



**Report of Second Global Land-Ocean Connections  
Conference (GLOC-2),**

**October 2-4, 2013, Montego Bay, Jamaica**

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### **Executive Summary**

UNEP and the GPA, in collaboration with the Government of Jamaica, successfully organized the Second Global Land-Ocean Connections Conference (GLOC-2) during the period October 2-4, 2013 in Montego Bay, Jamaica. It gathered scientists, experts, policy makers and NGOs from around the world. Over the three days, the conference had very lively, entertaining, and sound technical presentations. Out of these presentations, and the discussion they generated, a number of recommendations were made towards the implementation of the Manila Declaration on Furthering the Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA). Approximately 230 participants from 55 countries were able to explore current and emerging environmental management challenges that result from land-based activities, with a priority focus on the management of marine litter, wastewater and nutrients, as well as identify possible solutions and opportunities for improved management of these issues at global, regional and national levels.

A High-Level Plenary on Day 1 set the tone for the event, and the Day 2 parallel sessions on wastewater, nutrients, coral reefs and marine litter allowed participants to drill down deeper into the issues, discuss, debate, argue, and even reach consensus on the way forward. The conference concluded on Day 3 with a series of recommendations for future work.

An added bonus of this conference was a media workshop, press conference, additional live press coverage, and an associated field trip. Side Events during the lunch breaks and on evenings presented and discussed related topics as well. The conference also included 5-minute Speed Presentations at the end of Day 2, which allowed for exposure of young scientists, project managers, and NGOs and added more value to the event.

Main discussion points on wastewater (WW) included the need for data, impacts of climate change, the risks and rewards of wastewater reuse and the need to view wastewater as a resource. Participants discussed the trends related to urbanization and how it created new challenges and identified gaps which need to be addressed, such as the MDG targets, political will, funding, capacity building, cost-effective solutions, and greater collaboration. Suggestions for inclusion in the Global Wastewater Initiative (GWI) Work Plan included agricultural generation and reuse of WW, public awareness, technology sharing, resource recovery and energy production, coordination of activities, and facilitated learning from others. These recommendations fed into the first steering committee of the GWI, which decided to invite UNEP and UN-Habitat to serve as the first Co-Chairs of the Steering Committee.

Main discussion points on marine litter (ML) included the definition of the work plan for the Global Partnership on Marine Litter (GPML), plastics management, indicators, biodegradability of plastics, the role of the private sector, Extended Producer Responsibility (EPR), behaviour change, impacts on marine animals, waste-to-energy, regional and national ML partnerships, and the roles of governments in addressing ML. The conference recommended that the GPML Work Plan focus on pilot projects; Abandoned, Lost and Discarded Fishing Gear (ALDFG); awareness-raising (e.g. waste

as a resource; waste-to-energy); monitoring; target-setting; recovery of ML from sea; and knowledge-sharing.

Main discussion points on nutrients considered losses, particularly of reactive nitrogen and phosphorus, from the agricultural and sewerage systems, as the main causes for eutrophication of aquatic and marine ecosystems around the world, affecting water quality for human use and also aquatic and marine biodiversity. The conference noted the high correlation between increased hypoxic zones and the amounts of nitrogen being released. Public awareness of impacts of nitrogen on ecosystems is a problem. The increase in livestock farms and the related fertilizer use are rapidly becoming a severe source of nitrogen. Solutions to nutrient loading proposed included promoting Fertilizer Best Management Practices (such as soil fertility and soil conservation) and improving nutrient use efficiency in agriculture. A number of research topics and economic assessments were proposed, as well as indicator development, awareness-raising and education, for inclusion in the future work of the Global Partnership on Nutrients Management (GPNM).

Main discussion points on coral reefs and related tropical coastal ecosystems included their continued global decline due to multiple interacting anthropogenic threats. The need to anticipate and plan for projected climate and ocean acidity change in management of coral reefs and related ecosystems was recognized. It was noted that integrated and ecosystem based approaches are required to address direct stresses, including reduced water quality and other impacts arising from nutrient and wastewater pollution. Furthering application of ecosystem service assessment and valuation to support policy decisions and management planning in coral reef areas was recognized as a priority. It was also noted that policy guidance drawing on enhanced state of environment reporting and management performance reporting is required at multiple levels to improve management outcomes. The need for a global partnership mechanism to support communication, collaboration and exchange of relevant experiences, tools and approaches between regions was reaffirmed by Regional Seas Programmes, UNEP, UNEP-WCMC and UNEP GRID-Arendal.

