



Theme 3

Habitat Protection, Restoration and Management

**WORKSHOP 2:
INDIGENOUS APPROACHES TO
HABITAT PROTECTION AND
RESTORATION: EXPERIENCES IN
SATO-UMI AND OTHER
COMMUNITY INITIATIVES**

24 November 2009



**International Environmental Management of Enclosed
Coastal Seas Center (EMECS) of Japan**

Chair: Prof. Osamu Matsuda
Professor Emeritus
Hiroshima University

Co-Chairs: Prof. Tetsuo Yanagi
Institute of Applied Mechanics
Kyushu University

Ms. Anne McDonald
Director, United Nations University -
Institute of Advanced Studies

The East Asian Seas Congress 2009

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

Manila, Philippines

23–27 November 2009



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Theme 3: Habitat Protection, Restoration and Management
Workshop 2: Indigenous Approaches to Habitat Protection and Restoration:
Experiences in Sato-umi and other Community Initiatives

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Co-Convening Agencies:

International EMECS Center of Japan

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INTRODUCTION

The EAS Congress Workshop 3.2 entitled “Indigenous Approaches to Habitat Protection and Restoration: Experiences in Sato-umi and other Initiatives” was hosted and co-convened by the International EMECS Center of Japan, with support from Hiroshima University, Japan and the United Nations University-Institute of Advanced Studies, Japan.

The workshop was chaired by Prof. Osamu Matsuda, Professor Emeritus of Hiroshima University and co-chaired by Prof. Tetsuo Yanagi of the Institute of Applied Mechanics, Kyushu University and Ms. Anne McDonald, Director of the United Nations University-Institute of Advanced Studies. The Chair and Co-Chairs were joined by Prof. Elmer Ferrer of the College of Social Work and Community Development of the University of the Philippines to act as panelists in the panel discussion.

The workshop aimed to: (1) share information on community-based innovative approaches and good practices on habitat prevention, restoration and management initiatives applying low-cost technologies; (2) identify and distill lessons from specific case studies; and (3) examine how such local community initiatives can be further developed, packaged and extended within and across jurisdictional boundaries. The workshop focused on introducing case studies on indigenous knowledge and innovative low-cost technology with respect to the protection, restoration and management of key habitats and on analyzing

sato-umi and *sato-yama* as a community-driven working model for integrated management from mountain to sea.

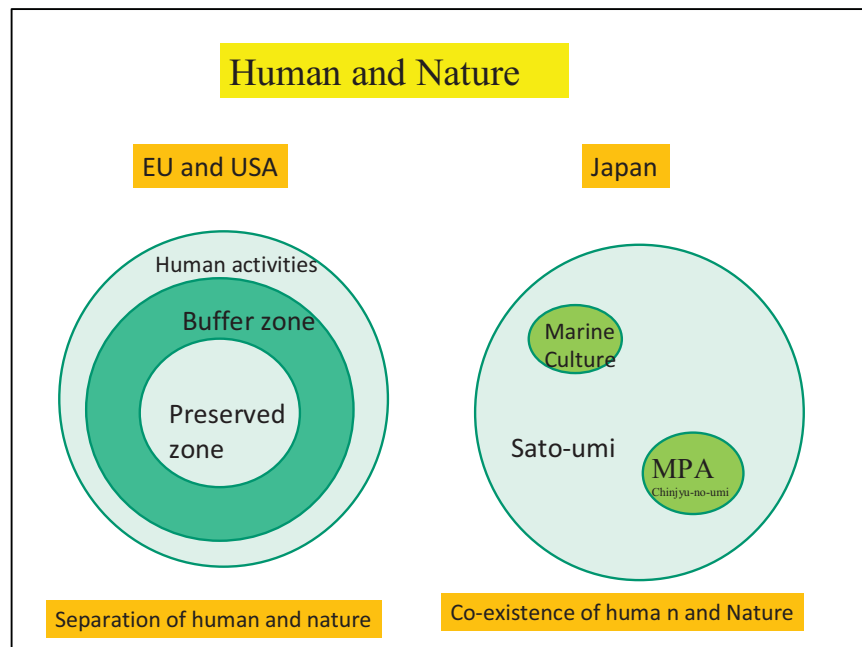
The workshop was divided into three parts. Part 1 focused on “The Sato-Umi Concept and its application in Japan: Lessons and Application.” Part 2 focused on “Indigenous Knowledge and Community-based Approaches in Protecting, Restoring and Managing Key Habitats”. Part 3 was a panel discussion on “Institutionalizing Community-based Efforts in Habitat Protection, Restoration and Management within an ICM Framework”.

