



Theme 1

Coastal and Ocean Governance

**WORKSHOP 2:
CONTRIBUTIONS OF MARINE
ECONOMIC SECTORS TO REGIONAL
AND NATIONAL GDP IN AN
UNCERTAIN CLIMATE**



**Partnerships in Environmental Management
for the Seas of East Asia**

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Former National Oceans Advisor
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The East Asian Seas Congress 2009

**“Partnerships at Work: Local Implementation
and Good Practices”**

**Manila, Philippines
23–27 November 2009**



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Workshop 2: Contributions of Marine Economic Sectors to Regional and National GDP in an Uncertain Climate

23 November 2009

Convening Agency:
PEMSEA

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INTRODUCTION BY THE WORKSHOP CHAIR

The economic contribution of marine activities is considered to be an increasingly important part of the economy and international trade within and across East Asian Seas (EAS) countries.

Given the archipelagic nature of the South East Asian economies and the rapid development of coastal and marine areas in the EAS economies, it appears that the approaches to most of the national economic and development plans are still land-based.

How will these marine economic sectors continue to contribute sustainably to regional and national GDPs at these levels, as the impacts of climate change shape the economics of the region in the coming century?

With countries forecasting further development of their marine sectors, the challenging question is not only how countries will achieve their planned objectives, but also how they can ensure that such development will serve as an enabling vehicle for sustainable development, uplifting of the quality of life, addressing the current issues of mitigation and adaptation policies and strategies in response to climate change, and the movement of populations from rural hinterlands to the coasts.

Keynote address:

The Challenges and Benefits of Measuring the Contribution of the Marine Economy in an Uncertain Climate

Dr. Charles Colgan, University of Southern Maine, USA

Dr. Colgan delivered a keynote address by Video. The address was specially prepared for the session and covered the past work on measuring marine economies, particularly the approaches used by the National Ocean Economic Program (NOEP www.oceaneconomics.org) and the challenges of economic uncertainty and climate change impacts on the coastal economy.

SESSION 1: CONTRIBUTION OF THE MARINE SECTORS IN EAST AND SOUTHEAST ASIAN ECONOMIES

The following presentations were made by Congress participants who had contributed to the recent edition of *Tropical Coasts on The Marine Economy in Times of Change*.

- **Malaysia:** Dr. Nazery Khalid, Center for Marine Economics and Industry
This presentation focused on the changes in the South Asia maritime industries sector and their implications for measuring the marine economy.
- **Philippines:** Dr. Romulo A. Virola, Secretary General, National Statistical Coordination Board
The presentation outlined the data available in the Philippines and some of the features, such as a high number of overseas workers in marine industries, which are unique to the Philippines marine economy. Dr Virola could see a core role for national Statistical Agencies in compiling marine economic data and the need for this to be recognised and resourced.
- **RO Korea:** Dr. Chul-Oh Shin, Korea Maritime Institute
Dr. Shin illustrated the usefulness of an Input /output modelling approach to revealing the marine economy and its linkages. Linkage estimates indicate the connectedness of marine industries with land based industries and quantify the benefits of investment in the marine industries for the whole economy.
- **Japan:** Dr. Hiroyuki Nakahara, Research Institute for Ocean Economics, Yokohama National University, Japan
Dr. Nakahara illustrated the Japanese approach to marine category issues and outlined the previous Japanese studies of the marine economy as part of a decade long ocean planning process.
- **PR China:** Prof. Liu Rongzi, China Institute of Marine Affairs, State Oceanic Administration
The presentation displayed a short overview of the comprehensive studies undertaken by the China Marine Statistical Division which have completed national measurement of the marine economy as part of their national planning during the past 10 years.

- **Indonesia:** Dr. Agus Heri Purnomo, Center of Marine and Fisheries Social Economic Research, Ministry of Maritime Affairs and Fisheries (MOMAF), Indonesia

This study illustrated how an Input/ Output model could estimate the size of the marine economy and its component sectors in Indonesia.

The following presenters were unable to attend the EAS Congress workshop:

- **Thailand:** Dr. Cherdchinda Chotiyaputta, Department of Marine and Coastal Resources, Ministry of Natural Resources and Environment (MONRE), Thailand.
- **Vietnam:** Mr. Nguyen Khac Duc, Vietnam Administration of Seas and Islands.

Facilitated discussion

Since the speakers had prepared formal marine economic reviews, which have been published in the recent edition of *Tropical Coasts*, July 2009, the short PowerPoint presentations were to set the scene for a discussion across the session participants on some important issues, which the facilitator has identified from the work of the participants.

What have the studies got in Common?

Discussions indicated that the information for oil and gas, fisheries and aquaculture and shipping/marine transport are generally available in most economies. However additional data on government expenditure and services, construction and marine tourism are less consistent in their availability and composition.

What are the challenges in defining and measuring the marine sector contribution?

Discussions indicated that the availability of data and the communication of what is included, or not included, in estimates should be made much clearer. It takes time to determine many of these data consistency issues. Malaysia indicated that the problem in ports and shipping information, for example, lies in the definition of throughput and destination of ships. The tourism is another sector where disaggregation to marine-related sub-categories needs further work. Similarly information on marine construction in China cannot be obtained from their national accounts directly.

