



## **A Regional Training Course/Workshop**

### **Asia-Pacific Regional Training Course/Workshop on the Utilization of an Integrated Decision Support System in Managing Tropical Coasts**

Puerto Galera Biosphere Reserve, Philippines, 26-30 May 2008

#### **Background**

On 24-25 January 2008, a group of experts in Asia-Pacific met in a workshop in Manila (Philippines) to develop an integrated decision support system to manage changes in tropical coastal ecosystems. The workshop aimed: (1) to synthesize the results of various research work conducted in Asia-Pacific countries and come up with an integrated model of tropical coastal environments; (2) to 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; and (3) 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 coastal environmental changes. The outcome of the workshop was an initial DSS integrating numerical modeling, remote sensing and geographic information systems, while considering socio-economic drivers of change. The system is an integral part of a framework for Integrated Coastal Resources Management. Derived from case studies, the highlights include an elucidation of:

1. The essential elements in developing a DSS (e.g. transfer of outputs to decision makers + stakeholders, stakeholder involvement and empowerment, resource mapping/profiling, database development, SEK/TEK, human capacity, social acceptability, capital, infrastructure, institutions, documentation, assessment, monitoring and evaluation, communication platform/network, capacity building, feed back)
2. The characteristics of a DSS (e.g. cost effective, top and bottom questions can be accommodated, issue based, user driven, sustainable, realistic, dynamic, adaptive, holistic/integrated, knowledge-based (TEK and SEK), accessible, gender/culture sensitive, participatory, proactive, long term, programmatic)
3. Inputs from scientists and coastal managers
4. Outputs (e.g. document on what experiments are needed, understanding of the minimum data needs for scientists and managers)

## Objectives

An advancement and essential follow up of the workshop in January 2008, the present workshop aims:

1. To demonstrate the kinds of data and information required in developing a DSS;
2. To test the utility and reliability of the 'developed' DSS;
3. To train coastal area management practitioners in the development and use of the DSS;
4. To facilitate exchanges of useful and relevant experiences among the participants aimed towards a sustained scheme of regional collaboration

## Focus

The workshop will focus on an actual case of a developmental problem in Puerto Galera Biosphere Reserve –*coastal tourism*. Thus, the participants will be exposed and be given on-site guidance on different aspects (e.g. physical, biogeochemical, socio-economic) of the coastal environment and in putting these pieces together within the framework of the DSS and ICRM. This is to improve their understanding of the complexities brought about by tourism in a coastal environment and how the issues can be resolved or at least mitigated using a locally based integrated decision support system.

## Participants and Resource Persons

Participants are mid-level decision makers 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:

### FIJI (1)

Dr. James Comley  
Research Advisor, Institute of Applied Science  
University of the South Pacific, Suva, FIJI  
Work: +679 323 2899  
Mobile: +679 946 7545  
Email: [comley\\_j@usp.ac.fj](mailto:comley_j@usp.ac.fj)

## **INDONESIA (1)**

Mr. Ichwan Makmur Nasution  
Jl. Tirta Iii No. 43 Duren Sawit Jakarta Timur 13440  
Indonesia  
Emails: [ichwan.nasution@gmail.com](mailto:ichwan.nasution@gmail.com);  
[ich\\_1@hotmail.com](mailto:ich_1@hotmail.com); [ichwan@dkp.go.id](mailto:ichwan@dkp.go.id)

## **JAPAN (7):**

Prof. Kazuo Nadaoka (APN Project Leader)  
Department of Mechanical and Environmental Informatics  
Graduate School of Information Science and Engineering  
Tokyo Institute of Technology  
2-12-1 W8-13, O-okayama, Meguro-ku, Tokyo 152-8552, JAPAN  
Tel: +81-3-5734-2589, Fax: +81-3-5734-2650  
E-mail: [nadaoka@mei.titech.ac.jp](mailto:nadaoka@mei.titech.ac.jp)

Dr. Shinichiro Kakuma  
Agriculture & Fisheries Dev., Yaeyama Office  
Okinawa Prefectural Government  
438-1 Maezato Ishigaki, Okinawa 907-0002, JAPAN  
TEL : +81-980-82-2342 FAX : +81-980-83-3542  
Email: [kakumsh@pref.okinawa.lg.jp](mailto:kakumsh@pref.okinawa.lg.jp)