PART 1: THE SATO-UMI CONCEPT AND ITS APPLICATION IN JAPAN: LESSONS AND APPLICATION

Part 1 focused on Sato-umi as a concept, defined as “high productivity and biodiversity of a coastal sea as a result of, and in harmony with, human activity,” and stressed the importance of incorporating science in the decisionmaking process and the need to strengthen scientific and technological capacities within the purview of the sato-umi concept. Part 1 also showcased applications in Japan and highlighted the sato-umi concept as developing into an integrated coastal management (ICM) model in Japan.

Concept and Practices of Sato-umi in Japan and Lessons Learned
 Prof. Tetsuo Yanagi, Institute of Applied Mechanics, Kyushu University

This presentation explored whether nature indeed exists in its best state with mankind's inetraction. Sato-umi, as a new concept for coastal management is based on the successes of Sato-yama, or the “forest with high productivity and biodivesrity under interaction with human activities.” Sato-umi, which has been defined as “a coastal sea with high productivity and biodiversity under human's interaction” and is based on full understanding of the sea, such as its production systems, productivity and material cycling. These form the bases of permissible and prohibited human activities and how productivity and biodiversity may be enhanced. The presentation explored various examples of sato-umi applications.



Holistic governance from the top of the mountain to the sea

- Material cycling
- Resource management
- Social system innovation (production & consumption)
- Change of value
- Technology innovation

- Fisheries law
- Navigation law → unified
- Water pollution law



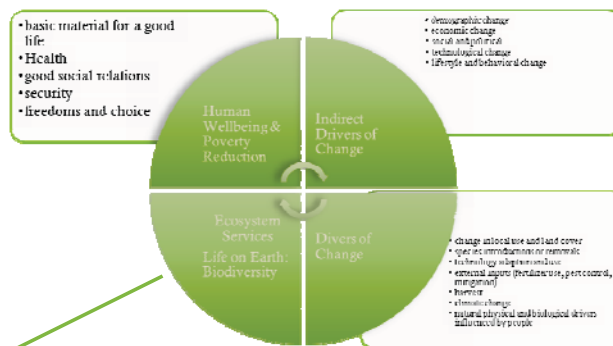
Concept and Practices of Satoyama Sato-umi Sub-Global Assessment in Japan

Ms. Anne McDonald, Director, United Nations University-Institute of Advanced Studies

Ms. McDonald introduced the conceptual framework of the Millennium Assessment (MA) and the governance structure of the Japan Sub-Global Assessment (Japan SGA). To provide the audience with a comprehensive historical background and definition of sato-yama and sato-umi, on-going assessment efforts were explained. Japan's sato-yama and sato-umi assessments, which are aimed at identifying common challenges and possible solutions to sustainable marine resource use, conservation and management were also shared. Integrative approach, stakeholder and policymakers involvement, partnership-building and outreach were stressed as important elements in ecosystem assessment efforts.

MA Conceptual Framework

(modified from Millennium Ecosystem Assessment 2005)

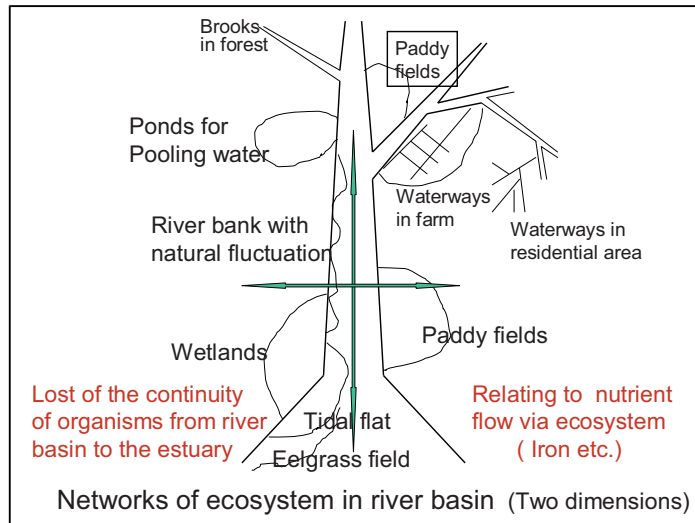


ecosystem services next slide:
supporting, provisional, regulating & cultural services