## **Report of Second Global Land-Ocean Connections Conference (GLOC-2), October 2-4, 2013, Montego Bay, Jamaica**

The Second Global Conference on Land-Ocean Connections (GLOC-2) was a three-day gathering of scientists, experts, government and private sector representatives, policy makers and NGOs, held in Montego Bay, Jamaica, from Wednesday 2<sup>nd</sup> to Friday 4<sup>th</sup> October 2013, with the overall objective to identify approaches to address current and emerging issues in the marine and coastal sector with a focus on the three priority source categories of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities for 2012-2016, namely marine litter, nutrients and wastewater. The overall purpose of Conference was to emphasize the interconnectedness of activities on land and how they impact on the oceans, with a focus on pollution prevention, reduction and control, while proposing ways to address these impacts through international and, as appropriate, regional cooperation.

The outputs of the conference have provided sound science-based and objective recommendations for the GPA and inform the future work plans of the three global partnerships – nutrients, wastewater, and marine litter – being managed by the GPA. The Global Partnership on Marine Litter (GPML) convened its first official Steering committee meeting, while the Global Wastewater Initiative (GWI) convened its first formal meeting of partners.

The GLOC-2 was structured around the priority themes for the GPA: nutrients, wastewater, and marine litter, with the intention to formalize the GPML and GWI structures. The GLOC-2 was attended by over 230 participants from more than 55 countries with over 20 governments, 90 IGOS/NGOs and industry representatives and 90 delegates from the host country, Jamaica (see Annex 1).

Over the course of the three-day conference, 3 break out groups/parallel sessions and 4 Side Events were held (see the Conference Agenda as Annex 2). Speed Presentations were also made on various topics on the evening of the second day (see a list of topics presented as Annex 3). Specialist presentations by science, industry and policy representatives were made. These presentations<sup>1</sup> stimulated active discussions that were focused on identifying issues, including emerging issues, that participants felt the GPA and the global partnerships should address in the period 2013-2016 and beyond. Recommendations have been compiled and will be discussed further in developing action plans. These recommendations are summarized below and presented in relevant Annexes to the report.

The conference also featured a media workshop, which exposed members of the media from Jamaica, other Caribbean countries and Latin America to the issues related to land-ocean connections. Members of the media participated in some sessions, held interviews with experts present at the GLOC-2 and attended field trips to sites around the north of Jamaica. A summary of the Workshop is included as Annex 4.

### **Agenda Item 1: Opening Ceremony**

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<sup>1</sup> Presentations can be found on the GPA website at <http://www.gpa.unep.org/index.php/gloc-2>

The GLOC-2 began with an Opening Ceremony on Wednesday, Oct 2, chaired by Dr. Jacqueline Alder, Coordinator of the Freshwater & Marine Ecosystems Branch, UNEP. Participants were welcomed to the conference by the Mayor of Montego Bay, His Worship, Glendon Harris; Mrs. Elizabeth Mrema, Acting Director, Division of Environmental Policy Implementation, UNEP; and the Minister of Water, Land, Environment & Climate Change for Jamaica, the Honourable Robert Pickersgill. The Head Table also included the Honourable Ian Hayles, Minister of State in the Ministry of Water, Land, Environment & Climate Change for Jamaica.

In welcoming participants to Montego Bay, Mayor Harris mentioned that 70% of the population of Jamaica resides in coastal areas, and as much as 90% of the GDP of the country depends on coastal and marine environments. He emphasized the need to maintain aesthetically pleasing and sustainable coastal ecosystems, the success of on-going cleanup campaigns implemented in collaboration between the City Council and the National Solid Waste Department, as well as the contributions of wetlands management to enhancing the health of the Montego Bay Marine Park. He concluded by congratulating the organizers of GLOC-2 and wished participants a productive and enjoyable conference.

