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

Special Workshops

Green Ports: Gateway to a Blue Economy

CO-CONVENING AGENCIES:

The Yeosu Project and Expo 2012 Yeosu Korea

Korea International Cooperation Agency

ASEAN-GIZ Sustainable Port Development in the ASEAN Region

Chair: **Ms. Lawan Oungkiros**
ASEAN Ports Association (APA), Thailand

Global Environment Facility

United Nations Development Programme

United Nations **Office for Project** Services

Partnerships in Environmental Management for the Seas of East Asia

Ministry of Land, Transport and Maritime Affairs

City Government of Changwon, RO Korea

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

PROCEEDINGS OF THE SPECIAL WORKSHOP ON GREEN PORTS: GATEWAY TO BLUE ECONOMY

9 July 2012
2:00 pm – 6:30 pm

Co-convening Agencies:
The Yeosu Project and Expo 2012 Yeosu Korea;
Korea International Cooperation Agency (KOICA); and
ASEAN-GIZ Sustainable Port Development in the ASEAN Region

Chair:
Ms. Lawan Oungkiros, Chair, ASEAN Ports Association (APA), Thailand

1. INTRODUCTION

1.1. The 4th East Asian Seas (EAS) Congress, co-organized by the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), the Ministry of Land, Transport and Maritime Affairs (MLTM) and the City Government of Changwon, was held at the Changwon Exhibition Convention Center 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 addressed the new opportunities for the ocean economy of East Asia, the range of partnerships that have developed and are required in order 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 — policymakers, resource and economic managers, business professionals, scientists, members of the academe, local and international nongovernmental organization (NGOs), youth and community representatives, and other members of civil society from within and outside the East Asian Seas region — participated in the Congress.

1.3. Five major subthemes comprised the International Conference: (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 Management; (4) Good Governance, Good

Business; and (5) Meeting Institutional and Individual Skills and Capacities for Integrated Coastal and Ocean Governance.

1.4. The Special Workshop on Green Ports: Gateway to Blue Economy highlighted new initiatives by international and regional organizations, port authorities and port operators to implement safety, health and environmental programs/controls in the port to support the adoption of relevant convention, codes and standards for safety, health and environment. Current initiatives of the ports in the region, in particular, those that have developed and implemented Port, Safety, Health and Environmental Management System (PSHEMS), were likewise examined taking into consideration their overall role as gateways to a Blue Economy.

1.5. Ports and harbours serve as the center of economic development and activity and as the gateway to domestic, regional and international markets. As such, the port industry's contribution to economic growth and sustainable development in the East Asian Seas region is a growing concern that needs to be examined from time to time. The ultimate goal of the workshop was to develop a plan of action for the adoption of a safety, health and environmental management system code (the PSHEM Code) as a national program for safety, health and environment in the ports in the East Asian Seas region.

1.6. **Mr. Renato Cardinal**, Programme Officer for Partnership Applications of PEMSEA, welcomed the participants and acknowledged the support of the co-convenors of the special workshop, namely, the Yeosu Project and Expo 2012 Yeosu Korea, the German Technical Cooperation (GIZ), and the Korea International Cooperation Agency (KOICA).

1.7. **Ms. Lawan Oungkiros,** Chair of the ASEAN Ports Association (APA), gave the opening remarks. She stressed the need for an effective management system for operational activities and safety, health and environmental (SHE) concerns. She emphasized the role of ports in sustainable development and discussed the initiatives of various ports in the region, in particular, those that have implemented the PSHEMS. Ms. Oungkiros highlighted the importance of developing a plan of action that would improve SHE governance in the region. Ms. Oungkiros then discussed the workshop aims as follows:

- To discuss new initiatives by international organizations to implement SHE programs/controls in the port to support the adoption of relevant conventions, codes and standard for safety, health and environment.
- To highlight the current initiatives of the ports in the region in the implementation of safety, health and environmental management using the PSHEM Code as framework.
- To develop a plan of action for the adoption of a safety, health and environmental management system code (the PSHEM Code) as a national program for safety, health and environment in the ports in the East Asian Seas region.

2. SESSION 1: NEW INITIATIVES/PROGRAMS: PORTS FOR A GREEN ECONOMY IN A BLUE WORLD

2.1. **Mr. Susumu Naruse**, Secretary General of the Japan-based International Association of Ports and Harbours (IAPH) set up the overall tone of the workshop by giving the keynote presentation entitled "Economy, Climate Change and the Port Industry." Mr. Naruse expounded on the

importance of seaports in promoting and facilitating world trade. With global trade steadily expanding, 90 percent of which is served by maritime transport, the expected increase in container volume means more threats on safety, security, health and the environment. In addition, global warming is making ports more and more vulnerable to sea level rise and intensification of storms.

2.2. Mr. Naruse explained the mandate and functions of the IAPH and its role in facilitating collaboration between its nearly 200 members, most of which are port authorities. IAPH promotes the interests of ports worldwide through strong member relationships, collaboration and information-sharing that helps resolve common issues, advance sustainable practices and continually improve ports services to the maritime industries. He noted that environmental issues are now high on the agenda of IAPH.

2.3. The World Ports Climate Initiative (WCPI) was created under the umbrella of the IAPH in 2008. The program works primarily on air quality issues and global warming. It has initiated eight (8) major projects, namely:

- Air quality and Green House Gas Emission Tool Box
- Carbon Footprinting for Ports
- On Shore Power Supply
- Intermodal Transport
- Sustainable Lease Agreement Template
- Cargo-handling Equipment
- Environmental Ship Index (ESI) and
- Liquefied Natural Gas fuelled Vessels and Ports.