Mr. Ariel C. Blanco  
Department of Mechanical and Environmental Informatics  
Graduate School of Information Science and Engineering  
Tokyo Institute of Technology, Tokyo, JAPAN  
Email: [blanco.a.aa@m.titech.ac.jp](mailto:blanco.a.aa@m.titech.ac.jp), [ayeh75@yahoo.com](mailto:ayeh75@yahoo.com)

Mr. Tanuspong Pokavanich  
Department of Mechanical and Environmental Informatics  
Graduate School of Information Science and Engineering  
Tokyo Institute of Technology, Tokyo, JAPAN  
Email: [pokavanich.t.aa@m.titech.ac.jp](mailto:pokavanich.t.aa@m.titech.ac.jp)

Mr. Eugene C. Herrera  
Department of Mechanical and Environmental Informatics  
Graduate School of Information Science and Engineering  
Tokyo Institute of Technology, Tokyo, JAPAN  
Email: [eherrera@wv.mei.titech.ac.jp](mailto:eherrera@wv.mei.titech.ac.jp)

Mr. Kota Ashikawa  
Department of Mechanical and Environmental Informatics  
Graduate School of Information Science and Engineering  
Tokyo Institute of Technology, Tokyo, JAPAN  
Email: [ashikawa.k.aa@m.titech.ac.jp](mailto:ashikawa.k.aa@m.titech.ac.jp)

Ms. Eiko Tsukamoto  
Department of Mechanical and Environmental Informatics  
Graduate School of Information Science and Engineering  
Tokyo Institute of Technology, Tokyo, JAPAN  
2-12-1 W8-13, O-okayama, Meguro-ku, Tokyo 152-8552, JAPAN  
Tel: +81-3-5734-2589, Fax: +81-3-5734-2650  
Email: [tukamoto@wv.mei.titech.ac.jp](mailto:tukamoto@wv.mei.titech.ac.jp)

### **MALAYSIA (1)**

Kumaradevan A/L Saminathan  
Science Officer C41  
(Mangrove and Terrestrial Forest Ecology)  
Mukahead Marine Research Station, School of Biological Sciences,  
Universiti Sains Malaysia, 11800 Penang  
Tel. (Office): 604-8852750  
Fax No. (Office): 604-8852751  
Handphone No: 6012-4942704  
Email: [skdef@usm.my](mailto:skdef@usm.my)

### **PHILIPPINES (14):**

Ms. Rosalia Aruelo  
Coastal Resources Management Officer  
LGU-Bolinao, Pangasinan  
Fax: 075-554-28-11  
Mobile: 075-554-42-63

Ms. Aileen Bareng  
Municipal Tourism Officer  
Puerto Galera, Oriental Mindoro  
Email: [tourismoffice-aileenbareng@yahoo.com](mailto:tourismoffice-aileenbareng@yahoo.com)

Mr. Daniel Enriquez  
Environmental Officer  
The Locsin Foundation, Inc.  
Puerto Galera, Oriental Mindoro  
Email: [dtenriquez@yahoo.com](mailto:dtenriquez@yahoo.com)

Mr. Jameson Espanol  
Municipal Program Development Officer  
Puerto Galera, Oriental Mindoro  
Email: [okidoki\\_1103@yahoo.com](mailto:okidoki_1103@yahoo.com)

Mr. Gunther Feis  
Sabang Inn Dive Resort  
And Sabang Divers, Puerto Galera  
Website: <http://www.sabangdivers.com>

Tel.: +63 43 2873 198  
E-mail: [info@sabangdivers.com](mailto:info@sabangdivers.com)

Dr. Miguel D. Fortes  
Marine Science Institute CS  
University of the Philippines  
Diliman, Quezon City 1101, PHILIPPINES  
E-mail: [migueldfortes@gmail.com](mailto:migueldfortes@gmail.com)

Mr. Carmelo Garcia  
President, Tourism-oriented Sector Coordinating Association (TOSCA)  
Puerto Galera, Oriental Mindoro  
Email: [sandbarhotel@yahoo.com](mailto:sandbarhotel@yahoo.com)

Ms. Betty Garcilan  
Municipal Environment and Natural Resources Officer  
Puerto Galera, Oriental Mindoro  
Email: [okidoki\\_1103@yahoo.com](mailto:okidoki_1103@yahoo.com)

Engr. Emitterio C. Hernandez  
Officer-in-Charge, Integrated Water Resources Management Division  
Laguna Lake Development Authority  
Department of Environment and Natural Resources  
Philippines

Ms. Daisy Marcelo  
The Moorings Hotel and Resort  
Puerto Galera, Oriental Mindoro

