

REVIEW AND SYNTHESIS OF DONOR PROJECTS IN THE EAST ASIAN SEAS REGION

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May 1, 2005

Paper prepared for the First Regional Partners Workshop on Regional Coordination Mechanisms in the East Asian Seas Region, 9-10 May 2005, Bangkok, Thailand.

Introduction

This report is the summary of the full report submitted to EAS/RCU under the same title. This review has the objective of reviewing the past UN and donor projects on coastal and marine environment in Southeast Asian region since 1980. The review has been accomplished by internet searches, research on donor and partner agencies' file and literature search. The duration of the project was 2 months. The review includes coastal countries in Southeast Asia, i.e. Brunei Darussalam, Cambodia, Indonesia, Malaysia, Singapore, Thailand and Vietnam. The scope of the review is limit to the projects relate to marine environment with substantial budget of more than US\$ 0.5 million and involve more than 3 countries participating in the project. Projects that deal directly with fisheries resources and related community based activities are not included. The ongoing GEF Reversing Trend of Marine Resource Degradation is not included. Some examples of large bilateral countries projects are given to provide the scope of donors' activities in the region. With time limit and difficult in obtaining most unpublished documents, there is the limit in comprehensiveness of the report. As it is the literature review, evaluation of the outcome of each project can only be judged through information available in literatures and the reviewer's opinion.

PART I: PROJECTS REVIEW

Part I of the review comprises of 11 donor projects listed according to the time of executing them.

The projects by donors are listed according to the starting time as follow:

1. UNDP/UNESCO Regional Projects-Research and Training Pilot Programme on Mangrove Ecosystems in Asia and the Pacific (RAS/79/002), and Research and its applications to Mangrove Ecosystem Management in Asia and the Pacific (RAS/86/120). (1983-1989)
2. ASEAN-Canada Cooperative Programme on Marine Science (CPMS) Phase I and II (1983-1988 and 1991-1997)
3. ASEAN-Australia Economic Cooperation Programme (AAECP) Marine Science: Phase I Tides and Tidal Phenomena and Phase II Regional Ocean Dynamic. (1985-1989 and 1989-1992).
4. ASEAN-Australia Economic Cooperation Programme (AAECP) Marine Science-Project II: Phase I the Living Resources in Coastal Areas with Emphasis on Mangroves and Coral Reef Ecosystems; and Phase II Living Coastal Resources. (1985-1989 and 1989-1994)
5. ASEAN-US Cooperative Programme on Living Coastal Resources Management (CRMP) (1985-1992)

6. ASEAN-Australia Economic Cooperation Programme Phase III (AAECP III): Coastal Zone Environmental and Resource Management Project (CZERMP). (1994-1999)
7. ASEAN-EU Project on Coastal Zone Management: Interdisciplinary Scientific Methodologies for the Sustainable Use and Management of Coastal Resource System (Phase I and Phase II). (1995-1997 and 1997-1999).
8. GEF/UNDP/IMO Regional Programme for the prevention and Management of Marine Pollution in the East Asian Seas. (1994-1999) And Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). (1999- ongoing)
9. Coastal Zone Management Projects, supported by Denmark in SE Asia.(1992-2000)
10. Asian Development Bank's Regional Technical Assistance: ADA 5552- Coastal and Marine Environmental Management in the South China Sea Phase I and ADB 5712- Coastal and Marine Environmental Management in the South China Sea Phase II .(1994-1996 and 1999-2000)
11. Bay of Bengal Large Marine Ecosystem Programme(BOBLME)

Each of the projects provides information on source of information obtained, budget, executing agency, participating countries, objectives, activities, outputs/outcome and lessons learned, whenever possible.

The following table presents the objectives, outcome and lessons learned from those major regional projects.