Case of Fushino River Estuary initiatives in Japan

Prof. Masao Ukita, Yamaguchi University

The decrease of fishery production (e.g., short-necked clam), the decay of seagrass fields, and the protection of endangered species like horseshoe crab caused by changes in people's lifestyle and activities, such as forestry, fisheries, agriculture, waste disposal and treatment, construction, land reclamation, industries, and compounded by global warming, have triggered the development of plans for integrated management of the Fushino river basin, from forest to sea.



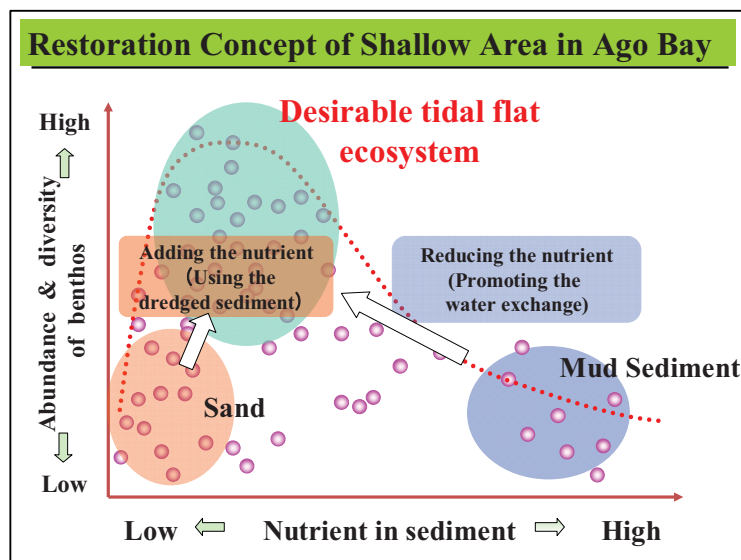
The presentation showcases successful restoration initiatives in Fushino River, such as planting seagrass, surveying horseshoe crab distribution, beach cleaning, river upstream cleaning upstream and tree planting. These are conducted through the cooperation of local people upstream and downstream. Local money 'Fushino' is provided to stimulate those activities. Conduct of scientific studies and learning from satoyama and sato-umi systems, promoting environment-friendly practices in fishery, forestry and agriculture and encouraging living a 'slow life' are part of their restoration and management activities.

The presentation stressed on local production and local consumption. As they say in Fushino, 'think of the source when you drink water'.

The Ago Bay Initiatives in Japan

Prof. Miyuki Maegawa and Hideto Uranaka, Mie University

The Environmental Restoration Project on Enclosed Sea carried out from 2002 to 2007 in Ago Bay is aimed at making a better life through wise and sustainable use of coastal environment. The project developed important conservation techniques and systems for environmental restoration, such as construction of artificial tidal flats, recovering seagrass beds, continuous monitoring system and environmental simulation model of the bay in collaboration with stakeholders, such as fishers and the regional public office.



