 2005 (United Nations publication, Sales No. E.05.II.A.4 and corrigendum), chap. I, resolution 1, annex II.

- (b) By valuing the social and economic costs and benefits of the goods and services that coasts and oceans provide;
- (c) By establishing partnerships at the national, regional and international levels;
- (d) By cooperating at the regional and interregional levels;
- (e) By mainstreaming the Global Programme of Action into national development planning and budgetary mechanisms;
- (f) By supporting the United Nations Environment Programme Global Programme of Action Coordination Office in undertaking its task of facilitating, furthering and promoting the implementation of the Global Programme of Action;

3. To express appreciation for the efforts of the United Nations Environment Programme in helping to advance the agenda with respect to the sustainable development of oceans, coasts and islands and invite it to strengthen its support to the further implementation of the Global Programme of Action through increased contributions from its Environment Fund, enhanced cooperation and coordination with multilateral environmental agreements and improved cooperation with all stakeholders and relevant organizations, including multilateral development banks, at the global and regional levels;

National actions

4. To strengthen efforts to develop and implement our regional and national programmes of action and mechanisms for the protection of the marine environment from land-based pollution sources and activities, in concert with the relevant implementing legislation and financing, and to mainstream the objectives of the Global Programme of Action into development planning and implementation, including the United Nations country level programmes, the United Nations Development Assistance Framework, poverty reduction strategy papers, common country assessments and country assistance strategies, to reduce and manage the risks and impacts of coastal and marine pollution;

5. To commit to the continued currency and relevance of the Global Programme of Action as a fundamental framework for the protection of the coastal and marine environment and to commit ourselves to taking the Global Programme of Action's objectives and to mainstreaming them across our governments, and also to advancing them, as appropriate, in the relevant intergovernmental organizations and in the various multilateral environmental agreements to which we are Parties and in which we participate;

6. To promote the effective implementation of international and regional conventions, agreements and protocols to which we are Parties, relevant to the achievement of the goals of the Global Programme of Action;

7. To improve cooperation and coordination at all levels in order to deal with issues related to watersheds, coasts, seas and oceans in an integrated manner and to incorporate the integrated management and sustainable use of river basins, seas and oceans into relevant national policies and programmes, in particular by implementing integrated approaches to water resources management, to coastal zone management and coastal area management, to coastal area and river basin management, and to physical alteration and destruction of habitats;

8. To develop and implement national plans of action for the Global Programme of Action, in close coordination with the national integrated water resources management and water efficiency plans, as set forth in the Johannesburg Plan of Implementation;
9. To further the application of ecosystem approaches to watershed, coast, oceans and large marine ecosystem and island management, and to strengthen national, regional and global cooperation to help achieve increased application by 2010 of the ecosystem approach, as set forth in the Johannesburg Plan of Implementation;³²
10. To increase our efforts to integrate and mainstream economic valuation of the goods and services that oceans, coasts and watersheds provide into our accounting and decision-making, taking full account of all services that the environment provides, including their direct and indirect value to societies and ecosystems;
11. To devote additional effort, finance and support to address point and non-point source nutrients, including municipal, industrial and agricultural wastewater, as major and increasing source categories directly affecting human health, well-being and the environment, including marine ecosystems and their associated watersheds;
12. To develop and implement durable mechanisms to ensure the long-term financial sustainability and implementation of regional and national programmes of action and mechanisms for the protection of the marine environment from land-based pollution sources and activities;
13. To improve monitoring systems at all levels so as to enable governments, major groups and the public to contribute to building a common understanding and knowledge of the damage being done to the marine environment and the measures needed to protect it and for the follow-up of the implementation of the Global Programme of Action;
14. To actively promote the involvement and participation of local and regional authorities, communities and other relevant stakeholders in the development and implementation of programmes of action and strategies, in particular at the local level, for the implementation of the Global Programme of Action;

Regional actions

15. To strengthen the United Nations Environment Programme regional seas conventions and programmes, as well as other regional conventions, agreements and programmes for the protection of the marine and coastal environment, to serve as effective mechanisms to further the implementation of the Global Programme of Action and the protection and sustainable use of the marine environment, through means such as the development and implementation of protocols addressing land-based pollution sources and activities;
16. To work through the United Nations Environment Programme regional seas programmes and other regional and interregional bodies and processes to apply ecosystem approaches to watershed, coast, ocean and large marine ecosystem and island management, and to develop and strengthen strategic partnerships and improve interregional action, cooperation, scientific understanding, environmental education, exchange and sharing of knowledge, technology and experience;

³² Ibid.