Dr. Enrico C. Paringit  
Department of Geodetic Engineering  
College of Engineering, University of the Philippines  
Diliman, Quezon City 1101, PHILIPPINES  
E-mail: [paringit@gmail.com](mailto:paringit@gmail.com)

Dr. Maria Cecilia D. Rubio-Paringit  
Assistant Professorial Lecturer (part-time), Department of Civil Engineering  
De La Salle University,  
2401 Taft Avenue, Malate 1104, Manila, PHILIPPINES  
E-mail: [mcdrubio@gmail.com](mailto:mcdrubio@gmail.com)

Mr. Francisco Paciencia, Jr.  
Secretariat  
Marine Science Institute CS  
University of the Philippines  
Diliman, QC  
Email: [kiko7680@gmail.com](mailto:kiko7680@gmail.com)

Ms. Genevieve Regino  
Secretariat

Marine Science Institute CS  
University of the Philippines  
Diliman, QC  
Email: [ivyreg@yahoo.com](mailto:ivyreg@yahoo.com); [ivy@upmsi.ph](mailto:ivy@upmsi.ph)

#### **THAILAND (2):**

Ms. Natthawadee Nokkate  
Marine Biologist  
Marine and Coastal Resources Research Center,  
The Central Gulf of Thailand,  
Department of Marine and Coastal Resources  
Email: [kunnudee@hotmail.com](mailto:kunnudee@hotmail.com)

Mr. Sompong Bantiwivatkul  
Marine and Coastal Resources Research Center  
The Central Gulf of Thailand  
PO box 79 Chumphon, 86000, Thailand,  
Department of Marine and Coastal Resources  
Phone: 66 77 505141-3 Fax: 66 77 505141-3 ext 26  
E-mail: [bantiwivatkul\\_2nd@hotmail.com](mailto:bantiwivatkul_2nd@hotmail.com), [kunnatn@yahoo.com](mailto:kunnatn@yahoo.com)

#### **VIETNAM (1):**

Mr. Nguyen Dang Ngai, MSc  
Marine Biological Resources and Ecology Department  
Institute of Marine Environment and Resources (IMER)  
No. 246, Da Nang Str., Hai Phong City,  
VIETNAM  
Tel: (+84) 31-3760603  
Fax: (+84) 31-3761521  
E-mail: [ngaind@imer.ac.vn](mailto:ngaind@imer.ac.vn) <<mailto:ngaind@imer.ac.vn>>  
[ngaind@yahoo.com](mailto:ngaind@yahoo.com) <<mailto:ngaind@yahoo.com>>

### **TENTATIVE PROGRAM OF ACTIVITIES**

**[All sessions will be in plenary, to take place at the Conference Hall of the Apartelle; Coffee/Tea/Juice and light snacks will be available at the back of hall while in session]**

**Day 1 (May 25, Sun): Arrivals at Manila Airport; stay at Quezon City (Fersal Inn Kalayaan)**

**Day 2 (May 26 (Mon):**

0530: Leave Fersal Inn for Puerto Galera (three minivans)

0800: Arrival in Batangas City Pier; coffee

0830: Leave Batangas City Pier (on board the Ferry, "Commandos")  
1000: Arrival in White Beach, Puerto Galera  
1030: 'Brunch' (breakfast-lunch) for non-Puerto Galerans only  
1130: Organizational activities  
1330-1400: Registration (Conference Hall, 4<sup>th</sup> Fl. of Apartelle)  
1400-1500: Opening Ceremony  
    1400-1405: Introductions (Ms. Genevieve Regino, EMCEE)  
    1405-1415: Welcome Remarks by the Honorable Mayor  
        Dr. Hubbert Christopher A. Dolor  
    1415-1425: Welcome Remarks by Professor K. Nadaoka  
    1425-1435: Training Course Overview (Dr. Miguel D. Fortes)  
    1435-1500: Pictorials  
  
    1500-1800: Short trips to Sabang Cove, Small and Big Lalaguna  
        Muelle Bay & Puerto Galera Bay, Bayanan, White Beach  
1800-1845: Organizational activities  
1900-2030: Dinner at Apartelle Francesca (for non-Pto. Galerans only)  
2030-2130: Short exposure to the nightlife in White Beach