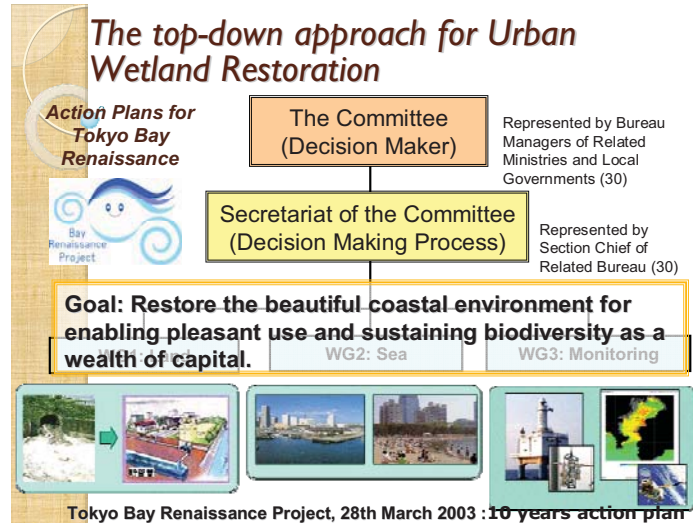
It also mentioned the creation of a committee composed of a local government office, fisher's union, academe and other sectors of the community with the role of promoting the restoration of Ago Bay. The concept of sato-umi — symbiotic relationship between natural environment and people — has been recognized as an alternative management option for the bay.

Potential of Urban Wetland as a Target of Habitat Restoration and Management
 Dr. Keita Furukawa, National Institute for Land and Infrastructure Management

The presentation provided measures to restore coastal wetlands in urban areas with the use of sound ecological engineering which was incorporated in the restoration and development activities in Tokyo Bay. The presentation mentioned the top-down and bottom-up approaches in implementation activities in restoring urban wetlands:

The top-down approach, which stems from a medium-term action plan, includes the restoration of urban wetlands as a priority action. The top-down approach requires adaptive management where a system for feedback from users in the implementation of new techniques is important.

An example of the bottom-up approach is the construction of terrace-type wetlands, which allows public participation in monitoring and maintenance. Other wetland parks and restoration programs involved the participation of the private sector, schools, fisherfolk and local residents. The bottom-up approach requires an ecosystem approach wherein understanding of the situation, monitoring and analysis should be done.



Urban wetland restoration has a high potential in sato-umi wherein both the natural science and social science are given due consideration.

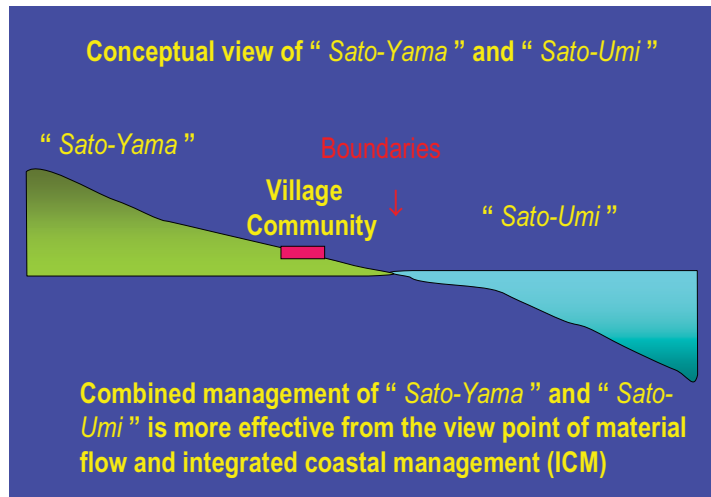
Community-based Seagrass Bed Restoration and Management in Seto Inland Sea

Prof. Osamu Matsuda, Hiroshima University

This paper discussed the restoration of eel grassbeds in Akou Coast, which is a demonstration site for the sato-umi concept. Education and restoration activities were important components of the project. Strong community involvement in the project

implementation made the restoration project successful. Sectors of the community discussed future plans and a Sato-umi Committee has been created to oversee the activities in the Akou Coast.

The presentation concluded that tidal flats and seagrass beds in the Seto Inland Sea have drastically deteriorated mainly because of land-based human activities. It is therefore essential that efforts to restore both watersheds and coastal areas are done.