International actions

17. To call upon United Nations agencies, United Nations inter-agency groups, such as UN-Oceans and UN-Water, the United Nations Development Group, the International Maritime Organization, and multilateral environmental agreements, in particular the Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat, the Convention on Biological Diversity and the Stockholm Convention on Persistent Organic Pollutants, to increase the integration of the Global Programme of Action into their policies, plans and programmes, consistent with their mandates;

18. To call upon international and regional financial institutions and donor countries to continue to support the implementation of the Global Programme of Action at the appropriate levels and to increase their contribution to ensuring its long-term sustainability through financial and technical support and by building the capacity of developing countries, particularly small island developing States, to develop and implement their national programmes of action;

19. To welcome the national, regional and international partnerships, discussed during the second session of the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action, aimed at mainstreaming the work and objectives of the Global Programme of Action into their respective workplans, activities, policies and programmes at the appropriate levels and to welcome the creation of new partnerships with all sectors of civil society and the strengthening of existing ones, as critical mechanisms for the successful implementation of the Global Programme of Action;

20. To support the continuity and the mainstreaming of the Global Programme of Action into the major fields of global development activity and promote it as a means to create the integrated processes, intellectual leadership and partnerships that are necessary to achieve global goals and strategies in linked watershed, coastal and ocean areas through ecosystem-based approaches;

21. To improve the implementation of the Global Programme of Action through cooperating with other international initiatives, in order to develop joint activities around the integrated management of watersheds;

22. To invite the States that have not done so, to consider becoming Parties to international and regional conventions, agreements and protocols, as appropriate, relevant to the achievement of the goals of the Global Programme of Action.

United Nations Environment Programme actions

23. To endorse the Global Programme of Action programme of work for the period 2007–2011, commend it to the United Nations Environment Programme Governing Council/Global Ministerial Environment Forum and encourage the Governing Council/Global Ministerial Environment Forum to devote greater financial resources to its implementation, particularly at the regional level;

24. To welcome the “Guidance to the Implementation of the Global Programme of Action for 2007–2011”³³ produced by the United Nations Environment Programme’s

³³ UNEP/GPA/IGR.2/3.

Global Programme of Action Coordination Office, as a tool aimed at supporting implementation of the Global Programme of Action in a manner consistent with emerging issues in the international environment and sustainable development context;

25. To request the United Nations Environment Programme Governing Council/Global Ministerial Environment Forum to endorse the present Declaration and the outcome of the second session of the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities as valuable contributions to the implementation of Agenda 21 and other internationally agreed development goals, including those contained in the Millennium Declaration and the Johannesburg Plan of Implementation;

26. To request the Executive Director of the United Nations Environment Programme to convene the third session of the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities in 2011, in collaboration with the relevant organizations and institutions, and to seek the support of the United Nations Environment Programme in organizing the meeting and implementing its outcome;

27. To express special gratitude and appreciation to the Government and people of the People's Republic of China for hosting the second session of the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.

Annex – 3: Manila Declaration on Furthering the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

We, the representatives of 65 Governments and the European Commission, with the valued support and concurrence of representatives of international financial institutions, international and regional organizations, the private sector, non-governmental organizations, other stakeholders and major groups,

Having met in Manila from 25 to 26 January 2012 at the third session of the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities,

Recognizing that all people depend on the oceans and coasts and their resources for their survival, health and well-being, that a substantial proportion of the world's population derives its food security and economic livelihood from the coastal environment and marine resources such as fisheries and shellfish from highly productive coastal and estuary zones,

Recognizing that marine and coastal ecosystems, in particular those of low-lying coastal areas and small island developing States, are vulnerable to rising sea levels, climate-related natural disasters and ocean acidification resulting from land-based activities,

Acknowledging the large increases of nutrients such as nitrogen and phosphorus entering the world's environment as a result of human activity and noting the severity of the environmental problems caused by nutrient excess, including eutrophication of coastal waters and oxygen depletion, and the associated damage to ecosystems, biodiversity and coastal water quality,

Noting the rapid growth of urban areas on coasts and the fact that the major threats to the health, productivity and biodiversity of the marine environment result from human activities on land,

Recognizing that sewage and wastewater, persistent organic pollutants, heavy metals, oils (hydrocarbons), nutrients, sediments and marine litter, whether carried by rivers or discharged directly into coastal areas, take a severe toll on human health and well-being and on coastal and marine ecosystems and food and services they provide,

Recognizing that marine litter is a problem, that is global in scale and underestimated in impact and that it directly threatens coastal and marine habitats and species, economic growth, human health and safety, and societal values and that a significant portion of marine litter originates from land-based activities; that movement of litter and debris, exacerbated by storm events, have significant impacts on the marine environment, as do ship-based activities,

Recognizing also that the marine environment is threatened through, in particular, loss of marine biodiversity and marine ecosystems by physical alterations of the coastal zone, poor land use planning and socioeconomic pressures including destruction of habitats of vital importance to maintaining ecosystem health, as well as ecosystem goods and services provided by ecosystems such as coral reefs, coastal tidal flats, deltas, mangroves, seagrass beds and estuaries,

Recognizing further the intrinsic value, and links between marine, coastal and

freshwater ecosystems and human well-being and the need for integrated watershed and coastal management in efforts to achieve the effective sustainable management of land-based activities, including the incorporation of the value of ecosystem services into planning processes,

Acknowledging that the Global Programme of Action is an effective tool for integrating environmental concerns into development planning and strategies at the international, regional and national levels and that, as such, it contributes substantially to the attainment of internationally agreed development goals, including the Millennium Development Goals,

Recognizing the lack of capacities in science and technology and the need for integration of research, education, and extension advisory services, in particular of developing countries, as tools to build capacity to sustain the ability to address land-based activities that affect the marine environment,

Recognizing the importance of the existing Regional Seas Conventions and Action Plans in tackling the accelerating degradation of the world's oceans and coastal areas, and in this regard engaging concerned countries in comprehensive and specific actions on land-based sources and activities, and through integrated coastal zone management, among other things,