2.4. Mr. Naruse noted that the ESI, which is a measure for environmental performance, is now successfully operating with an increase in participating ports and more than 700 ships. Moreover, IAPH is also studying adaptation measures against climate change.

2.5. In conclusion, Mr. Naruse underscored the importance of ports to the economies of the East Asian seas region, mitigating climate change and moving towards a blue economy. IAPH has played a key role to ensure that these concerns are being addressed, aspiring to see more ports and organizations join IAPH in fighting against global warming.

2.6. **Ms. Lawan Oungkiros** presented her paper on the “Impacts of Climate Change to the Port Industry.” She noted that according to a United Nations Commission on Trade and Development (UNCTAD) report, the world economic situation has brightened in 2010 and recorded a positive turnaround in trade volumes, especially in the dry bulk and container segments. In particular, the volume of cargo throughputs of major ASEAN countries increased from 54.8 million TEUs in 2006 to 72.9 million TEUs in 2010. Total world throughput, on the other hand, increased from 443.3 million TEUs in 2006 to 503.5 million TEUs in 2010. Thus, the increase in the share of the ASEAN region to the world total TEUs throughput increased from 12.6 percent in 2006 to 14.5 percent in 2010.

2.7. Ms. Oungkiros stated that while ports are always at risk from the impact of climate change and are likely to be directly and indirectly affected by rising sea levels, rising temperatures, storms,

floods and so on; ports operations are also significantly contributing to environmental problems, including water, air, soil and noise pollution. Furthermore, in the port compound and along the transport chain, there are also activities that cause further environmental impacts such as trucking, industrial manufacturing, storage of hazardous material, waste dumping, etc.

2.8. After giving a general background on climate change and its relationship, Ms. Oungkiros discussed the role of the ASEAN Ports Association (APA) and ASEAN ports in handling the impacts of climate change. The main objective of APA is to build a strong foundation for regional cooperation among ports in the area and to provide a venue for member ports to meet and share experiences, exchange information, harmonize trade practices, and promote/facilitate trade. The association believes that in order to achieve sustainable development, environmental impacts, in particular, climate change effects, should be of primary consideration in addressing economic and social needs.

2.9. The following are some of the environmental projects undertaken by APA:

- Courses on “Mitigating Impacts of Climate Change in the Port Industry” and on the “Challenges of Climate Change to Port Industries” conducted during the Human Resource Development (HRD) seminars held in the Philippines and Brunei Darussalam for APA members in 2010.

- Implementation of the ASEAN/GIZ Sustainable Ports Development (SPD) in the ASEAN Region.

- Inclusion of “Reports on Green Port Initiatives” into the agenda of APA’s annual meetings.

- Pursuant to the World Port Climate Initiative (WPCI) launched in 2008, the Port Authority of Thailand, Pelindo 1 in Indonesia and Singapore are among the fifty-nine ports that have committed to reduce their greenhouse gases. Some notable initiatives taken by APA include reduction of GHG emissions from port operations (energy conservation, use of green power) and emission inventories for seven ASEAN ports in five countries (Thailand, Cambodia, Indonesia, Malaysia and the Philippines).

2.10. Ms. Oungkiros noted the *Maritime Singapore Green Initiative* of the Maritime and Port Authority (MPA) of Singapore, which is a comprehensive initiative comprising of three programs — Green Ship, Green Port and Green Technology, briefly described as follows:

- Under the Green Ship Program, targeted at Singapore-flagged ships, the MPA will provide incentives to ship owners who adopt energy-efficient ship designs that reduce fuel consumption and carbon dioxide emissions. Ships which go beyond the requirements of IMO’s Energy Efficiency Design Index will enjoy a 50 percent reduction of Initial Registration Fees and a 20 percent rebate on Annual Tonnage Tax.

- The Green Port Program is aimed at encouraging ocean-going ships calling at the Port of Singapore to reduce the emission of pollutants like sulphur oxides and nitrogen oxides. Ships that use type-approved abatement/scrubber technology or burn clean fuels with

low sulphur content beyond MARPOL requirements within the port can enjoy a 15 percent reduction on port dues payable.

- The Green Technology Program aims to encourage Singaporean maritime companies to develop and adopt green technologies through co-funding of up to half of qualifying costs. For a start, MPA will set aside S$ 25 million (US$ 19.9 million) from the Maritime Innovation and Technology Fund for this programme. If response is good, the MPA says it will set aside another S$25 million in funding. In 2011, the MPA pledged to invest up to S$ 100 million over the next five years in the Maritime Singapore Green Initiative. The MPA was recently awarded "Best Seaport in Asia and Best Green Service Provider Seaport."

2.11. In conclusion, Ms. Oungkiros noted that green ports in ASEAN are still at its early stage of development. She added that ASEAN ports are moving on the right track and its members will work together with port communities to ensure that in every business process of port operations, the impacts of climate change will be given utmost priority.

3. SESSION 2: ON THE GROUND ACTION ON SUSTAINABLE PORTS IN THE SEAS OF EAST ASIA

3.1. **Ms. Franca Sprong,** Team Leader, ASEAN-GIZ Sustainable Port Development in the ASEAN Region, made two presentations on the port projects being implemented by the GIZ.

