



A Regional Workshop  
**Developing an Integrated Support System  
for Managing Coastal Ecosystem Change in Tropical  
East Asia and the Pacific**

Marine Science Institute CS, University of the Philippines  
Diliman, Quezon City 1101 The Philippines, 24 -25 January 2008

### **Rationale**

The tropical coasts of East Asia and the Pacific are fragile ecosystems that are subjected to increasing pressures from human activities and natural events. To achieve sustainable use of coastal resources, management decisions must be founded on sound scientific basis. Hence, physical and biological data must be collected using a methodology, which can yield comparable results across regions in the Asia-Pacific. Efforts must move forward from ‘detecting’ to ‘forecasting’ the consequence of changes in sediment and nutrient loads and thresholds of impact for different species and habitats in order to identify sustainable management strategies (Airoldi, 2004). Thus, by integrating numerical modeling, remote sensing and geographic information systems, while considering socio-economic drivers, a Decision Support System (DSS) can be developed to explore change scenarios and which can give reliable results, making use an operational basis highly probable.

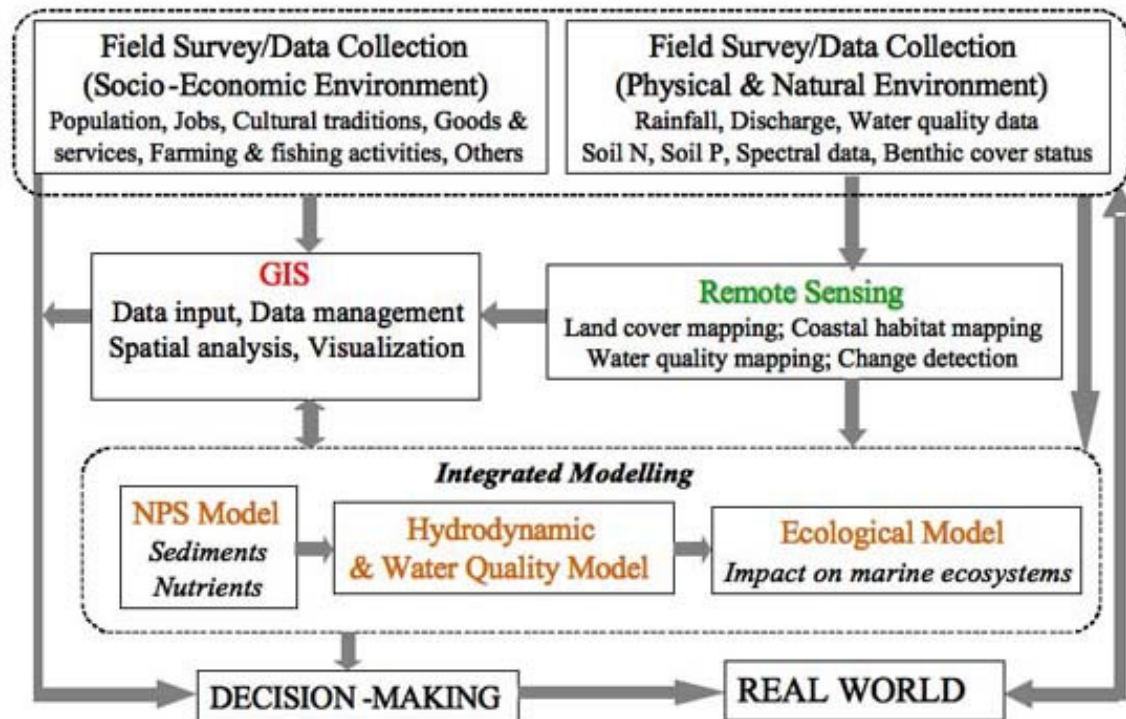
Several studies have been conducted in various coastal study sites with the framework of an integrated support system being promoted by the APN Project “*Integrated Support System for Managing Environmental Change and Human Impact on Tropical Coastal Ecosystems in East Asia and the Pacific*”. These studies encompass different aspects (e.g. physical, biogeochemical, socio-economic) of the coastal environment. It is high time to put the pieces together to reap the benefits of these studies and improve understanding of the complexities of coastal ecosystems in the Asia-Pacific region. Thus, this workshop aims to synthesize the results of various research work conducted in the Philippines, Japan and other countries and come up with an integrated model of tropical and sub-tropical coastal environments. It also aims formulate a decision support system, within the framework of research collaboration and community participation, for studying such environments and for proposing solution alternatives to address coastal environmental problems. Furthermore, this workshop also aims to solicit the participation of a group of coastal scientists in the region to exchange data and experiences in developing local DSS in order to improve their proficiency in evaluating environmental change in tropical coastal environments.