Recognizing also the important contributions of the regional seas programmes, the Global Environment Facility and international financial institutions in implementing the Global Programme of Action,

Recognizing further the achievements in the implementation of the Global Programme of Action over the period 2007–2011 and, in particular, the contribution of the Global Programme of Action Coordination Office in the Freshwater and Marine Ecosystems Branch of the United Nations Environment Programme's Division of Environmental Policy Implementation,

Recognizing the importance of improved coastal water quality and the need for improved monitoring to identify threats to the marine environment at the regional, national and local levels, as encouraged by the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including socio-economic aspects, Recognizing that litter does not belong to the sea and therefore emphasizing the relevance of the Honolulu Commitment endorsed at the 5th International Marine Debris Conference, and the Honolulu Strategy,

Recognizing also the significant progress made by some countries in building both human and institutional capacity and developing legislative frameworks, environmental policies and market-based instruments in context of a proper regulatory framework that protects public interest for the sustainable management of fisheries, marine resources and the coastal environment,

Emphasizing also the need to support and enhance developing countries capacity to manage marine and coastal ecosystem sustainably in the context of the Bali Strategic Plan for Technology Support and Capacity Building,

Acknowledging the important contribution of multi-stakeholder partnerships, including the importance of public-private partnerships, and United Nations inter-agency partnerships in the implementation of the Global Programme of Action and in

the implementation of intergovernmental commitments to advance action on the Millennium Development Goals,

Stressing the importance of marine and coastal ecosystems and biodiversity to the mitigation of and adaptation to climate change, by identifying and addressing the underlying drivers of marine and coastal ecosystem loss and destruction, and improving the sustainable management of coastal and marine areas,

Recalling the 2009 Manado Declaration, UNEP Governing Council decision GC SS.XI/6 on Oceans and other global initiatives to tackle marine and coastal ecosystem loss and destruction and the need to achieve long term conservation, management and sustainable use of marine living resources and coastal habitats to, inter alia, increase climate resiliency, achieve global food security and reduce poverty,

Acknowledging the importance of the upcoming Conference on Sustainable Development to be held in Rio de Janeiro on 20 to 22 June 2012.

1. Stress the commitment to the implementation of the Global Programme of Action on the Protection of the Marine Environment from Land-based Activities at the international, regional and national levels as a flexible and effective tool for the sustainable development of oceans, coasts and islands, and for human health and well-being;

2. Resolve to commit to comprehensive, continuing and adaptive action within a framework of integrated coastal management relevant to respective national and regional priorities;

3. Dedicate ourselves to furthering the implementation of the Global Programme of Action with a focus on the identified priorities for the period 2012–2016 and invite additional efforts and adequate voluntary financial resources to expedite the implementation of the Global Programme of Action for 2012–2016;

4. Decide actively to engage ourselves and step up our efforts to develop guidance, strategies or policies on the sustainable use of nutrients so as to improve nutrient use efficiency with attendant economic benefits for all stakeholders, including farmers, and to mitigate negative environmental impacts through the development and implementation of national goals and plans over the period 2012-2016, as necessary;

5. Decide that the GPA Coordination Office in the period 2012-2016 should focus its work on nutrients, litter and wastewater as the three priority source categories for the GPA, using global multi-stakeholder partnerships; and request the Coordination Office to develop its activity plan on the basis of these strategic directions.

(a) Decide to support the further development of the Global Partnership on Nutrient Management and associated regional and national stakeholder partnerships, as well as their activities, including assessments as agreed by the partnership, and sharing of best practices using extension and advisory services for policy makers and farmers

(b) Further decide to work with all stakeholders concerned to find innovative solutions and initiatives to the marine litter problem, including by sharing best practices, technical information about capacity building, and legal, policy, community-based, economic and market-based means of preventing, reducing and managing marine litter, and recommend the establishment of a global partnership on marine litter;

(c) Decide to support the further development of the global partnership on wastewater and share among stakeholders information, lessons learned and best practices for wastewater management, including sound technologies that do not adversely affect the environment and biodiversity, and resource reduction, reuse and recycling approaches for the purposes of environmental protection, sanitation and human health, climate change and nutrient benefits so as to prompt coordinated action, and encourage new investments in wastewater management that meets these objectives

6. Also decide to consider using the GPA as a platform to promote delta management through delta and inter-delta cooperation schemes and to support a proposal to declare an international year of deltas in the near future;

7. Decide to improve cooperation and coordination at all levels to deal with issues related to oceans, coasts, islands and their associated watersheds, by applying integrated management such as “ridge to reef” approaches, including by involving stakeholders and developing innovative solutions to improve or resolve identified problems;

8. Welcome the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including socio-economic aspects, to strengthen the regular scientific assessment of the state of the marine environment in order to enhance the scientific basis for policy making at global, regional and national levels;

9. Decide to strengthen and promote the implementation of existing Regional Seas Conventions and Action Plans, and other relevant global and regional arrangements, agreements and programmes for the protection of the marine and coastal environment, with a view to further the implementation of the Global Programme of Action;

10. Invite United Nations agencies, funds and programmes, United Nations inter-agency groups, such as the coordination mechanism on ocean and coastal issues within the United Nations system (UN-Oceans) and the coordination mechanism on water resources (UN-Water), the United Nations Development Group and multilateral environmental agreements to strengthen the integration of the Global Programme of Action into their policies, plans and programmes, consistent with their mandates;