Project	Outcome	Lessons learned
<p>1. UNDP/UNESCO Regional Projects-Research and Training Pilot Programme on Mangrove Ecosystems in Asia and the Pacific and Research and its applications to Mangrove Ecosystem Management in Asia and the Pacific. (1983-1989) Participating countries: 19 countries in Southeast Asia, South Asia, and Pacific. Objectives 1. To train scientists in conducting research for better understanding of mangrove ecosystem; 2. To conduct research on mangrove ecosystem in an integrated multidisciplinary manner in a selected site so that better understanding regarding mangrove ecosystem can be obtained and sound advice can be given to managers and planners; 3. To encourage countries in the region in managing mangroves in sustainable manner.</p>	<p>1. Knowledge of mangrove ecosystem in SEAsia 2. Awareness of significance of mangroves ecosystem to coastal productivity among managers and administrators in the region 3. Network of mangrove scientists in SEAsia and outside the region and creating International Society for Mangrove Ecosystem (ISME). 4. Capacity building of scientists in the region.</p>	<p>1. Integrated multidisciplinary research in the region was possible, however; it required coordination and support by international organization. 2. The project succeeded in generating regional interest in mangrove resources especially on research capability. It served as basis for continuation of regional mangrove activities under ASEAN-Australia LCR Project. 3. There was no follow up/evaluation of the program. There should be a follow up study on: - how training benefit each participating country; - the role of National Mangrove Committee (NATMANCOM) in each country.</p>
<p>2. ASEAN-Canada Cooperative Programme on Marine Science (CPMS) Phase I and II. (1983-1988 and 1991-1997) Participating countries: Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam. Objectives The overall objective was to upgrade ASEAN marine science capabilities through cooperative endeavors jointly undertaken by participating ASEAN countries and Canada. This was achieved through training, and the execution of, three major technical activities as follow:</p>	<p>1. Cooperation in marine science research between ASEAN scientists and Canadian scientists leading to creating network of scientists within ASEAN. 2. Capacity building of scientists in SEAsia. 3. Common set of ASEAN Marine Environmental Quality Criteria. 4. Enhancement of marine pollution monitoring programme and Red Tide Alert Network.</p>	<p>1. The project with clearly defined technical objective can be achievable under the regional cooperation. 2. Networking of scientists within the region cooperating on a common goal are possible providing that the project was properly planned and executed with close supervision and flexibility in implementation and planning. 3. Technology transfer has been achieved together with capacity building providing that the subjects were identified by the participating countries and the right selection of participating</p>

Project	Outcome	Lessons learned
<p>(i) developing tropical Marine Environmental Quality Criteria (EC); (ii) undertaking Pollution Monitoring and Baseline studies (PMB); (iii) investigating toxic Red Tides (RT) which cause shellfish contamination, marine fish kills, and human deaths</p>		<p>agencies. And countries that participated had adequate manpower and capability to receive technology transfer. 3. Considerable period of time and financial support are needed.</p>
<p>3. ASEAN-Australia Economic Cooperation Programme (AAECP) Marine Science: Phase I Tides and Tidal Phenomena and Phase II Regional Ocean Dynamic. (1985-1989 and 1989-1992) Participating countries: Indonesia, Malaysia, Philippines, Singapore, and Thailand Objectives (Phase I) The coordinated establishment of an adequate network of modern tide gauges in locations that serve the maritime needs of the member countries; 2. Training of personnel from ASEAN countries in installation and maintenance of these gauges; 3. Specialized training of selected personnel in the methods of physical oceanography; 4. Development of numerical models; 5. Facilitation of the exchange of information on tides and tidal phenomena within the ASEAN region. Objectives (Phase II) 1. To continue monitoring tidal level to obtain simultaneous data for: -calibration, validation and initialization of numerical models of the ASEAN seas, and -extraction of non tidal and long term signals..</p>	<p>1. Capacity building of scientists in Southeast Asia and collaboration on oceanographic research at regional level. 2. Increasing oceanographic knowledge with in the region especially on tidal data collection and prediction. 3. Networking of scientists.</p>	<p>1. The project has achieved its objective as it was designed base on the need of the participating countries and the countries have adequate capability to receive the technology transfer. 2. It is a good example of technical assistant project which achieved in capacity building and provided immediate benefit which are useful for participating countries. 3. Proper identification of incountry participating agencies has shown successful and sustainable results after project termination. 4. Successful case on regional scale requires considerable duration of time to provide tangible result.</p>