3.2. Her first presentation was on "Sustainable Ports Development (SPD) Program in the ASEAN Region." To be implemented from 2009 to 2015, the overall objectives of the SPD program are to establish PSHEMS in six ports in the region in line with international standards, undertake environmental impacts and reduce the emissions of the port activities by 20 percent, and reduce the accident rate of participating ports by 20 percent. Participating ports include Iloilo and Cagayan de Oro in the Philippines, Bangkok and Laem Chabang in Thailand, Sihanoukville and Phnom Penh in Cambodia, Saigon Port in Vietnam, Tanjung Priok in Indonesia and Sabah Ports and Johor Port in Malaysia. All in all, the selected ports have improved the quality and efficiency of their SHE systems.

3.3. The SPD program has resulted to the following beneficial outcomes:

- Contributed to the improvement of the working conditions and welfare of port personnel and the quality of life in the cities surrounding the ports;
- Improved the competitiveness and attractiveness of ASEAN ports and mainstreamed the environmental issues in ports and the transport ministries;
- Produced baseline data on SHE management of partner ports;
- Remarkable improvement in the capacities and practices of partner ports;

- Produced emission inventories in seven ports, the information from these inventories is now being used as inputs for further activities;
- Improved port regulation in Laem Chabang Port;
- Improved traffic management in Bangkok Port;
- Improved waste management for selected ports; and
- Established SHE units in certain ports.

3.4. Ms. Sprong apprised the workshop participants of the PSHEMS initiatives in selected ports in the ASEAN region. She noted that Bangkok Port has expanded the scope of their PSHEMS, Laem Chabang Port is preparing for the renewal of their recognition and the ports of Sihanoukville, Iloilo, Cagayan de Oro, Phnom Penh are currently developing their PSHEMS. The key factors affecting PSHEMS development in the ports are management commitment, setting up of the PSHEMS Core Team and providing support for its functions, assigning sufficient manpower for the tasks required, facilitating the understanding of the Management System approach and its benefits, systematic process analysis, hazard identification and support the planning of PSHEMS steps (priorities, milestones, decision-taking).

3.5. In wrapping up her first presentation, Ms. Sprong commented that the beauty of the PSHEMS is that it provides the complete picture as it is an integrated management system.

3.6. The second presentation from Ms. Sprong was on “Waste Management in ASEAN Ports.” She started her presentation by raising awareness on some of the wastes from ships, such as cargo residues, oily water, sewage, antifouling paint, ballast water and solid waste. She noted that the annual marine pollution from oil discharges range from 0.21 to 1.02 million tons from shipping, with the best estimate of 0.61 million tons.

3.7. Marine pollution from solid wastes in oceans is making the oceans a global garbage can with 8 million items of marine litter (solid waste) entering the oceans and seas every day. Moreover, 5.5 million items thrown overboard every day from commercial ships, including 4.8 million metal containers, 640,000 plastic containers and 300,000 glass containers. In effect, there is three times more garbage thrown into the ocean each year than the total fish harvested. In 2008, marine debris was estimated to have directly cost the 21 Asia-Pacific Economic Cooperation (APEC) member economies approximately US$ 1.265 billion.

3.8. Ms. Sprong opined that what can be arranged at the regional level are having an in-direct fee system (economic incentives), information on the availability of a Port Reception Facility, obligatory delivery of waste, notification of delivery and port waste management plans for each port. She added that a regional approach provides a level playing field and reduces the incentive for dumping as there are no costs incentives, there is adequate information and there are increased availability of reception facilities.

3.9. In conclusion, Ms. Sprong noted that there is room for improvement with regard to waste management in ASEAN ports. She has acknowledged the value and usefulness of the integrated procedures in PSHEMS and the benefits of a regional approach.

4. SESSION 3: INTEGRATED MANAGEMENT SYSTEM IMPLEMENTATION FRAMEWORK FOR PORT SUSTAINABLE DEVELOPMENT

4.1. Three presentations on the successful development and implementation of PSHEMS in Bangkok Port and Laem Chabang Port in Thailand and Port of Iloilo in the Philippines validated the value and usefulness of the PEMSEA program on PSHEMS.

4.2. **Ms. Aunporn Poopetch,** General Administrative Officer, Bangkok Port, Thailand, recounted the inspiring transformation of port personnel in Bangkok Port and the benefits that PSHEMS has brought to the port's handling of Dangerous Goods.

4.3. Bangkok Port is one of the three ports that have attained PSHEMS Recognition from PEMSEA. The steps it has undertaken in developing its PSHEMS include the development of a working group, review of applicable international conventions, intensive trainings, formation of an internal audit team, PSHEMS documentation and conduct of internal audit. The benefits Bangkok Port has gained from the development and implementation of PSHEMS has demonstrated the effectiveness of PEMSEA's methods in PSHEMS development and implementation. Bangkok Port's SHE programs and corporate social responsibility (CSR) programs illustrated how a concerted effort in identifying environmental aspects, safety and health hazards can lead to a more focused development of relevant in-house and community development projects.

4.4. Ms. Poopetch identified the major benefits resulting from its PSHEMS development and implementation, including the institutionalization of an SHE Department in the port organization, notable increase in the appreciation of the value of PSHEMS specially at the top and middle management levels, the strengthening of the control procedures and safeguards for Dangerous Goods handling and the overall improvement in the physical infrastructure in the port area.