11. Also invite the Global Environment Facility, other global and regional financial institutions, development partners and donor countries, to make coordinated efforts to support countries, especially developing countries and countries with economy in transition, in the implementation of the Global Programme of Action through financial and technical support and capacity building;

12. Express appreciation for the efforts of the United Nations Environment Programme in supporting the Global Programme of Action Coordination Office and expediting the implementation of the Global Programme of Action, and welcome additional extrabudgetary resources to support UNEP’s work in this regard;

13. Request the Executive Director of the United Nations Environment Programme to forward the present political declaration to the United Nations Environment Programme Governing Council/Global Ministerial Environment Forum and the United Nations Conference on Sustainable Development as a contribution by the GPA IGR-3 to the deliberations on sustainable development;

14. Also request the Executive Director of the United Nations Environment Programme to convene the Fourth Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities in 2016 in collaboration with the relevant organizations and institutions, and to seek the support of the United Nations Environment Programme Governing Council/Global Ministerial Environment Forum in organizing the meeting;

15. Decide that governments provide technical and policy guidance to the GPA coordination office during the intersessional period of 2012-2016, as necessary;

16. Express our gratitude and appreciation to the Government and people of the Philippines for hosting the third session of the Intergovernmental Review Meeting on the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.

Manila on 26 January 2012.

Annex 4: United Nations General Assembly Resolutions regarding the Global Programme of Action [*emphasis added*]

The UN General Assembly in its Resolution 69/245 (December 2014) on Oceans and the law of the sea: expressed deep concern regarding the adverse economic, social and environmental impacts of the physical alteration and destruction of marine habitats that may result from land-based and coastal development activities, that are carried out in a manner that has a detrimental impact on the marine environment. The General Assembly in this resolution *“recognizes that most of the pollution load of the oceans emanates from land-based activities and affects the most productive areas of the marine environment, and calls upon States, as a matter of priority, to implement the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and to take all appropriate measures to fulfill the commitments of the international community embodied in the Manila Declaration on Furthering the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities”* (Para 190).

The Resolution 69/245 (*Op. cit*) “also notes with concern that the health of the oceans and marine biodiversity are negatively affected by marine debris, especially plastic, from land-based and marine sources, and thus recognizes the need for better understanding of the sources, amounts, pathways, distribution trends, nature and impacts of marine debris, and in this regard invites States to implement resolution 1/6 on marine plastics debris and microplastics, adopted by the United Nations Environment Assembly of the United Nations Environment Programme at its first session in June 2014” (and) “welcomes the activities of relevant United Nations bodies and organizations in particular the United Nations Environment Programme, the Food and Agriculture Organization of the United Nations and the International Maritime Organization and other intergovernmental organizations, to address the sources and impacts of marine debris, including through the Global Partnership on Marine Litter....”. The General Assembly in the same Resolution “encourages States to further develop partnerships with industry and civil society to raise awareness of the extent of the impact of marine debris on the health and productivity of the marine environment and consequent economic loss; (and) urges States to integrate the issue of marine debris into national and, as appropriate, regional strategies dealing with waste management, especially in the coastal zone, ports and maritime industries, including recycling, reuse, reduction and disposal, to consider developing an integrated waste management infrastructure and to encourage the development of appropriate economic incentives with the aim of reducing marine debris to address this issue, including the development of cost recovery systems that provide an incentive to use port reception facilities and discourage ships from discharging marine debris at sea, and support for measures to prevent, reduce and control pollution from any source, including land-based sources, such as community-based coastal and waterway cleanup and monitoring activities, and encourages States to cooperate regionally and subregionally to identify potential sources and coastal and oceanic locations where marine debris aggregates and to develop and implement joint prevention and recovery programmes for marine debris as well as to raise awareness of the issue of marine debris and the need to consider environmentally sound options for its removal” (Para 181-184).

The Resolution 69/245 further “expresses its concern regarding the spreading of hypoxic dead zones and harmful algal blooms in oceans as a result of eutrophication fuelled by riverine runoff of fertilizers, sewage outfall and reactive nitrogen resulting from the burning of fossil fuels and resulting in serious consequences for ecosystem functioning, and calls upon States to enhance their efforts to reduce eutrophication,

particularly by reducing total nutrient pollution from land-based sources and, to this effect, to continue to cooperate within the framework of relevant international organizations, in particular the Global Programme of Action (Para 191).