## Focus

Through collation of historical data and additional field observations, the workshop aims to combine information from the physical (e.g. changes in coastal zone physiography, composition, dynamics), natural (changes in flora and fauna) and social (e.g. population growth and human activities) disciplines into a cohesive analytical framework (i.e. spatial analysis and numerical modelling) to establish major environmental changes, linkages, patterns, and short- and long-term trends within and among the human and natural systems of tropical inland and shallow marine coastal systems in East Asia and Pacific.

## Framework of Activities

The overall framework of the DSS is shown below. Hence, the workshop topics include data generation, processing, analysis, application of physical and socio-economic modeling and development of a system to support the decision making process:



## Expected Outcomes/Products

The expected outcomes/products of the workshop include the following:

1. A collection of standardized *in-situ* data and methods for processing remotely-sensed data and socio-economic surveys;



2. Development of an integrated physical and ecological model specific to assessment of environmental changes in tropical ecosystems; and
3. Formulation of a science-based, user-driven practical decision support system (DSS) suited for management concerns of coastal zones.
4. Participants are expected to gain knowledge and improve their understanding of:
  - a. Processing of satellite imagery
  - b. Mobilization and deployment of instruments to measure physico-environmental parameters on site
  - c. Assessment of the biological aspects of coastal ecosystems, valuation of resources and formulation of the DSS models.

### Participants and Resource Persons

Participants will be invited from countries in East and Southeast Asia and the South Pacific regions. They are expected to have working knowledge in either the physical or natural sciences or on policy, planning and community resource management.

The Resource Persons will be mostly the collaborators of the Asia-Pacific Network for Climate Change Research Project spearheaded by the Tokyo Institute of Technology in Tokyo, Japan. They include the following:

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**TENTATIVE PROGRAMME OF ACTIVITIES**

<b>Date/Time</b>	<b>Activities</b>	<b>Responsible Person/s</b>
<b>Day 1 (Thursday, 24 Jan)</b>		
<b>0830 – 0900</b>	<b>REGISTRATION &amp; COFFEE*</b>  * ‘flowing’ coffee, available beside the hall during the sessions	<b>Secretariat</b>
<b>0900 – 0920</b>	<b>OPENING CEREMONIES</b>	
0900 – 0910	<i>Opening Remarks</i>	<b>Dr. M. McGlone</b> Professor & Director, UPMSI
0910 - 0920	<i>Welcome Address</i>	<b>Dr. Kazuo Nadaoka,</b> Professor, Tokyo Institute of Technology & APN Project Leader
<b>0920 – 0925</b>	<i>Introduction of Participants</i>	<b>Ms. Karen Uy (EMCEE)</b>
<b>0925 - 0935</b>	<i>Overview and Expectations of the Workshop</i>	<b>Dr. Miguel D. Fortes</b> Professor, UPMSI & Local Workshop Coordinator
<b>0935 - 1000</b>	<b>PICTORIAL</b>	<b>Secretariat</b>
	<b>PRESENTATIONS</b>	
	<b>Session 1: Keynote Address</b>	
<b>1000 – 1030</b>	<i>“Highlights of the APN Project &amp; Current Japanese Research Initiatives and Their Relevance to Asia-Pacific”</i>	<b>Professor Kazuo Nadaoka,</b> TOKYO TECH
	<b>Session 2: Plenaries</b>	
1030 – 1055	<i>“The Coastal Environment of Asia-Pacific: Status, Issues &amp; Management Perspectives”</i>	<b>Dr. Miguel D. Fortes,</b> UPMSI
1055 – 1115	<i>“Satellite Remote Sensing of Coastal Ecosystems Changes Related with Human Activities”</i>	<b>Dr. Dan Ling Tang,</b> RSMEE