4.5. However, despite the initial success of the PSHEMS project, Bangkok Port is still facing a number of challenges that it needs to tackle in order to further improve its port operations. Raising the awareness and appreciation levels of port personnel on the importance of PSHEMS is one key challenge. Bangkok Port aims to make port personnel (operational level) have the same attitudes as the management level with regard to SHE matters. The port will also improve its recording, reporting and accident prevention procedures to be sure that the concerned personnel would be able to identify the root causes of accidents, understand the preventive approach, and the need and benefits for proper data collection.

4.6. Ms. Poopetch shared some valuable lessons learned in Bangkok Port's experience in the development and implementation of its PSHEMS. These include the following pointers:

- Securing top management support is key to the sustainability of PSHEMS.

- The competency of personnel can be addressed through intensive and numerous trainings.
- Continual improvement through the internal audit and management review processes are essential components for a management system to remain effective.
- To remain relevant and competitive, ports implementing PSHEMS must continually adopt its policies and procedures to applicable national and international regulations and revise existing rules and regulations accordingly.
- Good PSHEMS policy will give a clear direction toward the attainment of its targets and objectives.
- Building up a culture of safety among port workers is very important.
- Cooperation and coordination among different units concerned has proved to be an effective way in solving problems.
- Limiting the scope of work to a small manageable area but having the greatest risk has proved to be a good strategy.
- Technical assistance from PEMSEA provided a good head start.

4.7. In closing, Ms. Poopetch remarked that Bangkok Port took early action to implement PSHEMS and is confident that with this integrated management system and good support and cooperation from all agencies concerned, Bangkok Port can demonstrate high quality for the execution of its safety, health and environmental responsibility. She concluded that the implementation of PSHEMS has led to valuable economic, social and environmental benefits for Bangkok Port.

4.8. **Mr. Thongchai Thammapredee,** Director, Port Operations Division, Laem Chabang Port, gave a presentation on "Safety, Health, and Environmental Improvement Programs as part of PSHEMS Implementation of Laem Chabang Port," elaborating on the various SHE programs of Laem Chabang Port that increased the green coverage of the port area, improved governance, reduced carbon footprint and ensured compliance to international regulations, using the PSHEMS as an integrated management framework.

4.9. Laem Chabang Port is under the supervision of the Port Authority of Thailand (PAT) and is the most important deep sea port of Thailand, sharing 70 percent of sea transport volume. The Thai government is promoting Laem Chabang Port as the main trading gateway of Indochina. With its strategic location, the port can support regional and international mega-projects such as the interconnecting route to China and India, trading routes in the Greater Mekong Subregion and the North-South Economic Corridor.

4.10. Mr. Thammapredee expounded on the following challenges in SHE in Laem Chabang Port:

- With nearly five million trips annually, the massive traffic volume of container trucks have brought air pollution, increasing accidents and economic loss (due to unnecessary traffic consumption during traffic congestion).

- There is no adequate central management, registration and notification for the collection of waste from ships and there is a lack of clear procedures, regulation and transparency fees for collecting waste from ships.

- High volume of greenhouse gases generated by its high electricity and fuel consumption. In 2010 for instance, electric consumption produced an estimated 35,590 tons of carbon dioxide.

- With more than one million tons of dangerous goods handled every year, the safety and health of Laem Chabang Port workers are likewise in constant threat.

- There are no port regulations dealing with an external force. In the past, Laem Chabang Port has experienced dealing with political protesters who wanted to interfere with port operations as a show of protest against the incumbent government. In addition, seaports are now known to be one of the places that are vulnerable to the risk of terrorism and since Laem Chabang Port has never issued port regulations similar to that of international ports, this must be one of the most important challenges on port safety, health, environment and security.

4.11. To address these problems, PAT signed a Memorandum of Agreement (MOA) with PEMSEA on October 7, 2008, to establish and implement a PSHEMS at the Laem Chabang Port. A series of trainings was then given by PEMSEA and participated in by port officers, Customs, Marine Department, private terminal operators and DG warehouse operator on the following topics:

- Phase 1: Understanding PSHEMS and conduct of hazard identification (October – December 2008)
- Phase 2: Documentation of the PSHEMS (January – February 2009)
- Phase 3: Implementing and Monitoring (March – August 2009).
- Phase 4: PSHEMS internal auditing (May – July 2009)
- Phase 5: Training and Conducting on continual improvement of the PSHEMS (July – November 2009).

4.12. With the PSHEMS documentation in place, the stage one Audit was conducted by PEMSEA from August 30 to September 2, 2009. PEMSEA's stage two audit was conducted from November 2-6, 2009. Then, the Certificate of Recognition of PSHEMS was given on November 24, 2009 during the 3rd East Asian Seas (EAS) Congress in Manila, Philippines.

4.13. Mr. Thamapredee moved on to discuss the different SHE programs initiated by Laem Chabang Port in line with its PSHEMS implementation.

- Under the GIZ-supported Sustainable Port Development (SPD) program, Laem Chabang Port has developed port regulations on waste management and produced a Port Waste Management manual. In May 2012, GIZ has developed a road map of Port Waste Management Implementation Plan for Laem Chabang Port, which details a six-month work program to address the identified areas for improvement in port waste management.

- To address its carbon emissions of more than 35,590 tons per year, a Green Port Program has been initiated in 2010. Laem Chabang has decided to select the Wind Farm Power Plant as a pilot project with an aim of applying more proportion of green energy to

the port's total electricity consumption. The wind turbine system is expected to generate electric power at an average of 2.5 million unit/year, which can also be expected to help decrease carbon dioxide emissions to the atmosphere at about 1.4 million tons of carbon dioxide per year.