General Assembly Resolution on Oceans and the Law of the Sea (2008) A/RES/63/111. *Emphasizes once again the importance of the implementation of Part XII of the Convention in order to protect and preserve the marine environment and its living marine resources against pollution and physical degradation, and calls upon all States to cooperate and take measures consistent with the Convention, directly or through competent international organizations, for the protection and preservation of the marine environment;*

Recognizes that most of the pollution load of the oceans emanates from land-based activities and affects the most productive areas of the marine environment, and calls upon States as a matter of priority to implement the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and to take all appropriate measures to fulfil the commitments of the international community embodied in the Beijing Declaration on furthering the implementation of the Global Programme of Action;

Expresses its concern regarding the spreading of hypoxic dead zones in oceans as a result of eutrophication fuelled by riverine run-off of fertilizers, sewage outfall and reactive nitrogen resulting from the burning of fossil fuels and resulting in serious consequences for ecosystem functioning, and calls upon States to enhance their efforts to reduce eutrophication and, to this effect, to continue to cooperate within the framework of relevant international organizations, in particular the Global Programme of Action;

Welcomes the continued work of States, the United Nations Environment Programme and regional organizations in the implementation of the Global Programme of Action, and encourages increased emphasis on the link between freshwater, the coastal zone and marine resources in the implementation of international development goals, including those contained in the United Nations Millennium Declaration, and of the time-bound targets in the Plan of Implementation of the World Summit on Sustainable Development ("Johannesburg Plan of Implementation"), in particular the target on sanitation, and the Monterrey Consensus of the International Conference on Financing for Development;

General Assembly Resolution on Oceans and the Law of the Sea (2007) A/RES/62/215. *Calls upon States to implement the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and to take all appropriate measures to fulfil the commitments of the international community embodied in the Beijing Declaration on Furthering the Implementation of the Global Programme of Action;*

Welcomes the continued work of States, the United Nations Environment Programme and regional organizations in the implementation of the Global Programme of Action, and encourages increased emphasis on the link between freshwater, the coastal zone and marine resources in the implementation of international development goals, including those contained in the United Nations Millennium Declaration, and of the time-bound targets in the Plan of Implementation of the World Summit on Sustainable Development ("Johannesburg Plan of Implementation"),⁵² in particular the target on sanitation, and the Monterrey Consensus of the International Conference on Financing for Development;

General Assembly Resolution on Oceans and the Law of the Sea (2006) A/RES/61/222. *Welcomes* the outcomes of the Second Intergovernmental Review Meeting of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, convened in Beijing from 16 to 20 October 2006, and *calls upon States to take all appropriate measures to fulfil the commitments of the international community embodied in the Beijing Declaration on Furthering the Implementation of the Global Programme of Action;*

Also welcomes the continued work of States, the United Nations Environment Programme and regional organizations in the implementation of the Global Programme of Action, and *encourages increased emphasis on the link between freshwater, the coastal zone and marine resources in the implementation of international development goals,* including those contained in the United Nations Millennium Declaration⁸ and of the time-bound targets in the Plan of Implementation of the World Summit on Sustainable Development (“Johannesburg Plan of Implementation”), in particular the target on sanitation, and the Monterrey Consensus of the International Conference on Financing for Development;

General Assembly Resolution on Oceans and the Law of the Sea (2005) A/RES/60/30. *Calls upon States to take all appropriate measures to control, reduce and minimize, to the fullest extent possible, marine pollution from land-based sources as part of their national sustainable development strategies and programmes, in an integrated and inclusive manner, and to advance the implementation of the Global Programme of Action* for the Protection of the Marine Environment from Land-based Activities and the Montreal Declaration on the Protection of the Marine Environment from Land-based Activities;

Welcomes the convening in Beijing of the Second Intergovernmental Review Meeting of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, from 16 to 20 October 2006, as an opportunity to discuss marine debris in relation to the source categories of the Global Programme of Action, and urges broad high-level participation;

Also welcomes the continued work of States, the United Nations Environment Programme and regional organizations in the implementation of the Global Programme of Action, and *encourages increased emphasis on the link between freshwater, the coastal zone and marine resources in the implementation of international development goals,* including those contained in the United Nations Millennium Declaration and of the time-bound targets in the Plan of Implementation of the World Summit on Sustainable Development (“Johannesburg Plan of Implementation”), in particular the target on sanitation, and the Monterrey Consensus of the International Conference on Financing for Development;

General Assembly Resolution on Oceans and the Law of the Sea (2004) A/RES/59/24. *Calls upon States to continue to prioritize action on marine pollution from land-based sources as part of their national sustainable development strategies and programmes, in an integrated and inclusive manner, and to advance the implementation of the Global Programme of Action* for the Protection of the Marine Environment from Land-based Activities³³ and the Montreal Declaration on the Protection of the Marine Environment from Land-based Activities;

Also welcomes the continued work of States, the United Nations Environment Programme and regional organizations in the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, and

encourages increased emphasis on the link between freshwater, the coastal zone and marine resources in the implementation of international development goals, including those contained in the United Nations Millennium Declaration 35 and of the time-bound targets in the Plan of Implementation of the World Summit on Sustainable Development (“Johannesburg Plan of Implementation”),³⁶ in particular the target on sanitation, and the Monterrey Consensus of the International Conference on Financing for Development;

General Assembly Resolution on Oceans and the Law of the Sea (2003) A/RES/58/240. *Calls upon States to continue to prioritize action on marine pollution from land-based sources as part of their national sustainable development strategies and programmes, in an integrated and inclusive manner, as a means of implementing the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities;*

Welcomes the continued work of States, the United Nations Environment Programme and regional organizations in the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, and encourages increased emphasis on the link between freshwater, the coastal zone and marine resources in the implementation of the Millennium Development Goals, taking into account the time-bound targets in the Plan of Implementation of the World Summit on Sustainable Development (“Johannesburg Plan of Implementation”), in particular the target on sanitation, and the Monterrey Consensus of the International Conference on Financing for Development;