Mrs. Mrema, in her opening statement, expressed appreciation to those involved in organizing and funding the GLOC-2, and particularly to the government of Jamaica, for hosting the event (see Annex 5). She noted that coastal ecosystems produce at least 38% of the world's GDP, and that continued development of coastal economies must ensure reduction and mitigation of negative impacts on the environment to achieve sustainable development. She highlighted the history of the GLOC and its focus on directing future work of the GPA. She also reminded of the importance of the oceans and the challenges faced by coastal and marine ecosystems. Bringing it into the context of the Caribbean, she highlighted the particular dependence of SIDS on the coastal zone and marine resources. She further highlighted the challenge faced in Jamaica, balancing economic development and environmental management. Mrs. Mrema, while recognizing the progress being made in managing land-based sources of marine pollution, challenged the conference to build on successes and do more, particularly through partnership approaches. She also thanked the USA, Norway and The Netherlands, among others, for recognizing the importance of land-ocean connections and providing support for organization of the conference.

Minister Pickersgill, in his feature address (see Annex 6), noted that the strong and complex link between land and sea is increasingly recognized, but that this requires wide expertise and collaboration between actors, making the 'partnership' theme of the conference very appropriate. He also highlighted the relevance to the 2014 SIDS conference in Samoa, being organized under the theme of 'sustainable development of SIDS through genuine and durable partnerships'. Recognizing the need to strengthen regional instruments addressing land based sources of pollution, he also confirmed Jamaica's intention to accede to the LBS protocol of the Cartagena convention, and commitment to implementing Ridge to Reef approaches.

Mrs. Mrema nominated Jamaica as chair of the conference, noting that the meeting is enjoying both the hospitality as well as considerable support from Jamaica. The nomination was approved by acclamation, after which Minister Pickersgill assumed the Chairmanship of the conference, on behalf of the host government. During his absences, other representatives of the government of Jamaica deputized for him.

## **Agenda Item 2: Organization of the Conference**

Dr. Jacqueline Alder, Coordinator of the Freshwater & Marine Ecosystems Branch, UNEP, introduced the objectives of the conference, which included to identify approaches to address current and emerging issues in the marine and coastal sector with a focus on the three priority source categories of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities for 2012-2016, namely marine litter, nutrients and wastewater, as well as development of a new partnership on coral reefs. She outlined how the conference would be structured, including a combination of plenary sessions, parallel sessions, Side Events, posters and Speed Presentations.

## **Agenda Item 3: Manila Declaration**

In order to set the stage for the conference, the GPA Coordinator, Vincent Sweeney presented a report on progress since January 2012 on the implementation of the Manila Declaration by the GPA (see Annex 7). He provided a description of the Declaration and the issues prioritized, and the guidance provided on further implementation of the GPA through multi stakeholder partnerships addressing three priority source categories: nutrients, sewage and marine litter. In this regard, the progress with development of these partnerships, work conducted, and future plans was presented. He also pointed out that the Manila Declaration called for technical and policy guidance during the intersessional periods of the GPA IGR, and that GLOC-2 provides such a mechanism.

## **Agenda Item 4: Regional Seas Conventions and Action Plans – a platform for implementation of the GPA**

Focus then shifted to the Regional Seas Conventions and Action Plans (RSCAPs), as a platform for implementation of the GPA. During this session, the conference looked at the impact that the RSCAPs have had to date, and what role they can play with regard to the global partnerships under the GPA.

The chair introduced the speakers in the session, Mr. Jorge E. Illueca, former Assistant Executive Director of UNEP and Director of UNEP's Division of Environmental Conventions; and Dr. Tim Carruthers, Coastal and Marine Adviser, Secretariat of the Pacific Regional Environment Programme.

Mr. Illueca recalled the birth and early history of the UNEP Regional Seas Programme (RSP), acknowledging the contribution of several key individuals, including UNEP's first Executive Director, the founder of the Regional Seas Programme at UNEP, and a number of Directors of individual Regional Seas Programmes. He reviewed the chronology of the Regional Seas Programmes, highlighting characteristics including their outstanding degree of political support from developing countries, their function as platforms for supporting regional cooperation on the implementation of global MEAs, and their success in combining soft and hard policy instruments towards coordination and implementation of environmental management. He stressed the fact that no other programme has had that degree of political support from countries. The RSP is indeed an effective platform for supporting the implementation of multi-focal area projects of the GEF. He also stressed a number of factors that have affected the Regional Seas Programme, including institutional and leadership change, trends in donor contributions as well as prioritization within UNEP; and reduced frequency of guidance provided to Regional Seas through the UNEP Governing Council. He concluded by identifying a

number of critical steps in revitalizing and strengthening the Regional Seas, such as the need for governments to follow up on decisions of the Governing Council in relation to the Regional Seas, as well as enhanced budgetary allocations towards the programme. He also reminded that next year is the 40<sup>th</sup> anniversary of the RSP and noted that while they have done a lot it is just a small fraction of what needs to be done.