- The Low Carbon Port Program aims to address carbon dioxide and other GHG emissions in Laem Chabang Port from two major sources, cargo handling equipment operated by terminal operators and from ships calling the port. The program encourages all private terminal operators in the port to switch from diesel fuel to the use of electricity in operating cargo handling equipment. Laem Chabang Port will likewise apply more electric supply for ships berthing at the quay wall.

- The Port Air Emission Inventories Assessment Program, with technical assistance from GIZ, will produce an Emission Inventory Report by the end of 2012.

- In cooperation with the GIZ, Laem Chabang Port has currently developed the Laem Chabang Port Ordinance (Port By-Laws) which also covers SHE regulations. A draft of the Port By-Laws has now been completed covering port regulations on traffic management, port navigation, idle traffic, miscellaneous regulation, safety, Dangerous Goods, Waste disposal and business statistics, electronic data processing/data protection.

4.14. After discussing the various SHE programs undertaken by Laem Chabang Port, Mr. Thammapredee gladly reported on their positive results, noting the effective application of PSHEMS as Laem Chabang Port's integrated management system.

- Results of ambient air quality examined from 2008-2010 showed that total suspended particles, carbon monoxide, sulfur dioxide, total hydrocarbon, and nitrogen dioxide in the port area and nearby communities are within the acceptable standards issued by the Department of Pollution Control, Ministry of Natural Resource and Environment.

- With regard to seawater, biological and sediment monitoring, samples collected from 11 stations have shown that in spite of the fact that the port has been operating for more than 20 years already, environmental quality in the port is still in good condition.

4.15. In closing, Mr. Thammapredee noted that since the adoption of PSHEMS as a part of the integrated management system of LCP, the port SHE management has been improved by regularly implementing and doing the internal audit in order to conform to the PSHEM Code. He reiterated that the environmental quality indicators have also been within the acceptable government standards. However, many aspects in relation to the PSHEMS such as the port regulations, air emission inventory, sustainable waste management system, green energy project, modifying of handling equipment, etc., are still in the process of development. He remarked that it is the hope of Laem Chabang Port management that when these programs have been completed and put into action in the near future, more positive results from the PSHEM initiative would be generated.

4.16. **Engr. Constante Farinas**, from the Philippine Ports Authority (PPA), gave a presentation on the "Development of PSHEMS at the Port of Iloilo." To start with, he gave a general background on the PPA, describing its mandate, mission and vision. He enumerated on the priority objectives of the PPA, which include the complete modernization of at least 10 ports by 2010.

4.17. Mr. Farinas noted that PPA, PEMSEA and GIZ have entered into an MOA for the "Development and Implementation of PSHEMS in the Port of Iloilo" on 17 August 2010. Immediately thereafter, the management of the Port of Iloilo has undertaken the following steps to initiate the development of its PSHEMS:

- Formation of a PSHEMS steering committee to oversee the PSHEMS project.
- Designation of two management representatives (MR), the PPA MR for Top Management and the PMO MR for the Port of Iloilo.
- Establishment of a PSHEMS Core Team and creation and allocation of a budget for the PSHEMS project.

4.18. Similar to other ports that have undertaken PSHEMS development and implementation, PPA underwent several phases in PSHEMS Development and Implementation:

- During Phase 1: Understanding of PSHEMS and Initial Status Review, the port conducted a detailed Gap Analysis to assess the present state of safety, health and environment in the port. It has likewise defined six (6) key target areas as PSHEMS scope and coverage, listed 652 hazards from key target areas and established a Register of Identified Hazards and Concerns.
- For Phase 2: Strategic Planning, the port has developed a PSHEMS Policy Statement, established a Register of Risk Hazard, Assessment and Control Measures, established a Register of Objectives, Targets and Improvement Programs for Safety, Health and Environment and developed a Regulatory Register.
- Phase 3: System Development and Documentation entailed the establishment of a PSHEMS Business Process. The port has likewise produced a PSHEMS Port Governance Policy Manual, a PSHEMS Port Operator Policy Manual and 63 PSHEMS Port Procedures in six areas, namely, Terminal Operations, Harbor Operations, Resource Management, Engineering Services, Port Security, and Safety, Health and Environmental Services.
- During Phase 4: Implementation and Monitoring of the PSHEMS, the port launched the PSHEMS implementation on 25 October 2011, conducted PSHEMS General Awareness Training to port-users, port employees and port workers and started monitoring PSHEMS implementation since October 25, 2011.
- For Phase 5: Internal Audit, the port has conducted the Internal Audit on the PSHEMS Manual by PPA Internal Control Department (ICD) last February 6-24, 2012. Finally, for

Phase 6: Management Review and Continual Improvement, a PSHEMS Management Review was conducted on 13 June 2012 to complete the full cycle of PSHEMS development and implementation.

4.19. Mr. Farinas noted that the overall benefits to the majority of port stakeholders of PSHEMS as follows:

- Raised safety, health and environmental awareness;
- Observed cleanliness in respective areas of operations;
- Heightened consciousness for the importance of wearing personal protection equipment to protect workers from operational hazards;
- Improved road traffic;
- Complied with the fire safety requirements of the port;
- Implemented intervention that improved water quality after the testing and monitoring drainage effluents, ground source water and marine water;
- Realized the importance of minimizing air pollution after the conduct of an air emission inventory;
- Improved monitoring in the proper handling of solid waste generated by ships and that of port's daily operations;
- Improved transport of cargoes;
- Developed health programs that validate prevalent and recurring illnesses related to port operations; and
- Implemented emergency response trainings.

