EAS Congress 2012
Changwon City
Republic of Korea
EAST ASIAN SEAS CONGRESS

Building a Blue Economy: Strategy, Opportunities and Partnerships in the Seas of East Asia

9-13 July

SUBTHEME 2

Accelerating Blue Innovations in Support of an Ocean-based Blue Economy

WORKSHOP 3

Safeguarding Ocean-based Blue Economy through Innovative Solutions to Climate Change and Disaster Risk Reduction

CO-CONVENING AGENCY:

KOEM

Korea Marine Environment Management (KOEM)

Chair: **Mr. Hyun-Jong Kim**
Korean Marine Environment Management Corporation (KOEM)

gef Global Environment Facility

United Nations Development Programme

UNOPS United Nations Office for Project Services

PEMSEA Partnerships in Environmental Management for the Seas of East Asia

MLTM Ministry of Land, Transport and Maritime Affairs

City Government of Changwon, RO Korea

The East Asian Seas Congress 2012
"Building a Blue Economy:
Strategies, Opportunities and Partnerships in the Seas of East Asia"
Changwon City, RO Korea, 9–13 July 2012

Subtheme 2: Accelerating Blue Innovations in Support of an Ocean-based Blue Economy

Workshop 3: Safeguarding Ocean-based Blue Economy through Innovative Solutions to Climate Change and Disaster Risk Reduction

11 July 2012

Co-convening Agency:
Korea Marine Environment Management Corporation (KOEM)

Chair:
Mr. Kim Hyun-Jong
Vice President for Marine Conservation, KOEM, RO Korea

Co-chair
Dr. Jose Padilla
Regional Technical Advisor for Marine, Coastal and Island Ecosystems,
United Nations Development Programme, Thailand

1. INTRODUCTION

1.1. The Fourth East Asian Seas (EAS) Congress, hosted by the Ministry of Land, Transport and Maritime Affairs (MLTM) and organized by the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), and the City Government of Changwon, was held at the Changwon Exhibition Convention Center (CECO) in Changwon City, RO Korea, from 9 to 13 July 2012. Carrying the theme, "Building a Blue Economy: Strategy, Opportunities and Partnerships in the Seas of East Asia," the EAS Congress 2012 aimed to address the new opportunities for the ocean economy of East Asia, the range of partnerships that have developed and are required to realize the full potential of a blue economy and the progress and achievements in governance of regional/subregional seas within the framework of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA).

1.2. The EAS Congress 2012 featured the Fourth Ministerial Forum, the International Conference on Sustainable Coastal and Ocean Development, the annual meeting of the PEMSEA Network of Local Governments for Sustainable Coastal Development (PNLG), an exhibition, the Third EAS Youth Forum and other activities. More than 1,200 stakeholders — participants from national and local governments, the academe, UN agencies, regional organizations,

nongovernment organization (NGOs), the private sector, students, communities and other members of the society from within and outside the East Asian Seas region — attended the events.

1.3. Five major subthemes comprised the International Conference. The themes were: (1) Nurturing Coastal and Ocean-based Blue Economies at the Local Level: Opportunities and Challenges, (2) Accelerating Blue Innovations in Support of an Ocean-based Blue Economy; (3) Securing Ecosystem Services through Integrated Coastal and Ocean Management; (4) Good Governance, Good Business; and (5) Meeting Institutional and Individual Skills and Capacities for Integrated Coastal and Ocean Governance.

1.4. The Workshop on Safeguarding Ocean-based Blue Economy through Innovative Solutions to Climate Change and Disaster Risk Reduction under Subtheme 2 explored sound methodologies and good practices in climate change vulnerability assessment as well as adaptation to climate change and disaster risk reduction, which are designed to enhance the resiliency of the coastal and ocean sector (**Annex 1**).

