

results are used to explore the role humans play in the coastal zone, their vulnerability to changing environments, and the options to protect coasts for future generations. The main goal of LOICZ is to provide the knowledge, understanding and prediction needed to allow coastal communities to assess, anticipate and respond to the interaction of global change and local pressures which determine coastal change.

Lessons and experiences of PEMSEA as a regional partnership mechanism in integrated coastal management program development and implementation

Kazumi WAKITA

DENR Compound, Visayas Avenue, Quezon City 1100, Philippines

* E-mail: info@pemsea.org

The objective of this paper is to: 1) introduce the Regional Partnership Mechanism of PEMSEA, its key components, functions, roles and significance in achieving the sustainable development of the Seas of East Asia; and 2) review the lessons and experiences of PEMSEA in Integrated Coastal Management (ICM) program development and implementation, especially on how science can be effectively incorporated into the common framework for sustainable development of coastal areas thru ICM implementation.

PEMSEA is a regional programme that spans across the 7 million km² sea area that makes up the Seas of East Asia. From a project-based arrangement, PEMSEA entered into a new phase and transformed into a Regional Partnership Mechanism with a mandate to implement the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA). Currently the PEMSEA partnership consists of 11 State Partners, 16 Non-State Partners and other collaborators. The Partnership of PEMSEA is not the convention mechanism, but a regional partnership. The presentation will expand on the benefits and challenges of a partnership approach and why countries have agreed to such an arrangement.

Some useful experiences and lessons regarding the role of science in management and decision-making processes for coastal and ocean governance have been learned in the region (from Chua Thia-Eng, 2006. □The Dynamics of Integrated Coastal Management.□ PEMSEA.). The presentation will review some of these points, based on PEMSEA's experience in ICM program development and implementation, including, for example:

1. ICM promotes and facilitates the gathering of reliable scientific information, which has specific applications at various stages of the ICM cycle for policy and management decisions.

It is imperative that scientific advice be integrated as an essential part of the ICM program. The best way to obtain the needed scientific support and information is to involve research institution and universities in the activities of the ICM program. It also pays to develop scientific capability in local institutions, so as to sustain the provision of scientific technical information.

2. The long process of baseline research is not conducive to effective management of marine and coastal areas

In many ICM or coastal resource management programs in the past, the data-gathering stages tended to last for years. Although such an approach is helpful in formulating detailed plans of action, the downside is that the long process of information gathering and analysis often consumes a large portion of the project timeframe, and of the human and financial resources. As a consequence, the scientific reports and management plans become the final products of the project, and new projects are needed for their implementation. The reason for this situation often lies in the project design. The best approach is to include both coastal managers and scientific experts in the project design team, so that scientific concerns related to management issues are adequately considered.

Regional collaboration on coastal environmental monitoring and assessment in the Northwest Pacific Action Plan (NOWPAP)

Osamu MATSUDA

Graduate School of Biosphere Sciences, Hiroshima University, Higashi-Hiroshima, 739-8528 Japan

E-mail: matsuda036@go3.enjoy.ne.jp

The Northwest Pacific Action Plan (NOWPAP) was adopted in 1994 as a part of the Regional Seas Programme of UNEP (United Nations Environment Programme). The People's Republic of China, Japan, the Republic of Korea and the Russian Federation are currently members of NOWPAP. Each member hosts one of the four Regional Activity Centres (RACs), which were responsible for individual NOWPAP activities in coordination with the Regional Coordination Unit (RCU). As one of the RACs, CEARAC (Special Monitoring & Coastal Environmental Assessment Regional Activity Centre) which was established in 2002 is located in Toyama, Japan is responsible

for special monitoring in particular of remote sensing by satellite and coastal environmental assessment.

In CEARAC activities, Working Group 3 (WG3) which is mainly responsible for harmful algal bloom (HAB) related issue and Working Group 4 (WG4) which is in charge of remote sensing are jointly operated. The author, as a Japanese expert of WG3, will introduce some cases of regional collaboration on coastal environmental monitoring and assessment among the NOWPAP member countries in this paper. WG3 and WG4 of CEARAC have already published the Integrated Reports both on harmful algal blooms and on ocean remote sensing for the NOWPAP region in order to understand the current status of the region and to build consensus on the future steps. The booklet of countermeasures against harmful algal blooms in the NOWPAP region and the eutrophication monitoring guidelines by remote sensing for the NOWPAP region were also published for more practical purpose. Unique pamphlet on *Cochlodinium*, which is one of the most harmful red tide causative unicellular marine plankton belong to dinoflagellate, was printed in the four languages of the NOWPAP member states, namely Chinese, Japanese, Korean and Russian. These pamphlets are expected to be utilized by fishermen, student and general public.

As a recent collaborative activities of CEARAC, the First Coastal Environmental Assessment Workshop was held on March 7, 2008 in Toyama, Japan in which three sessions and one panel discussion were held with participation of specialists from NOWPAP member states. After the report on CEARAC activities in Session 1, presentations on "Current situation on coastal monitoring in the NOWPAP member states" were made in Session 2 by the specialists from four countries. In Session 3, presentations on "Coastal environmental assessment in the NOWPAP member states" were made similarly. In the panel discussion, "Development of a procedure for assessment of eutrophication status in the NOWPAP region" was discussed from different viewpoints by the representatives of member states and also by keynote and special speaker of the workshop.

Procedure of coastal environmental assessment in particular of the experimental procedure as a result of case study conducted in Toyama Bay is now being developed under the cooperation of WG3 and WG4. This procedure will be reviewed by the member states and then applied to NOWPAP region in future. In this procedure,

assessment based on not only water quality data obtained by sea observation but assessment based on satellite data especially chlorophyll data are highly incorporated since chlorophyll is one of the important parameters indicate the status of eutrophication. Other related activities on regional collaboration in the NOWPAP region will be also presented and discussed.

Approaching a science based decision-support system to manage regional seas

Bo RIEMANN

National Environmental Research Institute, University of Aarhus, Demark
E-mail: bri@dmu.dk

A decision-support system has been developed for the Baltic Sea in The Baltic Nest Institute (BNI). BNI is an international institute starting 20070901 with a department in Sweden and one in Denmark. The Institute shall further develop the decision support system Baltic Nest and apply ecological and economic models, scenarios and prognoses for the entire Baltic Sea Ecoregion. It shall provide managers and politicians with answers to the question: If you want a better environmental quality, the Baltic Nest model can tell what "buttons" to turn and what are the ecological and economic consequences. This is the first time in the world that inputs from land, rivers and lakes, the atmosphere and from the sea are integrated over such large geographic scales and combined with economy to provide a suite of models and scenarios. The rationale behind the system is a need to improve the environmental conditions in the Baltic Sea Ecoregion. The BNI system is composed of a number of ecological and economic modules available to end-users via the internet. The background for BNI is that The Baltic Sea is suffering from excessive inputs of nutrients, delivered from land and atmosphere, leading to eutrophication manifested by extensive areas of hypoxia, algae blooms, deterioration of benthic animals, loss of benthic vegetation, reduced recruitment of valuable fish species, etc. Eutrophication was clearly recognised as the most serious environmental challenge in the Baltic Sea at the HELCOM (Helsinki Commission) ministerial meeting in November 2007 (www.helcom.fi). The solution for restoring the Baltic Sea ecosystem to a healthy state is clearly that nutrient inputs must be reduced. This could either be a collaborative task where all countries discharging to the Baltic Sea contributes by an agreed percentage reduction of nutrient emissions,