4.20. With regard to safety performance, Mr. Farinas showed a graph indicating that in two consecutive quarters, 100 percent of port users in 12 different workplaces in the Iloilo Commercial Port Complex (ICPC) have an average compliance ranging between satisfactory (3) to nearly excellent (5), which indicates PMO's observance and implementation of the PSHEMS.

4.21. With regard to water and soil pollution, water quality test is required in the port drainage to assess its condition. PMO Iloilo is waiting for fund allotment to cover the water testing activity. At least three (3) sample sites are identified subject for testing. Drainage system de-clogging is presently being implemented at the ICPC. About 927 lineal meters of drainage system or 60 percent of the total drainage system was cleared from silt and solid waste to ensure continuous flow of water and removal of solid waste.

4.22. PPA has likewise entered into an MOA with PEMSEA and GIZ, on 14 October 2011, on the development and implementation of a PSHEM in Cagayan de Oro. So far, two PEMSEA trainings have already been conducted:

- Phase 1 "Understanding the PSHEMS and Initial Status Review Workshop", conducted from 5 to 9 December 2011
- Phase 2 "Strategic Planning Workshop," conducted from 5-9 March 2012

4.23. The scope of PSHEMS in Cagayan de Oro covers the management of Containerized Cargo Handling activities within the baseport of Cagayan de Oro. The PMO has committed to

continually improve the management of containerized cargo handling activities, promote safety and health of port workers, users and stakeholders from work-related accidents and to protect the environment from pollution and degradation.

4.24. In closing, Mr. Farinas noted the outlook of PSHEMS at the Port of Iloilo and PPA as a whole. After recognition of PSHEMS at the Port of Iloilo by PEMSEA, at planned intervals, the organization's top management shall review the overall effectiveness, continuing suitability and adequacy of the PSHEMS. The review shall include the following:

- Results of the external audit and evaluation of compliance with legal and other requirements;
- Communication from external parties including complaints;
- The environmental performance of the organization;
- The extent to which PSHEMS policy, objectives, targets and programs have been met; and
- Status of corrective and preventive actions.

5. SESSION 4: PSHEM CODE AND THE PSHEM RECOGNITION SYSTEM

5.1. Mr. Cardinal made a presentation on the PSHEM Code, the PSHEM Recognition System and the PSHEM Governance System. He noted that PEMSEA, in close co-operation with the GEF, UNDP, IMO and other international organizations having vested interests in ports and their operations, and nongovernmental organizations representing the port industry, embarked on a project to provide assistance to ports within the East Asian Seas (EAS) region, in establishing a PSHEM Code and Recognition System. For the past six years, PEMSEA has been actively engaged in the development of a Port Safety, Health and Environmental Management (PSHEM) Code and the demonstration of the PSHEM System (PSHEMS) through the implementation of a safety, health and environmental management system for the port industry.

5.2. The PSHEM Code aims to serve as a standard for voluntary use by port authorities and those companies operating in the port, to provide them with a systematic approach for implementing a PSHEMS. The PSHEM Code is structured using the PSHEMS Continual improvement Process and the key elements of recognized international standards, namely ISO 9001 (Quality Management), ISO 14001 (Environmental Management), and OHSAS 18001 (Occupational Health and Safety).

5.3. The PSHEM Code and the PSHEMS Development and Implementation Guideline were tested at the Port of Tanjung Pelepas (Malaysia), Bangkok Port and Laem Chabang Port (Thailand) and underwent an expert review involving the International Maritime Organization (IMO), London; International Association of Ports and Harbours (IAPH), Japan; International Cargo Handling and Coordination Association (ICHCA); Ministry of Transport, Malaysia; Port Authority of Thailand (PAT), Bangkok, Thailand and the German International Cooperation, ASEAN-GIZ Project on Sustainable Port Development in the ASEAN Region. In addition, the

International Organization for Standardization (ISO) granted permission to PEMSEA for the use of ISO Standards clauses in the PSHEM Code and Guidelines.

5.4. In October 2011, the PSHEM Code was formally adopted by PEMSEA's Executive Committee and its Governing Body, the East Asian Seas (EAS) Partnership Council as a PEMSEA-certified document.

5.5. In December 2011, the Organizing Committee for Expo 2012 Yeosu Korea, KOICA and PEMSEA signed an agreement to implement the "Yeosu-PEMSEA Project on Port Safety, Health and Environmental Management System." The Yeosu-supported project involves the adoption and launching of the PSHEM Code as a standard for voluntary use by port authorities and those companies operating in ports in the East Asian region; as well as putting the PSHEMS Recognition System into full operation.

5.6. Mr. Cardinal explained that the PSHEM Code and PSHEM System contribute to scaling up the implementation of the SDS-SEA within the context of national ICM programs. This is to be achieved by promoting and adopting the PSHEM Code by national governments, port authorities and port operators as the regional standard for safety, health and environmental management in ports.

5.7. Mr. Cardinal proceeded to discuss the PSHEMS, which is a documented management system developed, implemented and maintained by a *Port Authority* or Port Operator or *any* company operating inside the port to achieve the objectives of the *PSHEM Code*. It is an integrated management system that will improve a port's operational performance through a comprehensive and coordinated approach to safety in port operations, protection of human life, property and the environment.