Dr. Carruthers, of SPREP, through his presentation, stressed the multiple challenges our seas are facing which require an integrated solution and how countries, through the regional secretariat, organized themselves and their work through a convention and action plan. There are actually 143 countries currently involved in 18 Regional Seas Programmes. Each RSP has however some unique features. For example, in the Pacific, SPREP oversees the implementation of the overarching action plan (2011-2015) which is supported by a Pacific Vision/visionary framework, supported itself by a marine sector working group. He outlined SPREP's role within regional governance arrangements, including the Pacific Oceanscape Framework, stressing the value of the SPREP in facilitating services to and linkages between countries in addressing the priorities of global MEAs. He further reviewed action towards implementation of the Regional Seas Strategic Directions 2013-2016, including data synthesis and streamlined reporting in support of regional planning as well as global efforts such as the World Ocean Assessment, and called for enhanced efforts across Regional Seas to promote and strengthen regional ocean governance, effective management of biodiversity in areas beyond national jurisdiction, and facilitating a transition to a green economy in a blue world. Key elements of a future revitalization for the RSP were presented such as the needs for strong partnership, inter-regional collaboration, collaboration with MEAs and global mechanisms, use of the LME approach, delivery of scientific information such as on marine litter (ML) or the use of different approaches such as marine spatial planning. Dr. Carruthers discussed the future of RSCAP and their relevance in implementation of the GPA. He concluded by stressing the need for Regional Seas to focus on services and support to member states, with the help of and in collaboration with UNEP, including the GPA.

#### **Agenda Item 5: Partnerships – trends and approaches on global, regional and national scale and operationalization of the same**

Partnership trends and approaches on global, regional and national scale were next discussed, including approaches to their operationalization. In a session moderated by Mr. David Coates of the CBD Secretariat, perspectives were shared from UNEP, the private sector, the Global Environment Facility (GEF), the World Bank Global Partnership for Oceans, and the Global Water Partnership.

Mr. Steve Rochlin, co-CEO, IO Sustainability, identified a number of critical considerations in establishing and operating partnerships, including the need to start from a common principle, commitment to common broader goals of the partnership, and a willingness to be held accountable against these; the need for partners to be able to stick to their respective and often differing core values and being clear about the different objectives partners may have within a partnership; the importance of slowly and carefully developing working practices as a foundation for more effective delivery in the longer term; and the need for structural clarity and clear and simple bureaucratic processes. In relation to seeking private sector engagement, he cautioned against seeking partnerships as a means for funding activities, and identified a number of helpful characteristics, such as companies that have adopted standards and procedures on

relevant issues; those that innovate, develop new solutions, and reach out to or embrace the approaches of other companies; and those that make significant business model changes towards supporting sustainability.

Mr. Stanley Rampair, representing the Global Water Partnership, echoed the importance of a common vision embraced by partners, and the need for strategic goals developed carefully and meticulously, the need for structural clarity, and the need for key components including a secretariat as well as oversight mechanism, and criteria of membership.

Mr. Christian Severin, of the Secretariat of the Global Environment Facility, provided an overview of partnership projects implemented with GEF funding through its international waters portfolio. He outlined the Transboundary Diagnostic Assessment (TDA) Strategic Action Programme (SAP) process, and illustrated it with examples from the South China Sea and Mekong river basin, including partnerships for local level implementation with municipalities.

Mr. Peter J. Kristensen, of the Global Partnership for Oceans (GPO), World Bank, noted the many challenges countries face in addressing pressures on the marine environment, and thanked Jamaica for the expertise offered towards development of the GPO. Pointing out that ocean degradation impacts the poor disproportionately, but that the ocean also provides enormous opportunities to meet their needs, he provided an overview of the rationale for the evolving Global Partnership for Oceans. He emphasized the need to scale up and speed up efforts, to mobilize and provide support and funding that enables a transition towards blue growth, by making adoption of policies with considerable short-term cost or social implications possible, and how the respective strengths of different partners can be harnessed.

