



EAS CONGRESS 2009 HIGHLIGHTS: WEDNESDAY, 25 NOVEMBER 2009

On Wednesday, 25 November, participants of the East Asian Seas (EAS) Congress convened in plenary to hear a keynote presentation, followed by thematic workshops on, *inter alia*: the science in ecosystem-based management; mainstreaming of marine and coastal issues in national planning and budgetary processes; impacts of climate change on coastal and ocean areas; development and advances on marine biosafety in the context of the Convention on Biological Diversity (CBD); addressing food security through sustainable aquaculture; livelihood management and sustainable coastal tourism; and transboundary pollution reduction in river basins and coastal areas. Participants also attended a Corporate Social Responsibility (CSR) Forum. In the evening, delegates attended a special EAS Partnership Council meeting, and a briefing for the Ministerial Forum.

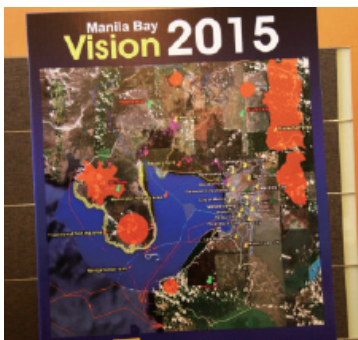


Participants admire an interactive map of the East Asian Seas at the Congress exhibition hall.

re-emphasized the importance of the corporate sector's involvement in helping solve pressing environmental challenges, noting that it requires the involvement of all sectors.

KEYNOTE PRESENTATION

Roderick de Castro, Team Energy, Philippines, discussed the importance of engaging the private sector in coastal and ocean management. He opened his address by highlighting major benefits derived from the ocean, including food security, sustainable economic development, and social and environmental robustness. After noting that only 5% of the Philippines' coral reefs remain healthy, he listed



Poster Exhibition: Manila Bay rehabilitation poster

a number of ways corporations, including Team Energy, are actively restoring the environment, through mangrove planting, coastal cleanup, and bird and fish sanctuary projects. He then focused on the pressing need to rehabilitate Manila Bay, citing the Singapore River's restoration as a reason for hope, noting, however, that it will take: political will; consolidation of resources; sound, sustainable and doable plans; and passion to make a difference.

Stephen Adrian Ross, PEMSEA, responded to the presentation saying it was the first time the corporate sector provided a keynote address at the Congress. He then

THEMATIC WORKSHOPS

COASTAL AND OCEAN GOVERNANCE: The science in ecosystem-based management: In the session on integrating science into policy and management decisions, Co-Chair Stephen de Mora, Plymouth Marine Laboratory (PML), UK, noted the need for innovative approaches to monitoring changes in ecosystems and effective strategies for communicating scientific information.

Trevor Platt, Partnership for Observation of the Global Oceans, described the applications of marine ecosystem observations using remote sensing to complement *in-situ* data. Mike Kendall, PML, underscored the high costs of coastal data collection and described the role and capability of community-based monitoring to supplement other coastal data sets. Co-Chair Xiongzi Xue, Xiamen University, recommended that national strategy action plans and regional environmental conventions be used to integrate local integrated coastal management (ICM) within regional ecosystem-based



Co-Chair Stephen de Mora, Plymouth Marine Laboratory

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management. Luky Adrianto, Bogor Agricultural University, described the socio-ecological connectivity and adaptability of fisher communities on the Siak Riau Basin in Indonesia.

In addressing questions from participants, Platt noted the increased capabilities and benefits of remote sensing over traditional grid-based data collection. On community-based monitoring, Kendall said government buy-in is needed to establish continuity and enthusiasm. Co-Chair de Mora recommended: the universal adoption of remote observation practices; promotion of community-based monitoring programmes with harmonized methodologies; and incorporating ecosystem-based management in ICM through national strategy action programmes.

In the afternoon session on innovative approaches and methodologies for monitoring coastal ecosystems, Doris Au, City University of Hong Kong, called for adopting biomonitoring techniques in marine coastal management and showed the applicability of this approach for coastal system health monitoring.

Karenne Tun, National University of Singapore, spoke on using biocriteria monitoring to determine baselines and develop an environmental monitoring and management plan for coastal resources. Nengwang Chen, Xiamen University, summarized a study on eutrophication monitoring in the Jiulong River watershed for managing harmful algal blooms in Xiamen Bay, China.