Supporting Activities for the Creation of Sato-umi in Japan

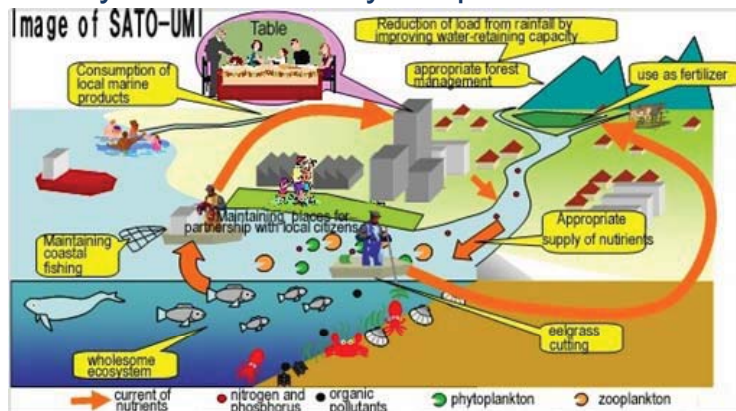
Mr. Yasuhiro Muroishi, Mr. Takuya Yamada and Mr. Naoto Ogawa, EMECS, Ministry of the Environment

Degradation of coastal ecosystem and decline of material circulation functions which resulted to the decline of fisheries resources are some of the pressing problems Japan is currently facing. To address these problems, restoration activities such as establishing sato-umi to provide habitat for fish and shellfish were initiated.

The activities that support the establishment of sato-umi include rehabilitation/restoration of seaweed beds and mudflats, and implementation of water pollution measures with the active participation of the local public organizations. Efforts to support the promotion and creation of sato-umi by the Ministry of Environment include creation of model projects on sato-umi, preparation of standard sato-umi plans, establishment of sato-umi manual, selection of examples of advanced sato-umi activities, creation of a sato-umi website and data network, creation of publicity activities and provision of information overseas.

Concept & Image of Sato-umi

Coastal zone where land and coastal zone are managed in an integrated and comprehensive manner by human hands, with the result that material circulation functions are appropriately maintained and both high productivity and biodiversity are preserved.



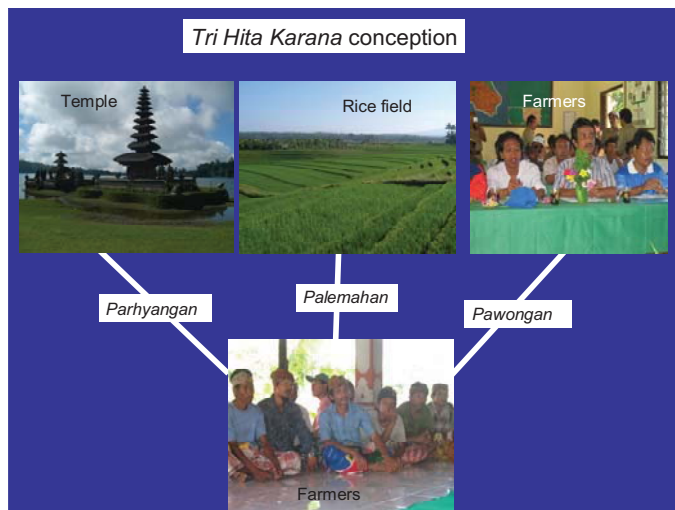
PART 2: INDIGENOUS KNOWLEDGE AND COMMUNITY-BASED APPROACHES IN PROTECTING, RESTORING, AND MANAGING KEY HABITATS

Implementing an Ecosystems Approach to Coastal Management through Community-based Organizations: An Example from Andaman Coast, Thailand
Somsak Soonthornawaphat* and Janaka de Silva, IUCN-Thailand Programme

This paper presented how communities manage to protect the watershed in Thailand. It described an approach based on the “reef to ridge concept” that is similar to the ecosystem-based approach applied to coastal rehabilitation and management. This approach utilized the bottom-up process which is stakeholder-driven building upon the community-based organizations. Formulation of the framework of action through participatory process involving stakeholder proved to be successful.

Implementation of Tri Hita Karana, a Local Wisdom of Bali to Maintain Agricultural Resources
Dr. Ir. Dewa Ngurah Suprpta, Pasca Master University of Udayana, Indonesia

This paper described the implementation of *Tri Hita Karana* or the harmonious relationship among man, nature and God who brings welfare and happiness. The Balinese Hindu community believes that man is part of the whole universal system created by God. *Tri Hita Karana* constitutes a part of the local wisdom in Bali, Indonesia in the field of agriculture to maintain agricultural resources.