Mr. Sam Baird confirmed that recent Canadian studies have sought to identify category composition, assessment of data quality, and which categories are included and excluded. He also recommended other possible sources of data: industry surveys, environmental impact assessments and other supporting sources. Japan and Indonesia cited the usefulness of input-output (I-O) tables to avoid double counting. However, Mr. Baird briefly discussed the limitations which arise from I-O tables being static for a particular year, and usually only updated every five years or so.

Who are the users of this information?

Policymakers, planners and managers at the national and sectoral levels need this information for direction to guide the actions and management interventions that need to be taken: to further develop the marine sectors or continue supporting them; to plan and implement measures to mitigate environmental impacts (loss of habitats; health costs, etc.) resulting from these sectors; to plan and implement climate change mitigation and adaptation measures.

SESSION 2: TOWARDS A COMMON FRAMEWORK FOR MEASURING THE MARINE ECONOMY

Presentation

The APEC Framework for Measuring the Marine Economy, Prof. Alistair McIlgorm, PEMSEA

This presentation briefly outlined the origin of the need to develop a series of consistent categories for measuring marine economies. A report was followed by the APEC Marine Resource Conservation Working Group, Marine Economy project and the Easter Island Workshop of economic experts in 2004. From the workshop the participants agreed on nine categories of industry activity that should be a guideline for future studies in the APEC economies.

Facilitated discussion

Question - How does each national study compare to the APEC profile?

The APEC marine economy category profile was pre-circulated to speakers/participants as a guide for the development of their *Tropical Coasts* article. Major categories, such as fisheries and aquaculture, had most in common. Some issues were raised about oil and gas (extraction value versus input manufacturing), ports and shipping (marine transport and own account issues). Marine tourism was noted to vary and manufacturing and marine construction had potential differences.

Question - How can the marine economy profiles be more complete?

The APEC categories provide a common framework, but there are different issues that need to be clarified within these headings. Comparisons of more detailed category and national account codes would be useful.

Question - What steps are needed to standardize marine economic profiling across the region?

It would take time to examine each category and national account codes, but could be done as a collaborative project. Initially the large-scale categories as proposed by APEC could be used and adapted. For example: Mr. Baird proposed that a reduced set of categories may capture the majority of the economic benefits generated by the marine sector. It is better to refine the methodology to have good quality information for the key sectors than to spread oneself too thin in covering too many sectors with poor data quality. One should remain mindful that the following five sectors probably account for greater than 90% of the total value in most nations: Fisheries and Aquaculture; Marine Transportation; Marine Tourism; Offshore Oil and Gas; and Government Services [Including National Defence].

SESSION 3: HOW CAN MARINE ECONOMIC VALUATION CONTRIBUTE TO NATIONAL POLICY?

Presentations

How Has Measuring the Marine Economy Helped Canada?

Mr. Sam Baird, Formerly with Fisheries and Oceans, Canada

The presentation outlines the past studies made by Canadian researchers at a national level and alluded to a significant number of past sub-national studies. The latest national study in 2008 has revealed the need for estimates of sector values to stipulate the quality of data and estimate the degree of unreported data. This issue of what we are measuring and what is not being measured is critical for policymaking.

The Marine Economy and Environmental Values

Ms. Maria Corazon Ebarvia, PEMSEA

This study examined market and non-market economic values in the marine arena. A range of different values can be estimated. Past research on environment and natural resource accounting as part of the national income accounts (GDP) in the Philippines and Indonesia, and the economic and environmental values associated with habitats and marine areas in the Malacca Straits and Manila Bay Area were presented. The approach used by PEMSEA to value marine economies can be expanded to further include environmental values. Applications include integrated land- and sea-use plan and zoning; investment plans; contingency plans for oil spills and other disasters; climate change mitigation and climate-proofing and adaptation measures.

How Can Valuing the Marine Economy Contribute to Policy and Managing National Wealth in Uncertain Times?

Prof. Alistair McIlgorm, PEMSEA

The challenges of evaluating the impacts of the global financial crisis on the marine economy were illustrated. Impacts range from reduction in sales of high-priced seafood, alteration of marine tourism and reduction in capital investment (marine tourism property and capital goods). Climate change will impact the coasts, resource locations and reveal economic vulnerability as the key part of impact analysis (e.g., a power station, or petroleum refinery on low coastal land). The Marine Economy framework can be used to appraise economic vulnerability. It can also be used in a disaggregated county level framework to assess coastal community impacts (see NOEP and the Manila Bay study).

Facilitated Discussion

Question - How will marine economic valuation contribute to the sustainable development of the marine sectors, climate change mitigation and adaptation, and the protection of marine environment and resources?

The presentations illustrated that the marine economic framework is a useful background for more site specific environmental valuation issues. Moreover, they provide the rationale and basis for national strategy to address the protection of marine environment and resources and sustainable development of marine sectors – which contribute a significant part of the national and local economy – in the face of critical issues, such as the income gap in coastal areas, financial crisis and climate change.