Gil Jacinto, University of the Philippines

Co-Chair Huasheng Hong, Xiamen University, highlighted large-scale biomonitoring, and Co-Chair Kendall recommended extending the range of species used for biomonitoring. Participants lamented the lack of capacity to reduce upstream eutrophication, and called for an aggregated water quality indicator from monitored data to improve political awareness.

In the afternoon, Gil Jacinto, University of the Philippines, and Platt co-chaired the session on knowledge transfer and communication. Bresilda Gervacio, PEMSEA, spoke on raising stakeholders' and policy makers' awareness and knowledge on the status of the marine resources using the Manila Bay Environmental Atlas. Elvira Sombrito, Philippine Nuclear Research Institute presented on the methodology used to develop the integrated environmental monitoring programme of Manila Bay.



L-R: Co-Chair Anjan Datta, UNEP, with Cliff Gonzalves, Seychelles



L-R: Anna Tengberg, UNDP; Andrew Menz, UNOPS; Tony Wagey, Indonesia

Nygiel Armada, Fisheries Improved for Sustainable Harvest project, Philippines, described the solid gains brought about by the project's ecosystem-based fisheries management approach in the biodiverse Danajon Bank. Co-Chair Hong presented a numerical model developed to predict and show changes in tidal flushing areas and carrying capacities in Xiamen Bay resulting from large-scale reclamation and restoration activities.

A discussion followed on harmonizing data collection with ICM approaches. In closing Co-Chair de Mora summarized the workshops outcomes, which include: the need to promote remote sensing, community-based monitoring and biomonitoring; the requirement of long term data sets for identifying large ecosystem changes; and communication of scientific findings in user-friendly language and formats.

Mainstreaming of marine and coastal issues into national planning and budgetary processes: The session was co-chaired by Anjan Datta, UN Environment Programme (UNEP), and David Osborn, UNEP. Co-Chair Osborn introduced the workshop, emphasizing that marine and coastal planning is about choosing the "gift" humanity presents to the next generation.

Cliff Gonsalves, Department of the Environment, Seychelles, provided a country overview of the Seychelles, noting key policy considerations for coastal and marine environments, including the need for political commitment, win-win partnerships with the private sector, and increased education and advocacy. He highlighted the National Environmental Plan as the overarching plan for mainstreaming the issues.



Risha Sewmangal Persad, South Africa

Risha Sewmangal Persad, Department of Environmental Affairs, South Africa, discussed mainstreaming coastal issues in national planning and budgetary processes by using the example of marine protected areas (MPAs). Wahyu Indraningsih, Ministry of Environment, Indonesia, overviewed her country's process for developing a national plan of action on protecting the coastal and marine environment, emphasizing that sectoral institutions and community participation are vital.

Jogeewar Seewoobaduth, Ministry of Environment and National Development Unit, Mauritius, presented on integrated coastal zone management (ICZM) as a framework and tool for planning and supporting sustainable coastal management based on experiences in his country. Baraza Wangwe, National Environment Management Authority, Kenya, spoke on his



DENR staff posing at the EAS Congress 2009 exhibition hall.

country's efforts to mainstream marine and coastal issues into national planning and budgetary processes, emphasizing the need for the plan to be implemented as soon as possible.

Padmini Batuwitage, Ministry of Environment and Natural Resources, Sri Lanka, discussed the development of an environmental conservation levy and other Sri Lankan environmental policy measures. She reviewed the levy's history, aims, and implementation difficulties. Responding to questions, she clarified that the levy feeds a separate account, but that the implementing agency requires parliamentary approval to use the funds.

Robert Jara, PEMSEA, noted challenges for coastal areas including pollution, natural disasters, habitat degradation, and overfishing, and discussed Executive Order 533, which mandated that ICM be the national framework for coastal management in the Philippines. He outlined financing opportunities from environmental and user fees and public private partnerships. Responding to questions, he said federal funds are distributed according to population and land-area, noting possible future inclusion of coastal waters. He also recognized the importance of capacity building and simplifying planning requirements.



Robert Jara, PEMSEA

LaVerne Walker, Ministry of Physical Development and the Environment, St. Lucia, reviewed the establishment of an ICZM strategy and plan in St. Lucia, and work to address water quality as it affects recreational opportunities, noting progress on regulating land-based sources of pollution and a recreational water quality standard.