Mrs. Elizabeth Maruma-Mrema, Officer in Charge and Deputy Director, Division of Environmental Policy Implementation, UNEP, highlighted the need for partnerships to also extend to the national level, where much action towards better environmental stewardship ultimately needs to take place. She also encouraged building on concrete examples from the Caribbean and Jamaican context towards supporting global partnerships.

A panel discussion addressed issues related to engaging beneficiaries and communities. Examples of policies for involving communities and reducing potential negative impacts on communities were mentioned, but it was noted that while beneficiaries may at times be involved in setting partnership goals and metrics for measuring performance, this is the exception rather than the rule. The key aspects of transparency and accountability as well as commitment to sharing knowledge and data to promote common understanding were reemphasized. It was further noted that a very significant challenge is enabling consideration of the costs of environmental degradation in planning.

Desired outcomes of the GLOC-2 conference identified included: shared commitment around key priorities and processes; sharing of knowledge; new collaboration; joint action plans steered by countries; strengthening and support to existing partnerships.

## **Agenda Item 6: The contribution of marine and coastal ecosystems to sustainable development**

The next plenary session focused on the contribution of marine and coastal ecosystems to sustainable development. It discussed policy pathways for a transition towards a Green Economy for Oceans in key ocean-based sectors and the macroeconomic reforms to facilitate the enabling conditions. It also discussed the contribution of natural capital by coastal and marine ecosystem services, particularly the climate related services of productive coastal ecosystems (i.e. blue carbon), into a Green Economy transition. Specific examples of re-direction of sector policy reforms in the island and coastal states and incorporation of blue carbon in national policies were presented. The session was moderated by Mr. Anthony McKenzie, from NEPA, Jamaica.

Ms. Jacqueline Alder, Coordinator, FMEB, UNEP, speaking about possible policy pathways for transition to a Green Economy (GE) for Oceans, brought attention to the 'Green Economy in a Blue World' report launched in 2012, and the rationale presented therein for incorporating ocean issues into efforts on national mainstreaming of Green Economy concepts. She provided examples from the report based on its sector analyses, noting the economic gains available from cleaner, more robust marine and coastal ecosystems. She also noted that, while technologies are often available, policy pathways and incentives require focus and concerted efforts, and that UNEP through its work is seeking to develop appropriate means of implementation, including through the UN system.

Mr. Andreas Hutahaean, Head-Research Group on Blue Carbon, Research Centre for Coastal and Marine Resources, Indonesia, presented National Blue carbon policy development in Indonesia. He pointed out that the commitment made by Indonesia in Copenhagen to reduce emissions by 26% through national efforts did not incorporate reductions arising from blue carbon, mainly due to lack of scientific information as well as challenges arising from the common property status of coastal ecosystems and limited attention and funding for this compared to terrestrial ecosystems. However, Indonesia's very extensive mangrove area and considerable annual rates of loss provides an opportunity to work towards a coastal blue carbon policy based on a science foundation. He stated that a series of demonstration sites were being established to fill knowledge gaps, and also emphasized the need for effective communication and outreach to the general public as well as policy makers, and provided examples of outreach strategies utilized.

A panel discussion addressed actions to accelerate transition to a GE, including valuation tools and trade off tools, better consideration of non-monetary values, and packaging information better for decision making; raising awareness and offering support; and understanding and developing appropriate incentives in close collaboration with the private sector. It was pointed out that, in the resource constraints of small island nations, the role of the sector in taking on GE initiatives is very important, but this needs to take place in a sound regulatory context. The need for increased focus on socio-economic analyses in relation to blue carbon was recognized.

### **Agenda Item 7: Priority areas: nutrients, wastewater and marine litter – where are we?**

Day 1 concluded with three presentations on where we are in relation to the GPA priority areas of nutrients, wastewater and marine litter.