Question - Is there a national and regional need for future project development to improve framework and methodologies? Who are the potential development partners that can provide support for this project?

The role of PEMSEA in producing the recent *Tropical Coast* edition was acknowledged as a significant initiative. The East Asian Seas framework with PEMSEA was seen as providing the platform with funding sought from international and regional organizations. The program then moved to discuss future steps.

INTRODUCTION AND REVIEW OF PROJECT PROPOSAL FOR FUTURE STUDY/PROJECT DEVELOPMENT TO IMPROVE FRAMEWORK AND METHODOLOGY

The following two overheads were presented for discussion. The Objectives

Objectives of a future project proposal

1. To develop a regionally consistent marine economy profile for each SE Asian economy; (see next slide on regional progress so far)
2. Pilot the use of Marine Economic data in marine planning;
3. Measure the coastal economy of each nation in a regionally consistent way; and
4. Demonstrate the use of marine valuation in assessing economic growth, sustainability and climate change impacts.

The following slide illustrated the progress to date in the region.

Regional progress

1. Complete marine sector estimate (% GDP) – Japan, PR China, Indonesia and the RO Korea. (Vietnam*) (4-5)
2. Industry Category level – Philippines and Singapore* (2) Malaysia (ext.), Thailand (ext.)
3. No involvement yet – Cambodia, DPR Korea, Laos PDR, and Timor-Leste
4. Chinese Taipei and Russia are unknown?

The four proposed project areas presented were discussed and there was general agreement that these were significant issues for the future.

- The discussion in the session showed support for having a regionally consistent profiling framework.
- Discussion then focussed on adaption of the APEC framework to either more intensive analysis of sectoral needs (shipping) OR to appraising whether a profile with less categories could achieve the same political outcome? Thus fewer categories could be studied in more depth.
- This discussion overshadowed the identification of the coastal economy for an analogous study program to the ocean economy, however often participants were referring to the coastal economy. Estimating the coastal economy is a logical addition to existing marine economic work and appraising impacts on coastal industries.
- There was acknowledgement of the benefit of examining the use of marine economic data in the policy areas. This has yet to be addressed in most economies. Demonstrating the usefulness of marine valuation in assessing economic growth, sustainability and climate change impacts was again seen as being desirable, examples having been provided in the session.

- Most participants were occupied with the initial measurement issues and the policy and change measurement issues were taken as a logical use of the information.

Workshop Conclusion/Summary

At the time of the session the following information needs were stated:

- Current and potential contributions of the marine economic sector to national GDPs;
- Approaches, methodologies and experiences in defining the marine sectors in the various economies across the region;
- Developing a common framework and approach to marine economic valuation
Is there a need for a common methodology? (Or should we start with developing criteria for selecting the categories/sectors and subsectors? Once we have selected the sectors to be included (from the APEC list), we can assess data availability and quality of data e.g., complete, good, underestimated, etc.);
- Contribution of marine economic valuation to national policy and actions for the sustainable development of the marine sectors, protection of the marine environment and resources, and climate proofing of marine sector projects.
 - Who are the users of the data?
 - What information is needed for policymaking, planning and management action?
 - What are the important applications of the information on marine economic and environmental values?

Workshop outcomes and proposed projects

It is recommended that future projects are in the following areas:

1. Encourage the completion of national marine economic profiles in each of the East Asian economies;
2. Demonstrate how marine economic studies can improve marine-related policymaking;
3. Evaluate what marine economic information is required to address environmental adaptation measures.

SUMMARY OF THE WORKSHOP FOR THE EAS CONGRESS REPORTING PURPOSES

After the workshop concluded, the following three overheads were submitted for inclusion in the EASC feedback sessions.

Description of the Workshop

- Presentations of research by regional PEMSEA member states into the economic value of their marine-related activities;
- The APEC framework assured regional consistency; and
- Consideration of future national capacity to value marine environmental services and resulting impacts on national marine economies in uncertain times.

Conclusions

- We are underestimating the size of the marine economy due to several problems
 - Difficulty in sourcing data; estimation approaches
 - Criteria needed for selection of sectors/categories and subsectors
 - Home production and informal sector not accounted for
 - Valuation of nonmarket values and damages not included
- Improve understanding of the needs of the final users of the information
 - The purpose is to inform and support marine-related policymaking and decisionmaking through identifying the economic and environmental linkages.
- Assess if standardization of methodology is the required approach at the moment (given the different approaches in estimating GDP across the countries).
 - We can start with selecting the categories/sub-sectors and assess data completeness – more useful for policymakers.

Recommendations

- Encourage the completion of national marine economic profiles in each of the East Asian economies
 - Select the categories/sectors and subsectors to be included.
- Demonstrate how marine economic studies can improve marine-related policymaking and planning
 - Current and potential contributions of the marine economic sector to national GDPs
 - Contribution of economic valuation of coastal and marine resources, environmental damages and potential impacts of climate change to policy, planning and action taking
- Evaluate what marine economic information is required to address sustainable development of marine areas/sectors, and support environmental management interventions and climate change mitigation and adaptation measures.
 - What information would be useful for policymaking and planning – to improve quality of life.