In closing, Co-Chair Osborn outlined lessons for mainstreaming and requirements for expanding implementation of coastal management. In the discussion, participants stressed the importance of, *inter alia*: the economic value of oceans; and the need for capacity building, training, and education.

NATURAL AND MAN-MADE HAZARD PREVENTION AND MANAGEMENT: Impacts of climate change at the coastal and ocean areas of the East Asian seas region: The session was co-chaired by Björn Kjerfve, World Maritime University, and Chul-Hwan Koh, Seoul National University, and opened by Chul-Hwan Kim, Ministry

of Land, Transport and Maritime Affairs, Republic of Korea, who announced that his country would host the fourth EAS Congress.

Arthur Chen, National Sun Yat-Sen University, spoke on global change and impacts of human activities on coastal zones, and urged participants to further consider "global change," which merges human activities with the changing climate patterns. Suam Kim, Pukyong National University, presented on emerging issues of East Asian fisheries production in conjunction with climate change, and noted that the East Asian area is reliant on fisheries and that rising sea temperature threaten the livelihoods of many people.

Hiroimitsu Kitagawa, Ocean Policy Research Foundation, Japan, spoke on shipping and climate change, saying there will be enormous gains when the Northeast Passage opens. Joshua Ho, Nanyang Technological University, shared some personal thoughts about the dramatic rate of climate change, suggesting that inaction on climate change is "genocide against future generations."

A panel then led participants in raising questions on, *inter alia*, the future of coral reefs and ocean acidification.

In the afternoon session on the challenges, integrated responses, adaptation and resilience strategies for climate change, Weidong Yu, Intergovernmental Oceanographic Commission of the West Pacific, presented on marine science and sustainable development, and illustrated the work of the Monsoon Onset Monitoring and its Social and Ecosystem Impact project. Samuel Peñañiel, Asia Pacific Network for Global Change Research (APN), described APN's efforts to address threats related to global change and coastal zone management issues for East Asia.

Beverly Goh, National Institute of Education, Singapore, described the Dynamic Interactive Vulnerability Assessment model, a software modeling programme that maps out the Intergovernmental Panel on Climate Change (IPCC) scenarios to estimate adaptation costs. Describing Korea's comprehensive plan for climate change adaptation, Suk-Hui Lee, Korean Marine Environment Management Cooperation, reported on an initiative for climate change adaptation in Korean coastal areas. Rosa Perez, Philippines, highlighted the need to integrate climate change adaptation strategies into decision-making processes.

On climate change adaptation, Laura David, University of the Philippines, explained how protecting coral reefs would secure livelihoods of local fishers. Noraleen Uy, Kyoto University, linked poverty reduction, disaster risk



L-R: Co-Chairs Chul-Hwan Koh, Seoul National University and Björn Kjerfve, World Maritime University



L-R: Co-Chairs Jose Matheickal and Fredrik Haag, International Maritime Organization

reduction and climate change adaptation using a study in Albay, Japan. Sinh Bach Tan, National Institute for Science and Technology Policy and Strategy Studies, Vietnam, presented on the articulation of co-governance. Maria Osbeck, Stockholm Environment Institute, described coastal change and stakeholder realities using a study on mangrove rehabilitation in Thailand.

A panel led participants in discussing the need to, *inter alia*: transform attitudes in order to create practical solutions; translate scientific studies into practice on the ground; and educate populations on the effects of the Pacific Decadal Oscillation shift.

Development and advances on marine biosafety in the context of the CBD: Adnan Awad, International Ocean Institute, South Africa, gave an overview of marine biosafety and related international instruments. He noted the impacts of invasive alien species (IAS), including: ecological, with new invasions every nine weeks; economic losses of US\$100 billion a year; and human health, including shellfish poisoning, cholera and other diseases. He said species of all taxa are included in the IAS category, such as lionfish, algae, and invertebrates, and highlighted the relevance of CBD Article 8(h) on alien species.



Cheryl Rita Kaur, Maritime Institute of Malaysia

resources and human health. Fredrik Haag, IMO, described the GEF/UNDP/IMO GloBallast Partnership Programme, which focuses on legal, policy and institutional capacity building using global tools, regional training and harmonization, and national development and implementation.

Discussion touched on building partnerships with other intergovernmental organizations, training and communication, ratification of the BWMC, and national implementation of conventions.