1.5. The workshop was opened by **Mr. Kim Hyun-Jong**, Vice President for Marine Conservation of the Korea Marine Environment Management Corporation (KOEM). Mr. Kim stressed the importance of addressing the challenges of climate change in relation to achieving a blue economy. Mr. Kim expressed his desire for the workshop to identify areas for potential collaboration, as climate change is one of the significant aspects of sustainable development. The co-chair, Dr. Jose Padilla of the United Nations Development Programme (UNDP), pointed out that the workshop intends to explore and recommend sound and effective methodologies and good practices in climate change vulnerability assessment, as well as adaptation to climate change and disaster risk reduction (**Annex 2**).

2. PRESENTATIONS

2.1. The presentations covered efforts from five countries: Indonesia, Japan, RO Korea, Philippines and Vietnam.

2.2. **Dr. Felipe Hilan Nava**, Guimaras Province, shared the province's experience in implementing a joint project by the Yeosu Expo 2012, the Korea International Cooperation Agency (KOICA), the Korea Maritime Institute (KMI) and the Provincial Government of Guimaras, which resulted in the crafting of a Disaster Risk Reduction and Management (DRRM) Framework. The framework will be used in refining the existing Guimaras Disaster Management Plan (GDMP) in line with the requirements of the Disaster Risk Reduction and Management Act of the Philippines (Republic Act 10121). Governor Nava expounded on the participatory process involving the community stakeholders in the development of the DRRM framework. The process has generated valuable information on community perception and their level of awareness about disaster management, which is important in the refinement of the GDMP.

2.3. **Dr. Won-Tae Shin**, Global Ocean Inc., on behalf of Prof. Safwan Hadi of Bandung Institute of Technology, Indonesia, presented the research done in Jakarta Bay to assess and predict inundation vulnerability and risk of seawater flooding to 2030. The research study, in particular, considered potential hazards that cause inundation including tides, waves, tsunami, El Niño and La Niña, storm surges and land subsidence. The parameters used to assess vulnerability, on the other hand, included elevation, infrastructure, land use, population density and slum houses. The prediction included five scenarios. The study revealed that the northern regency of Jakarta was the most vulnerable area with respect to inundation of seawater.

2.4. **Dr. Vu Thanh Ca**, Vietnam Administration of Seas and Islands, affirmed that climate change and sea-level rise have resulted in a prolonged dry season, drought duration and exacerbated the existing problems of flooding, salinity intrusion, coastal erosion and degradation of mangrove forests. There were also increased risks of waves overtopping and/or breaking the dike along the Mekong Delta. Flooding risks varied from high to medium. The threats posed by climate change and sea-level rise to agriculture, aquaculture, infrastructure, transportation, etc. and to livelihoods of local inhabitants were assessed as varying from medium to high. Prioritized adaptation measures included policy and institutional development; poverty reduction/eradication; improved land use planning; education for disaster reduction and prevention; sustainable use of livelihood assets for economic development; and upgrading the roads, sea dikes and other infrastructures.

2.5. **Mr. Taishi Yamamoto**, the MLTM of Japan, introduced Japan's technology in port management for reducing the impacts of natural disaster, including the construction of tsunami breakwater, earthquake resistant berth and installation of global positioning system (GPS) buoys. Mr. Yamamoto outlined the efforts of the Ministry in rehabilitating the ports. Under the Restoration Plan, the entire port facilities essential for industry and logistics are scheduled to be fully restored within two years. Budget for the restoration in 2011 was USD 3.4 billion. Efforts to reduce the impacts of disaster include revision of technical standards and design of port facilities to increase their resilience and construction of wide area prevention bases.

2.6. **Dr. Kwang-Woo Cho**, Korea Environment Institute (KEI), stated that the National Assessment to Sea-level Rise Impact of the Korean Coast started in 2011 and will continue until 2013. The objective is to assess the vulnerabilities caused by rising sea levels resulting from climate change and the resulting impacts on Korea's socioeconomic activities. The primary socioeconomic systems selected for vulnerability assessments of the study included population, housing, flood areas, land coverage and public facilities, among others, for the first year (2011); harbors, coastal embankments, industrial complexes and tourist facilities are included in the second year (2012); and roads, power plants and drainage facilities in the third year (2013).