5.8. Mr. Cardinal noted the six phases in PSHEMS Development and Implementation, which follows the Plan-Do-Check-Act (PDCA) cycle. The phases include an Initial Status Review (Phase 1), Strategic Planning (Phase 2), System Development and Implementation (Phase 3), Implementation and Monitoring (Phase 4), PSHEMS Audit (Phase 5), and Continual Improvement (Phase 6).

5.9. Developing and implementing PSHEMS result to a number of benefits including improved operational business efficiency and cost savings; reduction in accidents and resulting environmental damages; improved system of safety, health and environmental governance to control private terminal operators; improved handling of dangerous cargoes and waste materials; and reduction of safety, health and environmental risk.

5.10. Mr. Cardinal noted that the PSHEMS Recognition System will examine whether the established PSHEMS of the Port meets the requirements of the PSHEM Code and confirms effective implementation of the management system. The PSHEMS Recognition system is structured as a tri-level approach to encourage the Port Authority and/or Operator to strive for excellence through continuous improvement:

- ***Level 1 – Recognition for Compliance of PSHEMS:*** Integrated management system for PSHEMS developed and implemented, compliant with the requirements of PSHEM Code and ISO 14001 and OHSAS 18001 and ISO 9001
- ***Level 2 – Recognition for Proficiency PSHEMS:*** Significant progress in building sound processes achieved, superior results demonstrated
- ***Level 3 – Recognition for Performance Excellence in PSHEMS:*** High level of Excellence in PSHEMS performance achieved.

5.11. PSHEMS recognition can improve the performance of the port and its ability to fulfill international requirements and provide competitive advantage. The Port can also use the developed PSHEMS to gain certification under the well-recognized international standards: ISO 9001, ISO 14001 and OHSAS 18001.

5.12. Mr. Cardinal noted that the planned roll-out of the PSHEM Code and Recognition System project, anticipates a growth in the complexity of managing the PSHEMS project. As such, it must be ensured that proper authorities are looking not just into the administrative tasks of auditing and recognizing ports but also on the formulation of policies and procedures that would govern the core processes of the PSHEMS programme including the maintenance and improvement of the PSHEM Code.

5.13. A number of international ports in the region are starting to implement the PSHEMS. The German International Cooperation (GIZ) is assisting the ASEAN Ports Association (APA) to improve environmental and occupational safety and health management in selected ports of the region. PEMSEA and GIZ are working jointly to develop and implement an integrated systematic approach in accordance with the provisions of the PSHEM Code at the following ports:

- Phnom Penh and Sihanoukville in Cambodia;
- Tanjung Priok and Tanjung Perak in Indonesia;
- Sabah and Johor Ports in Malaysia;
- Cagayan de Oro and Iloilo in the Philippines;
- Bangkok and Laem Chabang in Thailand; and
- Saigon in Vietnam.

5.14. In closing, Mr. Cardinal noted the following actions needed to effectively roll-out the PSHEMS program:

- Establishment of the PSHEM Governing Mechanism;
- Certification of PSHEMS Trainers and Training Institutions;
- Certification of PSHEMS Auditors;
- Establishment of a portfolio of ports/authorities committed to the implementation of the PSHEM Code and Recognition System; and
- Promotion and Advocacy of the PSHEM Code and Recognition System.

6. SESSION 5. OPEN FORUM: SUSTAINABLE PORTS FOR THE OCEAN-BASED BLUE ECONOMY

6.1. **Ms. Melissa Cruz**, facilitated the open discussion that centered on the topic "Way forward adoption of the PSHEM Code as national program." The panel was composed of Mr. Naruse, Ms. Sprong, Ms. Oungkiros and Mr. Ho Kim Lan, Secretary General of Vietnam Seaports Association (VPA).

6.2. On the question of how ports in East Asia are faring in terms of safety, health and environmental management systems, Mr. Ho Kim Lan noted that ports are in varying stages of SHE maturity as some ports have more resources than others.

6.3. Ms. Sprong has noted that as a start, the information on Safety, Health and Environmental management should be disseminated to national ministries overseeing the port operation.

7. CLOSING REMARKS: KOREA AND YEOSU — COMMITMENT TO SUPPORT THE IMPLEMENTATION OF THE PSHEM IN THE EAST ASIAN REGION

7.1. As closing remarks to the Special Workshop, Ms. Choi Ji Won, Researcher, Climate Change Office, Korea International Cooperation Agency (KOICA) gave a presentation on Korea and Yeosu — Commitment to support the implementation of the PSHEM in the East Asian region.

7.2. Ms. Choi explained how KOICA fits in Korea's Official Development Assistance (ODA) system. She noted that KOICA is an implementing organization created in 1991 to manage grant aid and technical cooperation, under the bilateral aid component of the ODA. Under its ODA Roadmap, KOICA plans to establish the Korea ODA platform in 2012. This would entail scaling up Korea's ODA, increasing the portion of grant aid, enhancing aid effectiveness and enhancing public support and awareness. By 2015, KOICA plans to advance Korea's aid program by attaining an ODA/GNI ratio of 0.25 percent and by becoming an established donor with strong public support. These steps are being taken with the ultimate objective of becoming a full donor. The main sectors of Korea's grant program are Education (24.5%); Governance (16.9%); Health (13.7%); Industry and Energy (12%); Agriculture, Forestry and Fisheries (10%); ECT (7%); Disaster relief (6%); and non-classified grants (10%).