Jose Matheickal, International Maritime Organizations (IMO), discussed the International Convention for the Control and Management of Ship's Ballast Water and Sediments (BWMC). He said BWMC regulates IAS associated with ballast water and sediments to prevent, minimize and eventually eliminate the risk to environment, property,

In the afternoon session, Xiaoman Xu, Maritime Safety Administration, China, discussed marine biofouling (undesirable accumulation of marine organisms on a ship's hull) and its impact on marine biodiversity. She reviewed the history of IMO agreements, leading to the Anti-Fouling Systems (AFS) convention that entered in force in 2008. She listed negative impacts of anti-fouling ship treatments on China's environment, including lethal effects on aquaculture, biodiversity, ecosystems and humans; and effects on the shipping industry, including alternatives, cost, and the toxicity of different treatments.

Serena Teo, Tropical Marine Science Institute, Singapore, discussed research and development in the field of marine biofouling. She described biofouling as a vector, as 69% of IAS are transferred by shipping. She noted that the biosecurity risks from biofouling on hulls may exceed threats from ballast water, but it is difficult to get good estimates because of a lack of baseline data. Cheryl Rita Kaur, Maritime Institute, Malaysia, addressed marine biosafety in domestic shipping in coastal and inland East Asia. She described: rising trade and economic growth in the region where most coastal states depend on the sea for trade and economic development; countries in the region holding one-third of the world's population, mostly in the coastal zone; and the sea becoming a medium for transportation, communication and commerce. She called for ratification of AFS and BWMC conventions.

Discussion touched on risk assessment, risks of biofouling treatments, and ratification of conventions. Participants approved draft recommendations to ministers on ratification of BWMC and AFS.

FOOD SECURITY AND LIVELIHOOD

MANAGEMENT: Theme keynote: Michael Crawford, Institute of Brain Chemistry and Human Nutrition, UK, discussed the importance of marine resources in providing docosahexaenoic acid (DHA), an omega-3 fatty acid important in brain development. He noted that the costs associated with mental health problems presently exceed those of cancer and heart disease combined, and emphasized that aquaculture must be prioritized to bridge the gap from capture fisheries.

Addressing food security through sustainable aquaculture: Chair Mohamed Shariff, Universiti Putra Malaysia, welcomed participants. Michael Phillips, WorldFish Center, Malaysia, noted that despite being the fastest growing food production sector in the world, aquaculture was far from meeting global protein demands. He stressed the need for improved production systems and supply chains. Weimin Miao, Food and Agricultural Organization of the United Nations, discussed contributions of aquaculture to food security and poverty alleviation noting that 20% of total protein consumption is derived from fish, 50% of which comes from aquaculture.

Jocelyn Hernandez-Palerud, Akvaplan-niva, Norway, discussed the importance of carrying-capacity models in ensuring efficient aquaculture, as shown in Lake Taal where high stocking density and intensive feeding exists. Jon Funderud, Yellow Sea Fisheries Research Institute, China, presented on integrated multi-trophic aquaculture in Sungo Bay, where high yields of fish, seaweed and shellfish help filter pollution, thus combating eutrophication. Takehiro Tanaka, Department of Agriculture, Forestry and Fisheries, Japan, discussed marine ranching in Okayama, noting its success in promoting fish ecology by creating artificial reef and rock habitats and improving local fisheries.



Neviaty Samani, Bogor Agricultural University, Indonesia

Gil Adora, Bureau of Fisheries and Aquatic Resources, Philippines, discussed the role of mariculture park projects in ensuring food security in Eastern Visaya, and in Panabo City through increased fisheries productivity, income generation and poverty alleviation. Renato Agbayani, Southeast Asian Fisheries Development Centre, explained the importance

of incorporating ICZM practices in aquaculture to ensure sustainability, environmental protection and social equity.

In the afternoon session, Ik Kyo Chung, Pusan National University, discussed a model to identify and prioritize seaweed for integrated multi-trophic aquaculture (IMTA), adding that it is useful for scientists and practitioners in determining optimal water temperature requirements for seaweed culture. Danilo Largo, University of San Carlos, discussed four potential seaweed species for IMTA in the Philippines, stressing the need to test their compatibility. Maria Lourdes San Diego-McGlone, University of the Philippines, presented negative effects of mariculture in Bolinao, noting recent fish kills and coral degradation due to eutrophication. She stressed that mariculture should not be at the expense of the environment. Neviaty Zamani, Bogor Agricultural University, discussed the need to implement ICM in development of eco-friendly aquaculture in Jakarta's small islands, presenting challenges of choices between livelihoods and environment.