2.7. **Dr. Rosa Perez**, The Manila Observatory, Philippines, outlined the efforts in Manila Bay to develop a "macro scale" land and sea use zoning for the bay's coastal area, with specific focus on the different scenarios for flooding, storm surges and sea-level rise as a consequence of climate change, variability and

extremes. Some of the findings in the exercise showed that the coastal areas around Manila Bay are vulnerable to inundation due to sea-level rise and that widespread flooding can also result from extreme rainfall events (> 300 mm/day). The extreme relative sea level consists of the effects due to global warming, storm surge and rate of subsidence during the passage of intense tropical storms and typhoons. The inundation maps indicate that the projected inundation areas occur where the major infrastructures are located (roads and bridges), as well as high concentrations of population and high poverty incidence.

3. PANEL DISCUSSION AND OPEN FORUM

3.1. The three panelists — **Dr. Mario De los Reyes**, University of the Philippines; **Dr. Nam Jung-Ho**, KMI; and **Dr. Kem Lowry**, University of Hawaii — provided the following insights and expert opinions on the topic during the panel discussion:

- Vulnerability assessment (VA) methodologies offer some diagnostic guide for adaptation policy development. These should be linked to the actual planning process and system at the local level. In the assessment of sectoral vulnerability, parameters from empirical sources can replace the more rigid techniques until such time that the target users are trained to develop their own models and more sophisticated and reliable databases.

- The VA tools developed are commendable attempts to rationalize adaptation measures based on what needs to be addressed through public policy. Given the present institutional limitations in local development planning, only a few aspects of the tools can be applied, while some need further modifications. In all tools, the assessment of adaptive capacity can be adopted.

- It is imperative to develop a more suitable and applicable VA tool that adopts a uniform method for coastal and marine sector.

- Potential areas of collaborations in climate change adaptation (CCA) and disaster risk reduction (DRR) include education, research, knowledge management and participation in university networks.

- In terms of institutional strengthening, cooperation can be facilitated through the following: (a) faculty exchange – North-South or South-South Exchange; (b) conduct of Training of Trainers (TOT), conferences, workshops, seminars; (c) curriculum development on climate change adaptation, disaster risk reduction and coastal environmental planning and management; and (d) training a pool of multidisciplinary experts in developing countries on coastal planning and development mainstreaming CCA and DRR.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1. The following conclusions and recommendations were generated from the panel and open discussions:

4.2. Conclusions

- Significant progress on VA has been achieved in the region as shown by the body of work presented covering Jakarta Bay, Manila Bay, Mekong Delta, RO Korea and elsewhere.

- A range of VA methodologies has been employed and there is no model that fits all. The type of model used depends on the availability of data, the geographic scale and other factors.

- VAs are not ends in themselves, but are tools for prioritization and planning; plans emanating from there should be mainstreamed into local and national development plans.

- CCA plan should be designed in consideration of various local settings to increase effectiveness and resilience. Tailoring adaptation strategies is critical. Each local area features unique traits that call for a unique approach for designing adaptation strategies that are effective, fiscally sound and politically legitimate.

- Effective design of climate change response strategies requires transparent implementation processes involving experts, policymakers and citizens.

- Participatory approaches should be undertaken with the direct involvement of communities as well as planners and policymakers to provide the appropriate enabling policy and legislation.

- Integrated approaches are the way to do DRRM and CCA; Integrated Coastal Management is the appropriate approach.

4.3. Recommendations

- Develop localized CCA strategies in consideration of various local settings.

- Continue to develop scientific methods for vulnerability assessment that will help identify tailored adaptation measures.

- Include hard and soft approaches in menus of options.

- Promote participatory CCA planning and implementation where all stakeholders are involved, especially local residents.

- Implement prioritized “no regret” adaptation strategies to minimize losses and damages.

- Promote an ecosystem approach to coordinate with partners outside the coastal sector.

- Increase climate change-related knowledge and information as well as capacity.