Project	Outcome	Lessons learned
<p>2. To continue consolidation of tidal knowledge using tidal models to infer and interpolate tidal information, and to use models to produce tidal stream information.</p> <p>3 To enhance development of human resources through a training program in hydrography</p>		
<p>4. ASEAN-Australia Economic Cooperation Programme (AAECP) Marine Science-Project II: Phase I the Living Resources in Coastal Areas with Emphasis on Mangroves and Coral Reef Ecosystems; and Phase II Living Coastal Resources. (1985-1989 and 1989-1994)</p> <p>Participating countries: Indonesia, Malaysia, Philippines, Singapore, and Thailand</p> <p>Objectives (Phase I).</p> <p>1. To generate management relevant baseline information for coastal and continental shelf ecosystems especially mangroves, coral reefs and soft-bottom communities throughout the ASEAN region;</p> <p>2. To establish an effective information exchange network relevant to coastal zone studies and management;</p> <p>3. To further develop the scientific and technical expertise in marine science and marine database management within the ASEAN region.</p>	<p>1. Creating regional baseline information on regional important coastal habitats i.e. coral reefs, mangroves, seagrasses and softbottom communities.</p> <p>2. Capacity building of scientists within the region and closer cooperation with Australian scientists.</p> <p>3. Strengthen the Network of scientists in the region.</p> <p>4. Methods used were later adopted for internationally used under Global Coral Reef Monitoring Network (GCRMN).</p> <p>5. Various countries used information obtained under this programme for management planning and further expansion of the activities to cover the whole countries.</p>	<p>1. Close cooperation among scientists in the region and Australian scientists had provided successful result. The scientists in the region had involved since designing the project.</p> <p>2. Project duration and substantial supporting budget mad it possible to create significant regional database which were useful at country level as well as on regional scale.</p> <p>3. Under phase II part of the activities concentrated on individual research projects which had achieved results in term of building research capability within the region.</p> <p>4. On remote sensing project under phase II, it provided only limited success to be used as research instrument. In introducing new and limited available innovative technique to the region. Only selected groups were able to be trained. Thus the achievable result was limited.</p>

Project	Outcome	Lessons learned
<p>Objectives (Phase II)</p> <p>1. To determine, on a regional scale, the medium to long term stability of the major living coastal resources and the biotic and abiotic factors affecting their degradation, recovery, or success of artificial rehabilitation.</p> <p>2. To determine the degree and mode of connection between the major coastal ecosystems viz., mangroves, soft bottom communities and coral reefs, with particular regard to commercial fisheries and long term impact prediction.</p> <p>3. To use the information derived from 1. and 2. for development of living coastal resource management models/policy and for enhanced alternative use strategy assessments.</p> <p>4. To encourage and assist in the dissemination of the scientific information and management policy formulation to decision makers and the general public at all social and economic levels, in order to increase awareness of the present and potential resource value of living coastal resources.</p> <p>5. To enhance human resource development through specialized and general training programmes.</p>		<p>5. The regional database was the largest regional database of coastal living resources especially for coral and mangrove resources. There had been considerable work in setting up format of database and training scientists to maintain and use them. However it had provided limited use at the end of the project and no further activity in maintaining the regional database after project termination. Some countries continued the resource inventory, monitoring activities and maintain country database. Success and failure of this exercise should be good lesson learned for future work on formation of regional as well as country database.</p> <p>6. Sustainability of the project at regional level. The ASEAN-Australia LCR project has been one of the projects that have often cited as a successful project on regional scale especially on coral reef resource subject and led to other global project such as GCRMN. However after the termination of the project, the continuity of the activities derived from the project was carried out on country basis by some countries, not as regional activity. Questions on how to sustain the regional activity or what kind of activities that should be carried out as regional activities should be addressed</p>

Project	Outcome	Lessons learned
<p>5. ASEAN-US Cooperative Programme on Living Coastal Resources Management (CRMP). (1985-1992)</p> <p>Participating countries: Indonesia, Malaysia, Philippines, Singapore, and Thailand.</p> <p>Objectives To increase existing capabilities with in the Association of Southeast Asian Nations (ASEAN) region to develop and implement comprehensive, multidisciplinary and environmentally sustainable coastal resource management (CRM) strategies through:</p> <ul style="list-style-type: none"> -analyzing, documenting and disseminating information on trends in coastal resources development; -increasing awareness of the importance of CRM policies and identifying, and where possible, strengthening existing management capabilities; -providing technical solutions to coastal resources use conflicts; -promoting institutional arrangements that bring multisectoral planning to coastal resources development 	<ol style="list-style-type: none"> 1. Preparation of specific area coastal zone management plan in each country. 2. Training participants in CZM planning 	<ol style="list-style-type: none"> 1. The exercise of creating integrated coastal zone management plan was useful for country members in attempting to bring together various government agencies to planning on coastal area uses. It was a good attempt and lesson learned for the sectors involved to work together in planning process. 2. The project did not extend to implementation phase. Thus it had limited use for the actual coastal zone management in the area except it can serve as the guideline for the government to be used. However, if the implementation phase does not carry out within certain period of time, the plan would become obsolete and it also losses the memory of cooperated planning 3. The coastal zone management requires longer period of time than most available aid agencies can provide. Thus implementation of integrated coastal zone management would need political will and commitment by the authorities both national and local government to carry on with/without the external support.
<p>6. ASEAN-Australia Economic Cooperation Programme Phase III (AAECP III): Coastal Zone Environmental and Resource Management Project (CZERMP).(1994-1999)</p> <p>Participating countries: Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam.</p>	<ol style="list-style-type: none"> 1. Creating National Environment and Resource Information Center (NERIC) in each country of which their fates have not been follow up under this survey except for Thailand 2. Outcome on using information technology developed by NERIC for coastal zone management in the region is not known. 	<ol style="list-style-type: none"> 1. It was the first regional activity which attempted to provide the information system to the policy makers as well as resource managers. The project had limited success and was not sustainable after the end of foreign aid. For future project, it should carefully considered both on the aspect of setting up NERIC in each country as well as the objective of linking the network.