1115 – 1135	<i>“Integrating Science and New Technologies To Enhance Community-based Resource Management in Fiji”</i>	<b>Dr. Victor Bonito, IAS</b>
1135 - 1155	<i>“Mapping Benthic Habitats on Fijian Coral Reefs: Evaluating Combined Field and Remote Sensing Approaches”</i>	<b>Dr. James Comley, USP</b>
<b>1155 - 1315</b>	<b>LUNCH</b>	
<b>1315 - 1400</b>	<b>Session 3: Conditions &amp; Trends</b>	
1315 – 1330	<i>“Regional Sediment Discharge Model and the Future Trends of Sediment Load Due to Climate Change in the Asia-Pacific Region”</i>	<b>Mr. Varigini Badira et al., TOKYO TECH</b>
1330 – 1345	<i>“Temporal Changes in the Cyst densities of <u>Pyrodinium bahamense</u> var. <u>compressum</u> and Other Dinoflagellates in Manila Bay, Philippines”</i>	<b>Dr. Fernando Siringan et al., Proferssor, UPMSI</b>
1345 – 1400	<i>“Complimentarity of Sensor-based Measurements and Community Perception for Monitoring and Management of Seawater Quality”</i>	<b>Dr. Ma. Cecilia Rubio, DLSU</b>
<b>1400 – 1515</b>	<b>Session 4: Monitoring &amp; Modeling</b>	
1400 – 1415	<i>“Studies of the Circulation and Bio-chemical Characteristics of the Coastal Lagoon at Puerto Galera, The Philippines”</i>	<b>Mr. Tanuspong Pokavanich et al., TOKYO TECH</b>
1415– 1430	<i>“Hydrodynamics and Water Quality Monitoring Around Santiago Island, Bolinao”</i>	<b>Mr. Kota Ashikawa et al., TOKYO TECH</b>
1430- 1445	<i>“Collaborative Monitoring and Study of Laguna Lake Hydrodynamics and Water Quality”</i>	<b>Mr. Eugene C. Herrera et al., TOKYO TECH</b>
1445– 1500	<i>“Monitoring and Modeling of Sediment and Nutrient Discharge from Coastal Watersheds in Ishigaki Island (Okinawa, Japan) and Coral Coast (Viti Levu, Fiji Islands)”</i>	<b>Mr. Ariel C. Blanco et al., TOKYO TECH</b>
1500 - 1515	<i>“Satellite Data Processing Techniques for Tropical Coastal Ecosystem Mapping and Monitoring; Overview of Some Selected Remote Sensing Study in Indonesia”</i>	<b>Mr. Mohammad Helmi et., Diponegoro University</b>
<b>1515 - 1535</b>	<b>COFFEE BREAK</b>	
<b>1535- 1625</b>	<b>Session 5: Coastal Resources Management &amp; MPAs</b>	
1535 – 1550	<i>“Inter-Local Government Unit Partnership for Coastal Resources Management of Banate Bay”</i>	<b>Ms. Mary Lou B. Larroza, BBRMCI</b>



1550 – 1605	<i>“Best Practices in MPA Management: Case Study of the BSDS in Bolinao, Pangasinan”</i>	<b>Ms. Tutu Almonte, CAO-PPC</b>
1605 - 1625	<i>"Coral Reef MPAs in Okinawa and Asia-Pacific: Considerations for Designing Effective Co-managed MPAs"</i>	<b>Dr. Shinishiro Kakuma,</b> Fisheries Division, Okinawa Prefectural Government
<b>1625 - 1700</b>	<b>OPEN FORUM</b>	<b>Dr. Enrico Paringit, UPCE,</b> Moderator
<b>1700 - 1730</b>	<b>WORKSHOP PREPARATION</b> <b>(Discussion on essential elements to develop the DSS e.g. themes, topics, approach, groupings, etc.)</b>	<b>Professor Kazuo Nadaoka &amp; Dr. James Comley,</b> Facilitators
<b>1730 - 1900</b>	<b>OPEN</b>	
<b>1900 - 2100</b>	<b>HOSTED WELCOME DINNER</b>	<b>Secretariat</b>
<b>Day 2 Friday, 25 Jan</b>		
0830 - 1200	<b>WORKSHOP PROPER</b>	Facilitators
<b>1200 - 1400</b>	<b>LUNCH</b>	
1400 – 1600	<b>WORKSHOP PROPER (con't)</b> <b>Preparation for the DSS utilization Workshop in May 2008</b>	
1600 – 1630	<i>Presentation of Outputs; Plenary Discussion</i>	<b>Focal Persons</b>
1630 – 1645	<i>Summarization</i>	
1645 - 1700	<b>CLOSING</b>	