Calls upon States to advance the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and the Montreal Declaration on the Protection of the Marine Environment from Land-based Activities, to enhance maritime safety and the protection of the marine environment from pollution and other physical impacts, and to improve the scientific understanding and assessment of marine and coastal ecosystems as a fundamental basis for sound decision-making through the actions identified in the Johannesburg Plan of Implementation;

General Assembly Resolution on Oceans and the Law of the Sea (2002) A/RES/57/141. *Calls upon States to continue to prioritize action on marine pollution from land-based sources as part of their national sustainable development strategies and programmes, in an integrated and inclusive manner, as a means of implementing the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities;*

Also calls upon States to advance the implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities and the Montreal Declaration on the Protection of the Marine Environment from Land-based Activities, to enhance maritime safety and the protection of the marine environment from pollution and other physical impacts, and to improve the scientific understanding and assessment of marine and coastal ecosystems as a fundamental basis for sound decision-making through the actions identified in the Johannesburg Plan of Implementation;

Invites States to cooperate at the regional level to develop regionally shared goals and timetables in pursuance of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, including through regional seas conventions;

General Assembly Resolution on Oceans and the Law of the Sea (2001) A/RES/56/12. *Expressing its deep concern once again at the degradation of the marine environment, particularly from land-based activities, and emphasizing the need for international cooperation and for a coordinated approach at the national and regional levels to this problem, bringing together the many different economic sectors involved and protecting the ecosystems, and in this context reaffirming the importance of ensuring the full implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities,*

Calls upon States to continue to prioritize action on marine pollution from land-based sources as part of their national sustainable development strategies and programmes, in an integrated and inclusive manner, as a means of implementing the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, and takes note of the review by the intergovernmental meeting in Montreal, Canada, from 26 to 30 November 2001;

Calls upon United Nations agencies and programmes identified in General Assembly resolution 51/189 of 16 December 1996 to continue to fulfil their roles in support of the Global Programme of Action, as well as to consult with Governments, representatives of the private sector, financial institutions and bilateral and multilateral donor agencies to review their involvement in the implementation of the Global Programme of Action and to consider, inter alia, what international support is needed to help overcome the obstacles to the preparation and implementation of national and local action programmes and how they can participate actively in partnership-building with developing countries for the transfer of the requisite technology in accordance with the Convention, and taking into account the relevant parts of Agenda 21, capacity-building and funding for the implementation of the Global Programme of Action;

General Assembly Resolution on Oceans and the Law of the Sea (2000) A/RES/55/7. *Expressing its deep concern at the degradation of the marine environment, particularly from land-based activities, and emphasizing the need for international cooperation and for a coordinated approach at the national level to this problem, bringing together the many different economic sectors involved and protecting the ecosystems, and in this context reaffirming the importance of ensuring full implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities,*

Calls upon States to prioritize action on marine pollution from land-based sources as part of their national sustainable development strategies and local Agenda 21 programmes, in an integrated and inclusive manner, as a means of enhancing their support for the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, and calls for their active collaboration to ensure that the 2001 intergovernmental review will enhance the implementation of the Global Programme of Action;

Calls upon United Nations agencies and programmes identified in General Assembly resolution 51/189 of 16 December 1996 to fulfil their roles in support of the Global Programme of Action and to provide information to Governments for their consideration at the 2001 intergovernmental review of the Global Programme of Action and to the Secretary-General for his annual report on oceans and the law of the sea on their action in this regard and on other steps which could be taken to protect the marine environment;

Invites the United Nations Environment Programme and the World Bank, as part of the preparations for the 2001 review of the Global Programme of Action, to consult with Governments, representatives of the private sector, financial institutions and bilateral and multilateral donor agencies to review their involvement in the implementation of the Global Programme of Action and to consider, inter alia, what international support is needed to help overcome the obstacles to the preparation and implementation of national and local action programmes and how they can participate actively in partnership-building with developing countries for the transfer of the requisite technology in accordance with the Convention and taking into account the relevant parts of Agenda 21, capacity-building and funding for the implementation of the Global Programme of Action;

Annex 5: List of (Selected) Publications

GPA Coordination Office over the years responded to the requests of Governments and other stakeholders to provide technical information related to the implementation of the Global Programme of Action. To this effect GPA Coordination Office produced a large number of reports to raise awareness amongst policymakers, policy advocates and key actors at local, regional and global level. These studies and other related information have been widely distributed by the GPA Coordination Office through printed and digital media (<http://www.unep.org/gpa>). A selected list of publications are noted below.