Jan Willem Erisman, Director, Louis Bolk Institute gave a presentation on nutrients, highlighting the mandate and guidance provided in the Manila Declaration and providing

an overview of the GPNM in facilitating implementation. He noted the strong correlation between population, N and P use and CO<sub>2</sub> emissions, and that nearly 75% of nutrients used for agriculture are lost to the environment, often with detrimental effects on water quality, biodiversity, human health etc. While noting that e.g. the Netherlands has increased agricultural productivity while decreasing nutrient inputs and losses, he stated that nutrient inputs and inappropriate fertilizer practices will continue globally, albeit with uneven distribution. In identifying priorities, he mentioned a broad range of issues that require policy and management focus, including consumption, food waste, agriculture production, energy use etc. and that this also needs to be accompanied by relevant extension services. Tasks for a GPA-led process could include development of suitable indicators and targets, building on the preparatory work on nitrogen use efficiency improvement targets discussed at the GPA IGR-3.

Steven Ntifo, Jacobs Engineering UK, gave a brief overview of the many problems of wastewater emissions and some opportunities, as highlighted in the *Sick Water* report. Noting that a global partnership is yet to be formed, a good information base for concerted action exists through existing reports, including e.g. *Sick Water*, GLAAS. He pointed out that while notable progress has been made, e.g. through bringing access to improved sanitation to 1.8 billion people between 1990 and 2010, sanitation coverage is now 64% globally, more widespread in urban than in rural areas, and the MDG target is unlikely to be met. Progress made is a result of political will, science for evidence based policy, and availability of financial resources, and, e.g. the urban wastewater treatment directive of the EU provides a good example of how major impact can be achieved through planning, regulation, monitoring and reporting, and mechanisms for dealing with non-compliance. He recommended that a wastewater sector be created in countries, as the value and benefits of this outweigh the costs. This requires involvement of international organizations and bodies, national and regional parliaments, governments, civil society, establishment of proper regulators, enforcement through courts, provision of finance and ensuring accountability throughout the system, as well as consideration of demand and value of the service.

Peter Kershaw, Vice-Chairperson, The Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), characterized Marine Litter as a truly global issue that crosses boundaries and sectors, but one that ought to be possible to control. Plastic litter predominates due to slow degradation and poor waste management and control. A number of detrimental effects on ecosystems and economic activity are well described, but he pointed out that a number of knowledge gaps remain in relation to distribution in areas away from shorelines, including the seabed and water column; the population level impacts on ecosystems; the extent of the economic impact; and the potential risks associated with micro-plastics. He called for education across the board, reiterating that it is essential to ensure that the general public is aware and engaged, and called for a more focused approach to get marine litter concerns communicated to policy makers. He also called for enhanced cooperation and harmonization of actions through partnerships involving relevant sectors. In conclusion, he pointed out that actions to address marine litter need to be realistic and tailored to the context, and that any precautionary action needs to be proportionate and adaptive.

Day 1 concluded with a poster session, video presentation and “Meet & Greet” social event.

Day 2 of the GLOC-2 organized three parallel sessions (**Agenda Item 8**) addressing Wastewater, Nutrients and Marine Litter and a workshop on development of a coral reef

partnership. The agendas for these sessions are included as Annexes 8-11. These were followed by Partnership Forum meetings for the three global partnerships and the evolving coral reef partnership on the Day 3. During the parallel sessions on the three source categories of GPA there were presentations by various stakeholders from different parts of the world and panel discussions centered around a few key issues. These provided room for deep exchange on the challenges but more importantly on the potential and possible solutions and responses to address these issues.

Main discussion points on wastewater (WW) included the need for data, impacts of climate change, the risks and rewards of wastewater reuse and the need to view wastewater as a resource. Participants discussed the trends related to urbanization and how it created new challenges and identified gaps which need to be addressed, such as the MDG targets, political will, funding, capacity building, cost-effective solutions, and greater collaboration. Suggestions for inclusion in the Global Wastewater Initiative (GWI) Work Plan included agricultural generation and reuse of WW, public awareness, technology sharing, resource recovery and energy production, coordination of activities, and facilitated learning from others. These recommendations fed into the first steering committee of the GWI, which decided to invite UNEP and UN-Habitat to serve as the first Co-Chairs of the Steering Committee. A full report of the parallel session is included as Annex 12.