Community Efforts in the Restoration of coastal Green Belt in Danang City
Mr. Truong Cong Hai, Danang Department of Natural Resources and Environment, Vietnam

The presentation discussed the models developed in mobilizing various human resources for urban greening which was initiated by an executive board to include leaders of departments, sectors, agencies. The executive board coordinates all activities of the project to ensure participation of social organizations, enterprise and communities. Financial contributions from enterprises

The collage shows various groups of people, including students, workers, and community members, actively participating in planting trees and maintaining green spaces in an urban environment.

- Planters: students, unions’ members, soldiers... With support from experts
- On each site, planters have to plant trees according to technique requirements.
- Stakeholders commit to take care and protect green areas as technique requirements.

(polluters) were received to aid project implementation. The project's success has been attributed to stakeholder involvement; however, heads of organizations play a crucial role in the active participation of stakeholders in the project.

Community Involvement in Coral Reef Restoration Projects in the Gulf of Thailand

Dr. Thamasak Yeemin*, Chaipichit Saenghaisuk, Sitiporn Pongsakun, and Makamas Sutthacheep, Ramkhamhaeng University, Thailand

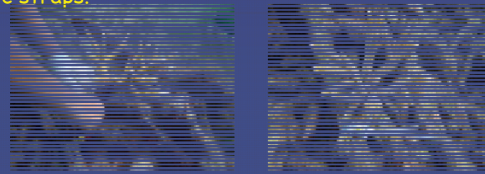
Lessons culled from the experiences in implementing the project on coral reef restoration at Koh Mapling project were shared. The coral reef restoration project was done in collaboration with local fishers, NGOs and some volunteer groups. It implemented a low-cost coral reef restoration method covering a small area that can be easily controlled and managed for the benefit of ecotourism, education, public awareness,

Demonstration Projects of Coral Reef Restoration

iii) additional substrate for coral recruitment and attaching coral fragments by using clusters of concrete blocks fused in horizontal and vertical directions;



iv) attaching branching fragments to dead branching corals by means of plastic straps.



ecosystem restoration and research purposes. Good practices were replicated in other sites such as in Ao Mai Rood area. An important consideration in coral reef restoration is the simplicity of techniques and methods and the availability of cheap materials.

Evaluation of Artificial Reefs (ARs) in West Coast, Peninsular Malaysia

Ilisriyani Ismail*, Kusairi Mohd Noh, Fatimah Mohamed Arshad and Aswani Farhana Mohd, Noh Universiti Putra Malaysia

The presentation examined the economic returns of artificial reefs to fishers. It also discussed the impacts of artificial reefs on fisheries and the impacts of economic changes on the socioeconomic conditions of fisherfolk in west coast, Peninsula Malaysia. The study showed that the deployment of these ARs is one of the effective ways in helping the fisher's income and profitability.