Project	Outcome	Lessons learned
<p>Objectives</p> <p>1. To support sustainable development of the coastal zone by enhancing national and regional management capacity and supporting infrastructure;</p> <p>2. To derive the maximum development benefit from data on the biophysical and socio-economic development through the wider availability of data; and</p> <p>3. To facilitate the more efficient transfer of data storage agencies (principally universities and government agencies) to resource and environment managers (policy and decision makers)</p>	.	<p>2. Appropriate designated agencies should be carefully considered for the sustainability of the project after ending of foreign aid.</p> <p>3. The Information Support System technology was relatively new in the region during the period of project implementation. Thus capability in each country was still limited.</p> <p>4. The lesson learned for regional network would be that if NERIC in each country could not be set up the exchange of information could not be continued. Thus for future activity, attention should be on effort to establish sustainable information system for member countries which are still not able to establish such system.</p> <p>5. No comment can be made about the regional database information project. Further investigation should be made if there was any regional database project.</p>
<p>7. ASEAN-EU Project on Coastal Zone Management: Interdisciplinary Scientific Methodologies for the Sustainable Use and Management of Coastal Resource System (Phase I and Phase II).(1995-1997 and 1997-1999)</p> <p>Participating countries: Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam.</p> <p>Objectives</p> <p>1. To create a knowledge base and set of rules and the interdisciplinary protocols for the expert system SIMCOAST for the sustainable use and management of coastal resource;</p>	<p>1. Generating software SIMCOAST for coastal resource management. The fate of software is not known except in Thailand which could not be operated properly.</p>	<p>This is also another example of effort in trying to introduce information technology which was still in developmental stage into the region and failed to develop any further due to termination of the project.</p>

Project	Outcome	Lessons learned
<p>2.To facilitate the use of interdisciplinary approaches by resource managers, researchers, planners and policy-makers through the successful testing and implementation of SIMCOAST;</p> <p>3. To create an information network of the coastal zone for resource managers, researchers, planners and policy-makers.</p>		
<p>8. GEF/UNDP/IMO Regional Programme for the prevention and Management of Marine Pollution in the East Asian Seas. and Partnerships in Environmental Management for the Seas of East Asia (PEMSEA).(1994-1999 and 1999-ongoing)</p> <p>Participating countries:Brunei Darussalam. Cambodia, China, Republic of Korea, Democratic People’s Republic of Korea, Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam.</p> <p>Objective To support the efforts of its participating governments to prevent and manage marine pollution at the national and sub-regional levels on a long-term and self-reliant basis. PEMSEA has several programme components which have their own objectives and activities.</p>	<p>1 The first regional project on coastal zone management which carried on to implementing phase with diverse objectives and activities with diverse demonstration sites.</p> <p>2. Capacity building in planning and management of coastal areas</p> <p>3. Achievement of implementing Integrated Coastal Management (ICM) in marine pollution management in a site, Xiamen, China.</p> <p>4. Maintenance of a database on coastal and marine environment in East Asian Seas.</p>	<p>Experiences and lessons learned from ICM demonstration sites can be applied else where. Prior to this project, most of ICM projects in the region ended only at planning stage. The GEF/UNDP/IMO Regional Program was the first one that actually tried to implement it. Lessons learned from Xiamen and Batangas demonstration sites are valuable lessons for the future projects in marine pollution management.</p>
<p>9. Coastal Zone Management Projects, supported by Denmark in SE Asia.(1992-2000)</p> <p>Participating countries: Cambodia, Malaysia, Thailand and Vietnam</p>	<p>Diverse activities in various location including capacity building through training and education as well as research programmes. The success/failure can not be evaluated due to limit information provided.</p>	<p>The projects were quite diverse in topics and participating partners in each country. Thus the achievement has to be considered from each project by itself, not the success in regional scale.</p>