In ensuing discussion, the major outcomes of the workshop highlighted were the need for: carrying capacity models; local community involvement; and artificial mariculture parks. One participant highlighted the need to consider the problem of invasive species introduced by aquaculture and their impacts on biodiversity. Others noted the interaction between climate change and aquaculture.

Livelihood management and sustainable coastal tourism:

Co-Chairs Poh Poh Wong, National University of Singapore, and Miguel Fortes, UN Educational, Scientific and Cultural Organization, with Wong opening the session, stressing the importance of making coastal tourism sustainable, especially in light of increasing natural hazards, beach erosion and beach degradation. In the workshop keynote address, Janet Lazatin, Department of Tourism, Philippines, noted that the sustainable coastal tourism strategy in the Philippines is based on three guiding principles: economic viability, social equity and ecological soundness.

Mark Hampton, Kent Business School, presented on small-scale coastal tourism in South East Asia, stressing the importance of keeping tourism expenditure within local communities. Co-Chair Fortes stressed that the assets associated with sustainable coastal tourism are at risk from human use and natural disaster. Benjamas Chottong, Thailand Environment Institute, noted that community-based tourism should be used in those communities already experienced in managing natural resources.

Haruyuki Kojima, Kyushi Koritsu University, noted the creation of a coastal tourism strategy for the Munakata Coastal Zone in Japan, based on long-stay experiences that include monthly festivals and events, eating seasonal foods and marine excursions. Kim Nong, Participatory Management of Coastal Resources, Cambodia, noted key dimensions for mangrove management and ecotourism promotion in Cambodia including: building partnerships; capacity building; community organization; advocacy for policy and legislation support; and promotion of benefits.

In the afternoon session, Chloe Hunt and Kanyarat Kosavisutte, Green Fins Programme, provided an overview of the Green Fins Programme, noting that it is based on cooperation and collaboration to lessen the impact of scuba divers and snorkelers on the marine environment, and highlighted tools used to ensure the Programme's success, including seminars and public-private partnerships.

Jose Morata, Municipality of Pagudpud, Philippines,

presented on the Pagudpud Homestay programme in Ilocos Norte, Philippines, saying it is a low-cost, community-based strategy to increase ecotourism in the area. Bodhi Garrett, IUCN, elaborating on the North Andaman Community Tourism Network, noted lessons learned from the network, including multi-stakeholder



Co-Chair Wong Poh Poh, National University of Singapore

engagement and setting private sector investment standards. Citing the case of Bali, Made Antara, University of Udayana, noted approaches for managing sustainable coastal tourism, including: village tradition and foundation; and government agency.

Louie Mencias, Philippine Commission on Sports Scuba Diving, elaborating on Buhay Dagat, said objectives of the programme include: encouraging continued protection and management of MPAs; and developing eco-tourism enterprises. Co-Chair Wong noted the many impacts of climate change on global tourism, including increases in extreme events, biodiversity loss, and increased political destabilization. Carlos Libosada Jr., ecotourism consultant, presenting on tourism in a changing climate, noted the local effects of a global reality and stressed the need for local solutions.

POLLUTION REDUCTION AND WASTE

MANAGEMENT: Theme keynote: Rudolf Wu, Centre for Marine Environmental Research and Innovative Technology, China, hailed the current era of rapid technological advancement and "knowledge explosion" where chemicals and threats are now detectable. Wu noted that increased nutrient concentration in coastal areas is causing large-scale hypoxia, mass mortality of marine life and trophic changes that are long lasting or irreversible. He recommended: prioritizing analysis of contaminants that are plentiful in the environment and which cause biological effects; using a combination of eco-remediation and nanotechnologies; adopting a risk assessment and management approach; and reducing analysis costs.