Main discussion points on marine litter (ML) included the definition of the work plan for the Global Partnership on Marine Litter (GPML), plastics management, indicators, biodegradability of plastics, the role of the private sector, Extended Producer Responsibility (EPR), behaviour change, impacts on marine animals, waste-to-energy, regional and national ML partnerships, and the roles of governments in addressing ML. The conference recommended that the GPML Work Plan focus on pilot projects; Abandoned, Lost and Discarded Fishing Gear (ALDFG); awareness-raising (e.g. waste as a resource; waste-to-energy); monitoring; target-setting; recovery of ML from sea; and knowledge-sharing. A full report of the parallel session is included as Annex 13.

Main discussion points on nutrients considered losses, particularly of reactive nitrogen and phosphorus, from the agricultural and sewerage systems, as the main causes for eutrophication of aquatic and marine ecosystems around the world, affecting water quality for human use and also aquatic and marine biodiversity. The conference noted the high correlation between increased hypoxic zones and the amounts of nitrogen being released. Public awareness of impacts of nitrogen on ecosystems is a problem. The increase in livestock farms and the related fertilizer use are rapidly becoming a severe source of nitrogen. Solutions to nutrient loading proposed included promoting Fertilizer Best Management Practices (such as soil fertility and soil conservation) and improving nutrient use efficiency in agriculture. A number of research topics and economic assessments were proposed, as well as indicator development, awareness-raising and education, for inclusion in the future work of the Global Partnership on Nutrients Management (GPNM). A full report of the parallel session is included as Annex 14.

A workshop (on Day 2 and Day 3) was organized to discuss the nascent coral reef partnership between UNEP, Regional Seas Programmes and other organizations. The sessions sought to provide information on partnership development and broaden collaboration in the partnership. The need for the partnership was confirmed, the draft partnership description was revised, and programmatic priorities identified through discussion among participants. Guidance was also provided on further development of the partnership.

Main discussion points on the coral reef partnership included the need to focus on coral reefs as an integral part of the broader tropical coastal ecosystem, in order to enable and effectively support ecosystem based approaches, and utilizing Regional Seas mechanisms to ensure the partnership responds to national and regional needs common to many coral reef regions, and to seek broad adoption and uptake of activities and outputs. Elements of a work programme were discussed, including ecosystem service assessment and valuation, with focus on better utilization of this in policy, planning and management; supporting planning and management that responds to climate change proactively, anticipating future change; providing mechanisms for access to and sharing of information and knowledge, contributing to policy setting; providing a community of practice, exchange of experience and lessons learned between regions; and capacity building at multiple levels. A full report of the parallel session is included as Annex 15.

Day 2 concluded with parallel sessions which included 5-minute Speed presentations on various relevant topics, which allowed for exposure of young scientists, project managers, and NGOs, added value and provided an entertaining end to the second day.

Day 3 resumed in plenary (**Agenda Item 9**) and recapped the discussions from the parallel sessions on Day 2, captured above.

#### **Agenda Item 10: The power of partnerships: Awareness & Outreach**

Approaches to awareness-raising and outreach were discussed using vivid and emotive videos and other presentation tools. The session was moderated by Mike Biddle, representing Waste Free Oceans. The first presentation featured a brief film clip on the impacts of marine litter on birds in the Pacific. This film was then discussed by Daniella Russo of the Plastic Pollution Coalition. A joint presentation on the impacts of micro-beads followed, by Ms. Maria Westerbos, Plastic Soup Foundation and Jeroen Dagevos of the North Sea Foundation, where they discussed development and use of an iPhone App to identify the presence of micro-beads in various cosmetic and other products. Mr. Andrew Russell, then presented on the Plastic Disclosure Project, followed by Professor Mark Sutton, of the Centre for Ecology & Hydrology (CEH), who used the example of the International Nitrogen Assessment to highlight the outreach challenges related to nutrient management, and indicating a role for the GPA in this regard.

Mrs. Patricia Aquing, of the former Caribbean Environmental Health Institute (now known as the Environmental Management Unit of the Caribbean Public Health Agency), elaborated on how the GEF-funded project on Integrating Watershed and Coastal Areas Management (IWCAM) in the Small Island Development States (SIDS) of the Caribbean approached its outreach and awareness activities and the impact of such activities.