2017

1. Harnessing Opportunity. Wastewater as a managed resource. March

2016

2. Marine Litter Legislation: a toolkit for policymakers. September
3. Sanitation, Wastewater Management and Sustainability, August
4. Marine Litter Vital Graphics. June
5. Marine Plastic Debris and Microplastics: global lessons and research to inspire action and guide policy change. May

2015

6. Good Practices for Regulating Wastewater Treatment: legislation, policies and standards. August
7. Nitrogen Use Efficiency and Nutrient Performance Indicators. A GPNM Position Paper. January
8. Plastics in Cosmetics. Are we polluting the environment through our personal Care? Plastic ingredients that contribute to marine micro-plastic litter
9. Biodegradable Plastics and Marine Litter - Misconceptions, concerns and impacts on marine environments
10. Abandoned, lost or otherwise discarded gillnets and trammel nets - Methods to estimate ghost fishing mortality, and the status of regional monitoring and management
11. Review of the Current State of Knowledge Regarding Marine Litter in Wastes Dumped at Sea Under the London Convention and Protocol
12. Vital Graphics Marine Litter
13. Marine Litter Legislation – A Toolkit for Policymakers
14. Wastewater technology matrix
15. Sources, Fate and Effects of Microplastics in the Marine Environment: a global assessment

2014

16. Valuing Plastic (Full report). June
17. Valuing Plastic - Factsheet (in 6 un languages) June

2013

18. Our Nutrient World - the challenge to produce more food and energy with less pollution (with INI)
19. Ensuring Food Security and a Better Environment through Improved Nitrogen Management: the Chinese Situation (Prof. David Norse, UCL, UK)
20. Fertilizer Deep Placement (FDP) Technology Adoption in Bangladesh (with IFDC)
21. Anthropogenic N input and Biodiversity (With ING- India)
22. On-line Fertilizer Recommendation in India: Approaches, Potentials and Limitations (With ING India)
23. Hindcasts and future projections of global inland and coastal nitrogen and

- phosphorus loads due to finfish aquaculture. Reviews in Fisheries Science (Bouwman, Lex et al). A product of GNC project.
24. Global trends and uncertainties in terrestrial denitrification and N₂O emissions. Philosophical Transactions (Bouwman, Lex et al). A product of GNC project

2012

25. Sustainable Nutrient Management: Key Messages for Rio+20 Conference
26. The challenge to produce more food and energy with less pollution: Towards a Global Nitrogen Assessment. A CBD Side Event (in Cooperation with ING - India)
27. Report of a Dialogue session titled "Nutrient for Food or Pollution? Organized by Global Partnership on Nutrient Management (GPNM) During the Global Soil Forum Meeting in Berlin
28. The Honolulu Strategy. December

2011

29. Addressing the Nutrient Challenge: Where we are, what we need to know and what we need to do?
30. The role of the Global Environment Facility's International Waters focal area in: Helping build the necessary institutional and management capacity for country led efforts to implement the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)

2010

31. Sick water? The central role of wastewater management in sustainable development. A rapid response assessment (with UN-Habitat)
32. Building the foundations for sustainable nutrient management

2007

33. Making Mainstreaming Work: An Analytical Framework, Guidelines and Checklists for the Mainstreaming of Marine and Coastal Issues into National Planning and Budgetary Processes (with SEI).

2006

34. The State of the Marine Environment: Trends and Processes
35. The State of the Marine Environment: Regional Assessments
36. Implementation of the Global Programme of Action at regional level: The role of regional seas conventions and their protocols
37. Protecting coastal and marine environments from land-based activities: A guide for national action
38. Ecosystem-based Management: Markers for assessing progress
39. Financing the implementation of regional seas conventions and action plans: A guide for national action
40. Global Programme of Action implementation in the Regional Seas Programmes
41. Shaken, not Stirred! Institutional and Policy Cocktails for Protecting Coastal and Marine Environments from Land-based Sources of Pollution, Ocean and Coastal Management, 2006. Vol. 49. No: 9-10.

2005

42. Sustainable Development and Management of Ports and Harbours: Issues and Perspectives, Port Technology International, 12th Edition, Spring.
43. Managing the Coastal Zone: What Lessons to Draw from the Tsunami? Tropical Coasts, vol 12, no. 1.

2004

44. Review of National Legislations and Institutions Relevant to Tourism, Ports, Land Reclamation and Damming of Rivers in selected countries along the Western Indian Ocean". January.
45. UNEP/WHO/UN-Habitat/WSSCC Guidelines on Municipal Wastewater Management. A practical guide for decision makers and professionals on how to plan, design and finance appropriate and environmentally sound municipal wastewater discharge systems.
46. Water Supply and Sanitation Coverage in UNEP Regional Seas. Need for Regional Wastewater Emission Targets? Section III: An Inventory of Regional Specific Data and the Feasibility of Developing Regional Wastewater Emission Targets.
47. Financing wastewater collection and treatment in relation to the Millennium Development Goals and World Summit on Sustainable Development targets on water and sanitation. Background paper presented at the eighth special session of the Governing Council/Global Ministerial Environment Forum, held in Jeju, South Korea
48. Development of Sustainable Shrimp Production: Issues and Policy Options. A Briefing Note.
49. Report of the Regional Consultative Meeting on the GPA Programme of Work in the Wider Caribbean, Colon, Panama, February.
50. Review of National Legislations and Institutions Relevant to Tourism, Ports, Land Reclamation and Damming of Rivers in selected countries along the Western Indian Ocean". January.