Transboundary pollution reduction in river basins and coastal areas: Co-Chair Anatoly Kachur, UNEP, presented on the response to transboundary river pollution in the Tumen and Amur basins, using environmental assessments and transboundary protected area networks. Ivan Arzamastsev, Pacific Geographical Institute, Russia, delivered results of land and human activity zoning of the Far East Russian coast using the integrated coastal area and river basin management (ICARM) approach. Hyun Taik Oh, National Fisheries Research and Development Institute, Republic of Korea, introduced the national programme using the ICARM approach to prioritize efforts, develop legislation and establish institutional mechanisms. Xin Xie, China National Environment Monitoring Center, introduced an ICARM project on the Yellow River that measures river discharge in Chinese coastal areas. Vladimir Shulkin, Pacific Geographical Institute, Russia, proposed plankton production as a proxy for monitoring coastal eutrophication from river runoff.

During the discussion, Co-Chair Zhou Qiulin, Third Institute of Oceanography, China, clarified that Chinese fishers do not receive alternative livelihood assistance during closures but request closure extensions to seek training and repair equipment. Xie clarified that standards for nitrogen and phosphorous, as opposed to standards for heavy metal and organic pollution, have been the Chinese government's focus to date.

Shogo Murakami, National Institute for Environmental Studies, Japan, showed that using ICARM in Japan, increased septic tank systems and wastewater treatment has steadily decreased pollution in Seto Inland Sea. Peni Susanti, Regional Environment Management Board in Jakarta, Indonesia, presented strategies to reverse the "heavily polluted" Jakarta bay system. Deogracias Tablan, Jr., Pasig River Rehabilitation Commission, Philippines, shared his vision on Pasig River restoration using, *inter alia*, dredging and aeration.

On Selangor system pollution reduction, Norfaezah Binti Shamsuddin, Selangor Water Management Authority, Malaysia, highlighted that prevention is cheaper and more effective than cleaning or restoration. Jothieswaran Poobalasingam, National Environment Agency, Singapore, demonstrated how water quality is sustained in Singapore using land-use planning, legislation, and education. Benrong Peng, Xiamen University, showed the use of digital mapping tools to quantify non-point sources, and said wastewater and fertilizer contributes 60% of organic pollutants in Xiamen Bay. Co-Chair Zhou advocated for technical workshops among cities to facilitate transboundary exchanges on achievements and lessons.

On Chesapeake Bay catchment management, Co-Chair David Nemazie, University of Maryland, highlighted the success of reduction pollution through accountable and prioritized political attention. Ivan Zavadsky, Global Environment Facility, presented on successful transboundary partnerships in the Black Sea basin between 16 countries and three investment projects. Open discussions recommended top-down leadership, planning, and non-point source regulations.

an opportunity to learn from public-private cooperation to rehabilitate Manila Bay. Chair Marilou Erni, Bataan Coastal Care Foundation (BCCF), said the workshop aims to determine ways for scaling up local ICM experiences, and presented on the objectives of BCCF. She stressed that broad participation from different sectors is needed for effectiveness, and underlined challenges of soliciting participation in certain provinces.

Vincente Tuddao, Department of Environment and Natural Resources, Philippines, said rehabilitation in Manila Bay began in the 1980s, but efforts were fragmented until government agencies were charged by a court order to make Manila Bay swimmable. He reviewed, *inter alia*: the objectives and targets of the plan; implementation; and activities being pursued, including restoration and sewage treatment. Frankie Arellano, Maynilad, detailed freshwater sources feeding Manila Bay and discussed sanitation and sewage services, including a project to improve service coverage in the San Juan River Basin. Roderick de Castro, Team Energy, discussed rehabilitation and habitat protection work, noting the objectives of, *inter alia*: increasing forest cover by 80% by 2015 and restoring water quality. He also said Manila Bay is critical for migratory birds. Robert Jara, PEMSEA, said scaling up ICM to all of Manila Bay is the next challenge.

In a moderated session, participants discussed, *inter alia*, the management challenges presented by different water pollution sources, and reaffirmed their commitment to collaborative partnerships to rehabilitate Manila Bay.



Chair Marilou Erni, Bataan Coastal Care Foundation

EAS CONGRESS 2006 SUMMARY

The IISD Reporting Services summary of the East Asian Seas Congress 2009 will be available on Monday, November 2009 online at: <http://www.iisd.ca/yimb/easc2009/>

SPECIAL SEMINARS

CORPORATE SOCIAL RESPONSIBILITY FORUM FOR COASTAL AND MARINE AREAS AND THE SUSTAINABLE DEVELOPMENT OF MANILA BAY:

Renato Cardinal, PEMSEA, opened the session, calling it