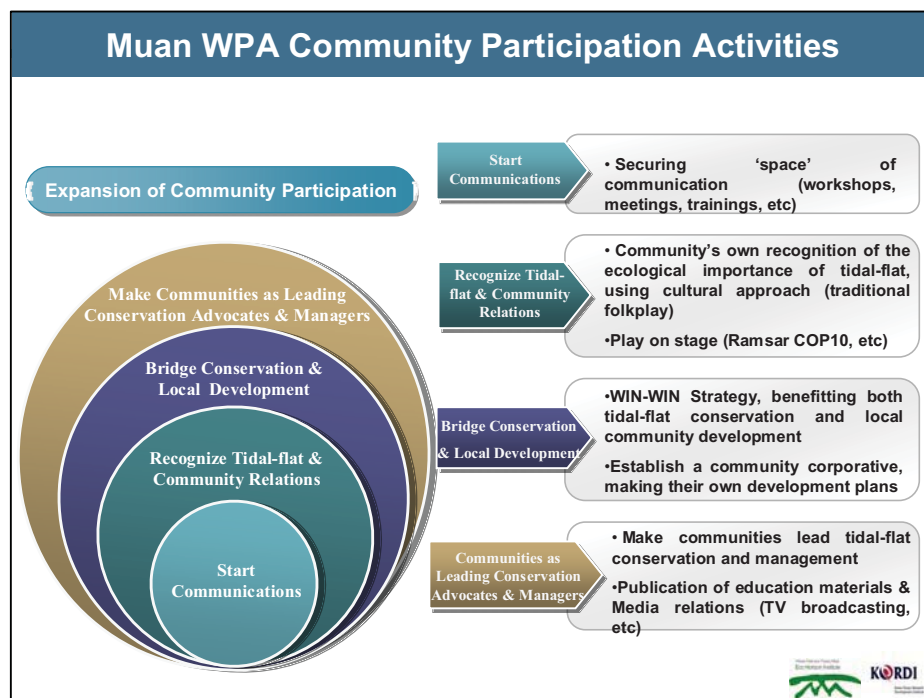
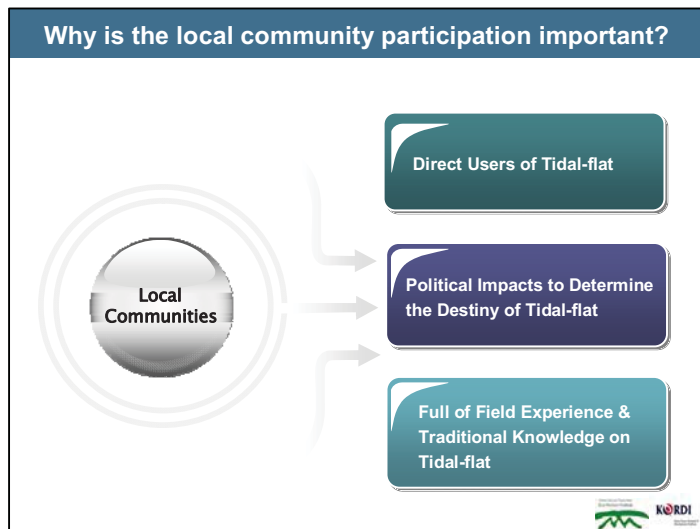
During the discussion, there was a concern on the long-term effects of these ARs considering that this project started recently therefore the long-term impacts of ARs are not yet known.

Community-based Management Approach at Work in the Muan Tidal Flat Wetland Protection Area

Ms. Ji Young Jang* and Yound Rae Choi, Eco-Horizon Institute, RO Korea

The presentation discussed the community-based approach in MPA management practiced in the Muan tidal flat wetland protection area in RO Korea. The approach has twofold objectives: to empower the communities in MPA management; and demonstrate community-based approach as an effective and successful way to manage MPAs.

Empowered communities made a prominent progress after three years of implementation as seen in their active participation in the protection of the Muan tidal flat. The success of the project has opened opportunities for improving the MPA policy in RO Korea. It has also demonstrated the importance of local participation in sustainable MPA management.



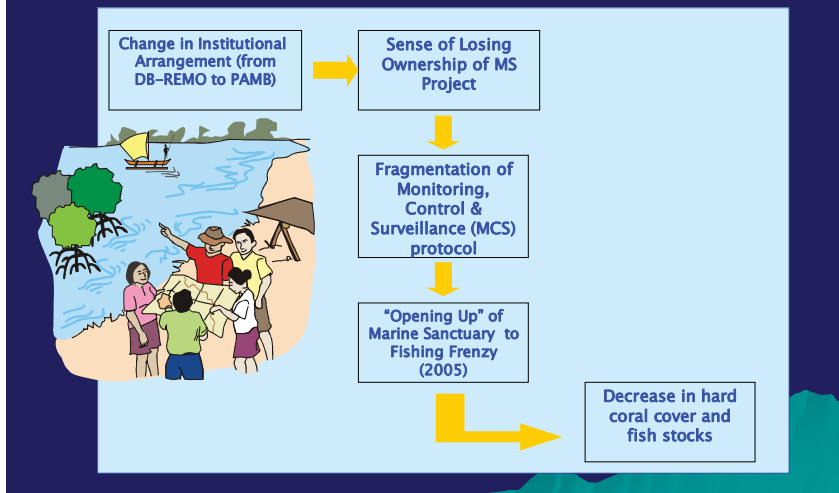
When the Cradle Falls: A Case of Management Failure in Community Marine Reserve in Southern Philippines

Dr. Asuncion Bina-de Guzman, Mindanao State University, Philippines

The presentation focused on how abrupt changes in institutional arrangements have affected the management of the Baliangao Marine Sanctuary in Danao Bay, Philippines. From a community-led MPA to one headed by government, the locals felt losing ownership and representation in management of the sanctuary. It also described how it negatively affected the fish communities and other marine resources in the sanctuary based on the assessment results.