2003

51. Water Supply and Sanitation Coverage in UNEP Regional Seas. Need for Regional wastewater Emission Targets? Section II: Targets and Indicators for Domestic Sanitation and Wastewater Treatment – Discussion Paper
52. A Comparative Review of Coastal Legislation in South Asia. May
53. Diagnosis of the Erosion Processes in the Caribbean Sandy Beaches. March
54. Análisis Comparado de la Legislación y Políticas Legales Aplicables al Manejo, Conservación, Uso y Aprovechamiento de la Zona Costera en la Región del Gran Caribe. Estudio de Caso: República de Cuba, República Bolivariana de Venezuela y Estados Unidos Mexicanos. May.
55. Review of national legislation related to coastal and marine resources management and the adequacy/inadequacy of the institutional arrangements under which this takes place. June
56. Study on Better Practices for Shrimp Farming in Chilaw and Puttlam districts of Sri Lanka." June.
57. Preliminary Assessment of the Tourism Sector in the Context of Physical Alterations and Destruction of Habitats (PADH) in the Wider Caribbean Region. July.
58. Minimizing the Impact of Physical Alteration and Destruction of Habitat on the Coast and Near Shore Environment from Port and Harbour Activities; A Global Programme of Action Approach, Ports and Harbour, vol 48, no 7, September.
59. Keeping Pollution in Check, World Port Development, International Journal of PortManagement, June.
60. Mangroves of East Africa (in association with UNEP World Conservation Monitoring Centre)
61. Report of the South Asia Regional Consultation Workshop for the Protection of the Marine Environment from Land-based Activities, Colombo, Sri Lanka. April
62. Second regional meeting report on Municipal Wastewater Management in Eastern Africa, UNEP Global Programme of Action Coordination Office, Regional Office for Africa and WIOMSA, Mombasa, Kenya, March.

63. Diagnosis of the Erosion Processes in the Caribbean Sandy Beaches. March
64. Diagnóstico de los Procesos de Erosión en Las Playas Arenosas del Caribe. March
65. Report of the South Asia Regional Consultation Workshop for the Protection of the Marine Environment from Land-based Activities. Colombo, Sri Lanka. April.
66. Review of National Legislations related to Coastal Zone Management in the Spanish Speaking Latin America (Proyecto: Análisis Comparado de la Legislación y Políticas Legales Aplicables al Manejo, Conservación, Uso y Aprovechamiento de la Zona Costera en la Región del Gran Caribe. Estudio de Caso: República de Cuba, República Bolivariana de Venezuela y Estados Unidos Mexicanos) May.
67. Second regional meeting report on Municipal Wastewater Management in Latin America and the Caribbean, UNEP Global Programme of Action Coordination Office, UNEP Regional Office for Latin America and the Caribbean and UNEP Caribbean Regional Unit, Mexico City, Mexico, June.
68. A framework for Protection of the Marine Environment from Pollution due to Land-based Activities in South Asia. August.
69. The Economic Valuation of Alternative Uses of Mangrove Forests in Sri Lanka. March.
70. Utility and Effectives of User's Fee in Management of Marine Protected Areas in Latin America. March.
71. Utility of User Fees as Financial Instruments fur the Management of Marine Parks and Marine Protected Areas in the Wider Caribbean Region. May.
72. Regional meeting for planning and implementation of WIO-LaB (Addressing Land-based Activities in the West-Indian Ocean) project, Maputo, Mozambique December.

2002

73. Water Supply and Sanitation Coverage in UNEP Regional Seas. Need for Regional wastewater Emission Targets? Section 1: Regional presentation of data.

2001

74. A Sea of Trouble. IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), Report no 70, 2001.
75. Protecting the Oceans from Land-based Activities. Land-based sources and activities affecting the quality and uses of the marine, coastal and associated freshwater environment. GESAMP), Report no 71, 2001.
76. Regional meeting report on Municipal Wastewater Management in Eastern Asia and North-West Pacific, UNEP Global Programme of Action Coordination Office and Regional Office for Africa, Toyama, Japan, September 2001
77. Toyama Background Paper No.1: Regional Guidelines and Standards for Control and Treatment of Sewage
78. Toyama Background Paper No.2: Innovative Solutions for Control and Treatment of Sewage
79. Toyama Background Paper No.3: Building Partnership in Controlling Sewage
80. Regional meeting report on Municipal Wastewater Management in South Pacific, UNEP Global Programme of Action Coordination Office and South Pacific Regional Environment Programme (SPREP) and South Pacific Applied Geoscience Commission (SOPAC), Majuro, Marshall Islands, October
81. Regional meeting report on Municipal Wastewater Management in West Asia, UNEP Global Programme of Action Coordination Office and Regional Office for West Africa, Manama, Bahrain, November.
82. Overview of the Socio-Economic Aspects Related to the Management of Municipal Wastewater in West Asia (Including all countries bordering the Red

- Sea and Gulf of Aden). November.
83. Regional Meeting report on Municipal Wastewater Management in the Wider Caribbean, UNEP Global Programme of Action Coordination Office and Caribbean Regional Unit, Ocho Rios, Jamaica, February.
 84. Regional Meeting report on Municipal Wastewater Management in Latin America and the Caribbean, UNEP Global Programme of Action Coordination Office, UNEP Regional Office for Latin America and the Caribbean and UNEP Caribbean Regional Unit, Mexico City, Mexico, September.
 85. Regional Meeting report on Municipal Wastewater Management in Eastern Africa, UNEP Global Programme of Action Coordination Office, Regional Office for Africa, National Environment Management Council of Tanzania and the Western Indian Ocean Marine Science Association (WIOMSA), Dar es Salaam, United Republic of Tanzania, June.
 86. Socio-economic Aspects of the Wastewater Problem in the South East Pacific (CPPS), October.