7.3. Ms. Choi noted the goals of the Yeosu project, namely, (1) Translating the theme of the Yeosu Declaration and the theme of Expo 2012 Yeosu Korea into action; (2) Bridge the divide between the developed and developing world and building national capacity to meet the challenge of climate hange and its impact on the marine environment; and (3) achieving conservation and sustainable exploitation of the oceanic and coastal resources.

7.4. The Yeosu project has four phases. The first phase had seven projects (two in Vietnam, one in Indonesia, one in the Philippines, and two in South Pacific Islands) that took place from 2010-2011. The second phase was conducted from 2010 to 2011, included one project each in Grenada, Sri Lanka and Tanzania. The third phase, conducted from 2011 to 2012, were projects awarded to various international organizations including UNEP/COBSEA, PEMSEA/PSHEMS, WCPFC, FAO, IOC and IMO/PEMSEA. The fourth phase of the Yeosu

project, which will be conducted from 2012 to 2013, will be follow up projects connected to the first phase of the Yeosu project.

8. CONCLUSION AND RECOMMENDATIONS

8.1. The participants of the Special Workshop on Green Ports: Gateway to a Blue Economy arrived at the following conclusions:

- The value and usefulness of the PSHEMS have been validated by the ports who have successfully developed and implemented PSHEMS (Port of Bangkok, Port of Laem Chabang, Port of Iloilo)
- With the triple bottom line benefits that ports have demonstrated in developing and implementing PSHEMS, the Green Port's workshop has reiterated the need for SHE management in the region and confirmed the need to use the PSHEM Code as the regional framework for safety, health and environmental management in the ports.
- International and regional organizations confirmed the need for the PSHEM Code by supporting sustainable development programs using the PSHEMS as their framework (GIZ, ASEAN Ports Association).
- Now is the right opportunity to roll-out the PSHEM Code in the region with all the acceptance of international organizations on the value of the code and the validation of the different ports that the code provided them with tangible benefits.
- Potential business growth can be realized by using the "business context" for the implementation of safety, health and environmental management.

8.2. In light of the discussions and case presentations, the participants of the special workshop have agreed to undertake the following actions:

- Facilitate the roll-out of PSHEMS by engaging port associations and government ministries overseeing the port industry by developing advocacy programs and initiatives to advance the implementation of PSHEMS in the countries of the region.
- Continue the sharing of best practices in safety, health and environmental management in the region.
- Develop a capacity-building mechanism to support the implementation of PSHEMS in the region (certification of trainers, certification of auditors).
- Ensure the continued relevance of the PSHEM Code and PSHEMS Recognition System by institutionalizing the PSHEM Governance mechanism.
- Roll-out PSHEM advocacy to national agencies overseeing the port industry (i.e., Ministry of Transport) and international/regional organizations and association with concern on port development and operation (APA , IAPH, ICHCA, ILO, IMO).

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Annex 2: Workshop Program

TIME	ACTIVITY/PRESENTATION	
9 July	Welcome Remarks	Chair: Ms. Lawan Oungkiros Chairperson, ASEAN Ports Association (APA), Thailand
Session 1: New initiatives/programs: Ports for a green economy		
1400-1420	Keynote: Economy, climate change and the port industry	Mr. Susumu Naruse Secretary General, International Association of Ports and Harbours (IAPH), Japan
1420-1440	Impacts of Climate Change in the Port Industry	Ms. Lawan Oungkiros Chairperson, ASEAN Ports Association (APA), Thailand
Session 2: On-the-ground action on sustainable ports in the Seas of East Asia		
1440-1510	Sustainable Ports Development Program in the ASEAN	Mrs. Franca Sprong Team Leader, ASEAN-GIZ Sustainable Port Development in the ASEAN Region, Thailand
	Waste management in ASEAN Ports	Mrs. Franca Sprong Team Leader, ASEAN-GIZ Sustainable Port Development in the ASEAN Region, Thailand
Session 3: Integrated management system implementation framework for port sustainable development		
1510-1600	Port presentations – Case studies: Implementation of integrated management system for sustainable development	
	Bangkok Port	Ms. Aunporn Poopetch General Administrative Officer 12, Bangkok Port, Thailand
	Laem Chabang Port	Mr. Thongchai Thammapredee Director, Port Operations Division, Laem Chabang Port, Thailand
	Port of Iloilo	Engr. Constante Farinas Philippine Ports Authority
Session 4: PSHEM Code and PSHEMS Recognition System		
1630-1655	• PSHEM Code • PSHEM Recognition System • PSHEM Governance System	Mr. Renato Cardinal Programme Manager for Partnership Applications, PEMSEA Resource Facility
Session 5: Open Forum: Sustainable ports for the ocean based blue economy		
1655-1755	Open Discussion	Panelists:

	• Way forward adoption of the PSHEM Code as national program	Mr. Susumu Naruse, Secretary General, International Association of Ports and Harbours (IAPH), Japan Ms. Lawan Oungkiros, Chairperson, ASEAN Ports Association (APA), Thailand Mr. Ho Kim Lan, Secretary General, Vietnam Seaports Association (VPA), Vietnam Mrs. Franca Sprong, Team Leader, ASEAN-GIZ Sustainable Port Development in the ASEAN Region, Thailand
1755-1810	Closing Remarks: KOREA and YEOSU – Commitment to support to the implementation of the PSHEM in the East Asian Region	Ms. Choi Ji Won Researcher, Climate Change Office, Korea International Cooperation Agency (KOICA)
1810-1830	Wrap up and conclusions	Chair: Ms. Lawan Oungkiros Chairperson, ASEAN Ports Association (APA), Thailand