ANNEX 1
Workshop Program

Time	Activity/Presentation	Responsible Person
Session 1: Good practices in climate change adaptation and disaster risk reduction		
10:00–10:20	Chair's introduction of the workshop	**Mr. Kim Hyun-Jong** Vice President KOEM RO Korea **Dr. Jose Padilla** Regional Technical Advisor for Marine, Coastal and Island Ecosystems, UNDP Thailand
10:20–10:40	Disaster Risk Reduction and Management Framework of Guimaras Province, Philippines	**Dr. Felipe Hilan A. Nava** Governor Guimaras Province Philippines
10:40–11:00	Assessing Vulnerable and Risk Areas of Inundation in Jakarta Bay	**Dr. Safwan Hadi** Professor of Physical Oceanography Faculty of Earth Sciences and Technology Bandung Institute of Technology Indonesia
11:00–11:20	Mega Delta and Climate Change: A Case Study in Mekong Delta Area	**Dr. Vu Thanh Ca** Director Research Institute for the Management of Seas and Islands Vietnam Administration of Seas and Islands Vietnam
11:20–11:40	Building Resilience of the Coasts to the Impacts of Tsunami	**Mr. Taishi Yamamoto** Director for International Policy Industrial Port Policy Division Ports and Harbours Bureau MLTM Japan
11:40–12:00	Recent Developments in Vulnerability Assessment in RO Korea	**Dr. Kwang-Woo Cho** KEI RO Korea
12:00–12:20	Macro-scale Land and Sea Use Zoning Plan for Manila Bay, Philippines: Scenarios for Sea-level Rise, Flooding and Storm Surges as a Consequence of Climate Change, Variability and Extremes	**Dr. Rosa T. Perez** Sr. Research Fellow The Manila Observatory Philippines

Time	Activity/Presentation	Responsible Person
12:20–14:00 Lunch Break		
Session 2: Panel Discussion		
14:00–15:30	- Recommendations on effective methodologies for vulnerability assessment and adaptation policy development. - Strengths and weaknesses of current methodologies. - Suggest good practices and way forward. - Identify potential areas of collaboration.	Moderator: **Dr. Won-Tae Shin** Chief Executive Officer Global Ocean Inc. RO Korea Panelists: **Dr. Mario Delos Reyes** Associate Professor School of Urban and Regional Planning University of the Philippines, Philippines **Dr. Nam Jung-Ho** Director Department of Marine Environment and Climate Change Research KMI RO Korea **Dr. Kem Lowry** Professor University of Hawaii USA
15:30–16:00	Conclusions and Wrap-up	**Mr. Kim Hyun-Jong** Vice President KOEM RO Korea

ANNEX 2

List of Resource Persons and Staff

Mr. Kim Hyun-Jong
Vice President
KOEM
RO Korea

Dr. Jose Padilla
Regional Technical Advisor for Marine, Coastal and Island Ecosystems
UNDP
Thailand

Dr. Mario Delos Reyes
Associate Professor
School of Urban and Regional Planning
University of the Philippines
Philippines

Dr. Nam Jung-Ho
Director
Department of Marine Environment and Climate Change Research
KMI
RO Korea

Dr. Kem Lowry
Professor
University of Hawaii
USA

Dr. Felipe Hilan A. Nava
Governor
Guimaras Province
Philippines

Dr. Vu Thanh Ca
Director
Research Institute for the Management of Seas and Islands
Vietnam Administration of Seas and Islands
Vietnam

Mr. Taishi Yamamoto
Director for International Policy
Industrial Port Policy Division
Ports and Harbours Bureau
MLTM
Japan

Dr. Kwang-Woo Cho
KEI
RO Korea

Dr. Rosa T. Perez
Sr. Research Fellow
The Manila Observatory
Philippines

Dr. Won-Tae Shin
Chief Executive Officer
Global Ocean Inc.
RO Korea

Ms. Nancy Bermas
Sr. Country Programme Manager
PEMSEA Resource Facility
Philippines