Ecological impacts of management failure imply that success in the management of the marine sanctuary relies on the stakeholders who are the so-called guardians of the area. A thorough review of the existing policies related to MPAs in the Philippines was recommended.

When the cradle falls...



Conceptual Framework in Organizing Communities for Effective Mangrove Management

Ms. Josephine Savaris*, Ms. Rosalie Joven, Mr. Rodney Golbeque, and Mr. Efren Advincula, Zoological Society of London

Ms. Savaris presented the four-year project on Community-based rehabilitation and the framework of organizing communities developed by the Zoological Society of London (ZSL) in Western Visayas. The presentation emphasized the role of organized communities in mangrove management providing the formal structure on which decisions and project implementation and sustainability depends. The presentation also shared a process for community organizing and identified challenges, which include sustaining rehabilitation activities, securing tenurial instruments, sharing responsibilities with local governments, improving socioeconomic conditions and mitigating impacts of climate change.



Mangrove ecology training



Delineating planting area



Cross site visit



MOA signing

Indigenous Approaches to Access, Control and Protection of Coastal Resources: A Review of Philippine experiences

Prof. Elmer Ferrer, University of the Philippines

The presentation reviewed several indigenous practices in the use, control and protection of coastal resources, such as the *vanua* and *mataw*, among traditional fishing communities in Batanes, northern Philippines and in Palawan, southern Philippines. It presented practices of fishing communities that live in harmony with nature through harnessing the ecological knowledge of fishers, observing economic arrangements to protect

the environment, and the implementation of organizational rules, taboos and rituals formulated by the association of users. The presentation also highlighted the challenges faced by indigenous practices and institutions in a fast modernizing world.

CONCLUSIONS

The conclusions of the theme include:

1. The workshop recognized that long-term cooperation mechanisms among local communities, scientists, private sector, and local government are necessary to ensure sustainable use of coastal and marine resources.
2. The sato-umi workshop stressed the need to explore diverse community-based approaches in protecting, restoring and managing key habitats which integrate traditional ecological knowledge, local wisdom and cultural beliefs. Drawing on the knowledge of traditional societies to develop new models of sustainability which combine modern science and traditional ecological knowledge in coastal communities was identified as critical.
3. As coastal communities are faced with increasing habitat degradation and loss, sato-umi concepts and practices were recognized as providing an opportunity to assess human communities' relations with nature.
4. The workshop highlighted that participatory and community-based activities to restore and rehabilitate an ecosystem, is an effective mechanism to encourage the community and other stakeholders to take part in the conservation and management to their own resources.

RECOMMENDATIONS

The theme's recommendations on the sato-umi concept and its application in Japan: lessons and application included the need for:

1. Building on existing community-based partnerships aimed at empowering local communities and widening partnership participation to include multiple stakeholders from local to national levels;
2. Exploring institutional frameworks to coastal management which reflects local needs, circumstances and characteristics to ensure diversity in approaches;
3. Integrating science into management decisions and managing habitats through application of biological information from all available data sources; and
4. Recognizing the importance of ecological networks and interconnectivity of forest to sea, including human dimension, successful ICM needs to include a comprehensive management of the material flow from mountain-farm-river to the coastal sea.

On the indigenous knowledge and community based approaches in protection, restoring and managing key habitat, the recommendations included:

1. Developing potential models of sustainability that incorporate and build on the

rich cultural histories and indigenous knowledge in Asia;

2. Managing coastal habitats by increasing public awareness, adopting appropriate legislation and strengthening enforcement;
3. Coordinating across sectors to improve governance and efficiency, and addressing transboundary issues; and
4. Exploring institutional frameworks, such as sato-umi, for managing natural and human systems.