### **Day 3 (May 27, Tue)**

#### **Plenary Presentations**

0900-0925: *"Coastal Research Initiatives of the Tokyo Institute of Technology in Asia-Pacific: Providing A Sound Basis for Ecosystem Conservation and Tourism Development"*  
(Professor Kazuo Nadaoka, Coordinator/Project Leader, APN Project)  
0925-0950: *"Priority Coastal Environmental Tourism Issues in Puerto Galera: Where and How Science Can Help"* (Mr. Carmelo Garcia, President, TOSCA)  
0950-1015: *"Coastal Tourism in Puerto Galera Biosphere Reserve: Cutting the Hands That Feed"* (Dr. Miguel D. Fortes, UNESCO-MAB-Philippines Focal Point)  
1015-1040: *"Designing Effective MPAs: A Tool in Sound Coastal Fisheries and Tourism Development"* (Dr. Shinichiro Kakuma, Agriculture and Fisheries Development, Yaeyama Office Okinawa Prefectural Government)  
1040-1105: *"Coastal Tourism in Fiji: How Applied Science Helps"*  
(Dr. James Comley, Institute for Applied Science, USP, Fiji)

#### **Focused Discussion and Sharing 1**

1105-1200: Open focused discussion on priority coastal tourism issues in Puerto Galera and elsewhere where marine science is needed for their resolution (**All participants are encouraged to share their related experiences**) (Dr. James Comley, Moderator)

**1200-1330: LUNCH TO BE PROVIDED TO EVERYBODY**

## **Demonstrations on Coastal Ecosystem Monitoring and Computer Simulations**

- 1330-1350: *"Modeling Sediment and Nutrient Discharge from Todoroki Watershed (Ishigaki Island, Okinawa)"* (Mr. Ariel C. Blanco, TiTECH)
- 1350-1410: *"Field Observations and Numerical Simulation for Understanding Milkfish Culture Impacts on the Coastal Environment of Bolinao, Philippines"* (Mr. Kota Ashikawa, TiTECH)
- 1410-1430: *"Numerical Modeling as a Decision-Support Tool for Conservation and Management: Simulation Scenarios for Laguna de Bay, Philippines"* (Mr. Eugene C. Herrera, TiTECH)
- 1430-1450: *"Puerto Galera Water Modeling: Towards the Development of Decision Support System for Water Resources Management"* (Mr. Tanuspong Pokavanich, TiTECH)
- 1450-1510: *"SeagrassNet as a Decision Support System in Conserving the Coasts for Tourism in Puerto Galera"* (Dr. Miguel D. Fortes, Professor, UPMSI)
- 1510-1530: **Invited or voluntary contributions from the other participants**

## **Focused Discussion and Sharing 2**

- 1530-1700: Open focused discussion on priority coastal tourism issues in Puerto Galera and elsewhere where marine science is needed for their resolution (**All participants are encouraged to share their related experiences**) (Dr. K. Nadaoka, Moderator)
- 1700-1830: Open Schedule
- 1830-2030: Dinner at the Apartelle (for non-Puerto Galerans only)

## **Day 4 (May 28, Wed)**

- 0900-1100: Focused Field Exposure (participants will be formed in teams of 3 and encouraged to visit White Beach to assess and document the good and not-so-good practices and discuss these with the group in the afternoon. Focus will be on how marine science and oceanography could be useful in enhancing or improving the situation. Prepared guide questions will be provided)

## **1200-1330: LUNCH WILL BE PROVIDED**

## **Demonstration and Training on Remote Sensing/GIS and Socio-Environmental Scan of Puerto Galera**

- 1330-1600: *"Training/Demonstration on the Use of Remote Sensing/GIS for Tourism"* (Dr. Enrico Paringit, UPCE)



1600-1630: *“A Socio-Environmental Scan of Puerto Galera As A Decision Support System for Tourism”* (Dr. Ma. Cecilia Rubio-Paringit, De La Salle University)

1630-1700: Open Forum

1700-1800: Informal oral presentation by participants on the morning's field exposure in White Beach (10-min each team)

1830-2030: Dinner at the apartelle (for non-Puerto Galerans only)

Day 5 (May 29, Thu)

0830-1130: Field validation of data and information at selected sites (visits to study stations and giant clam nursery)

1400-1730: Discussion on refinement and applications of DSS

1730-1830: Open Schedule

1830-2030: Dinner at the apartelle (for non-Puerto Galerans only)

Day 6 (May 30, Fri)

0830-1000: Discussion on continuous scheme of collaboration; Closing Ceremonies, Awarding of Certificates

1000-1030: Check out of apartelle

1030-1200: In-transit to Batangas City Pier (on board “Commandos”)

1230-1530: In transit to Quezon City and Fersal Inn Kalayaan (minivans))

Day 7 (May 31, Sat): Departures for the airport, etc.

END OF TRAINING COURSE