#### **Agenda Item 11: Institutional financing mechanisms and opportunities at global, regional and national levels**

The final technical session of the GLOC-2 focused on financing mechanisms and opportunities. This session was moderated by Mr. Gérard Bonnis of the OECD. The first presenters, Mr. Christian Severin, of the Global Environment Facility (GEF), and Mr. Peter Kristensen, of the Global Partnership for Oceans, focused on global level financing opportunities. Mr. Severin outlined the proposed GEF-6 International Waters Strategy and investment modalities, highlighting the opportunity which the GEF still presented for financing viable and relevant initiatives. Mr. Kristensen reiterated the added value of the Global Partnership for Oceans and confirmed that it will deliver the finance and

collaboration needed to close the implementation gap which existed in relation to the problems being faced in oceans management. This would be through a Global Fund for Oceans, combined with public and private investments, initiated by requests from countries.

The next presenter looked at regional level financing mechanisms. Ms. Denise Forrest, Project Coordinator for the GEF-funded Caribbean Regional Fund for Wastewater Management (GEF-CReW), described the project and why it was so critical to the Caribbean. She explained the fund and how countries in the Caribbean were benefiting from this innovative revolving fund, to improve wastewater management and infrastructure.

### **Agenda Item 12: Draft elements for a report from the Conference**

The meeting then considered draft elements for a report from the Conference, which was presented by Jerker Tamelander, as Chief rapporteur, on behalf of UNEP. Following his summary, a number of participants, representing governments and agencies were invited to reflect on the conference and the recommendations. Those invited to share their reflections included Peter J. Kristensen (Global Partnership for Oceans); Gerard Bonnis (OECD); Mr. Gabriel Filippelli, representing the United States government; Ms. Hermien Busschbach, representing the Government of the Netherlands; and Anthony McKenzie, representing the host government of Jamaica.

A common theme of the reflections was the need for partnerships if our efforts are to be successful, and the willingness of all speakers to actively participate in future work.

### **Agenda Item 13: Closing of the Conference**

The final session officially closed the Conference. A representative of the government of Jamaica, Ms. Sharon Miller, on behalf of the Conference Chair, Minister Pickersgill and Ms. Elizabeth Maruma Mrema, on behalf of UNEP, both thanked the participants for their active participation. It was noted that the GLOC-2 had been able to gather scientists, experts, policy makers and NGOs from around the world. Over the three days, the conference included very lively, entertaining, and sound technical presentations. Out of these presentations, and the discussion they generated, a number of recommendations were made towards the implementation of the Manila Declaration on Furthering the Implementation of the GPA. Participants were able to explore current and emerging environmental management challenges that result from land-based activities, with the priority focus on the management of marine litter, wastewater and nutrients, as well as identifying possible solutions and opportunities for improved management of these issues at global, regional and national levels.

The UNEP representative noted that the Conference was able to emphasize the interconnectedness of activities on land and how they impact on the oceans, with a focus on pollution prevention, reduction and control, while proposing ways to address these impacts through cooperation. She confirmed that UNEP and the GPA were fortunate to have been able to organize the conference with the Government of Jamaica. She observed that the almost 200 participants from all around the globe thoroughly enjoyed the conference, including the social events. She further noted that the mix of NGOs, academics, the private sector, media representatives, inter-governmental organizations, and governments made for lively discussion, with the High-Level Plenary setting the tone for the event, and the parallel sessions on wastewater, nutrients, coral

reefs and marine litter allowing for deeper discussion and debate on the issues, leading to consensus on the way forward. Making reference to the Speed Presentations, media workshop, press conference, additional live press coverage, and the field trip, she felt that these added great value to the event. She was impressed that people gave up their lunch to attend Side Events as well.

In conclusion, UNEP thanked all who had made the event possible, noting the challenges faced in preparing for the Conference, in coming up with a programme that would be of interest to participants and which would serve to provide much-needed technical input to the design of the future Work Programme of the GPA. She promised to take forward the recommendations to the rest of UNEP and recognized the UNEP Team, both in Jamaica and elsewhere, particularly those in Nairobi, who played a role in the successful convening of the Conference. Credit was given especially to those who supported from the various agencies and Ministries in Jamaica, who UNEP thanked immensely for their efforts.

UNEP also thanked other partners for their technical and financial inputs, acknowledging the many experts from numerous organisations involved in the deliberations over the three days. UNEP looked forward to continued involvement of colleagues and organizations in the implementation of the GPA and the global partnerships. Finally, congratulations were offered to all for a most successful event.