Project	Outcome	Lessons learned
<p>10. Asian Development Bank's Regional Technical Assistance: ADB 5552 - Coastal and Marine Environmental Management in the South China Sea Phase I and ADB 5712- Coastal and Marine Environmental Management in the South China Sea Phase II (1994-1996 and 1999-2000)</p> <p>Participating countries: Cambodia, People's Republic of China and Viet Nam.</p> <p>Objectives To strengthen the capacity of the participating countries to sustainably manage coastal and marine resources.</p>	<p>Formation of an atlas of coastal and marine environmental management of South China Sea, and strategic coastal and marine environmental management plan for Cambodia, southern provinces of China and Viet Nam</p>	<ol style="list-style-type: none"> 1. The executing agency with local expertise and knowledge as well as good working relationship with central and local government is a key factor of success. 2. The interest of counterpart is also a subject to be considered as it was cited about the inactive of a counterpart led to less than anticipated results in terms of capacity building and sustainability. 3. The capability of country to be counterpart of the activities should also be considered as some country has limited manpower to fully engage in aid project. 4. There should be a follow up of the results whether recommendations regarding country strategy and programmes have been used for countries development
<p>11. Bay of Bengal Large Marine Ecosystem Programme (BOBLME). (On going in planning state)</p> <p>Participating countries: Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka and Thailand.</p>	<p>The programme is still on planning phase. It will be beneficial to study lessons learned from previous large scale regional projects.</p>	

In addition there have been other regional activities which run by regional offices based in the region which carried out activities involving in coastal and marine environment besides the Regional Sea Program. These are CCOP, IOC/WESTPAC, SEAPOL and SEA START RC.

Examples of large scale national and bilateral projects related to marine environments in East Asian Seas are also given to provide more scope of the activities related to marine environment within the region. However the lists are just examples to inform about the bilateral activities of donor agencies, and some large national projects which receive some assistances from outside. These are examples from Indonesia, Thailand, Viet Nam and Cambodia.

Indonesia

Being the largest archipelagic state in the world, Indonesia has recognized the value of its marine environment and resources. Indonesia has received substantial assistances from other countries, international NGOs and international funding agencies in various ways such as human resources development, resource inventory and mapping, marine protected areas and coastal zone management. Examples given are

1. Projects under National Coordination Agency for Surveys and Mapping (BAKOSURTANAL). It is a national action programme covering: base mapping; natural resource inventory and evaluation; natural resources information system, and manpower development programme on modern survey and mapping technology. The agency maintains and manages the central node of the Natural Resources Information System.

1.1. The Digital Marine Resource Mapping Project(DMRM) is a project carried out by BAKOSURTANAL in cooperation with DISHIDROS TNI-AL (the Naval Hydro-Oceanographic Service), and the Agency for the Assessment and Application Technology. As this activity serves the requirement of UNCLOS'82 on the verification and recording of the base points and baselines, territorial sea, contiguous zone and the continental shelf. The DMRM was initiated in early 1996 and duration of initial phase of 3 years.

1.2. Marine Resources Evaluation and Planning (MREP) Project (1993-1998). MREP was another marine related activities carried out under BAKOSURTANAL and the Directorate General for Regional Development. The MREP was the project which received some support from Asian Development Bank. The objectives are to improve the marine and coastal planning and management capability in ten provinces and further develop and strengthen the existing marine and coastal information system.

2. Coastal Resources Management Project (1996-2003).It is the natural resources management plan being implemented under USAID-BAPPENAS (National Development Agency). The goal of the project is to achieve measurable progress towards the strategic objective of decentralized and strengthened natural resources management

3. Coral Reef Rehabilitation and Management Programme (COREMAP). The COREMAP goal is the protection, rehabilitation, and sustainable utilization of coral reefs and associated ecosystems in Indonesia which will enhance the welfare of coastal communities. The programme duration is 15 years with Phase I, initiation phase starting 1998-3 years; Phase II, acceleration phase-6 years; and Phase III internalization phase-6 years. The objective of the COREMAP during initiation phase was to establish a viable framework for a national coral reef management system in Indonesia. The COREMAP were to be supported by the World Bank, the Global Environmental Facility, ADB, the Australian Agency for International Development, and the Japan International Cooperation Agency.

There are also other site specific local coastal zone management projects and marine protected areas projects which are supported by the international and donor organization such as: Riau Coastal Zone land- use management project which was supported by UNDP; Banten Bay Integrated Coastal Zone Management project which was the cooperation between Indonesia and the Netherland and being part of the LOICZ (Land Ocean

Interaction in the Coastal Zone); development of the Bunaken National Park with assistance of USAID.

Thailand

There have been some cooperation through bilateral programmes between Thailand and other countries in human resources development, institutional strengthening, research and management of coastal and marine environment. The following examples are some of the large scale assistances since 1980s.

1. Strengthening of the research capability of the Phuket Marine Biological Center (PMBC). PMBC is the research institution established under bilateral cooperation between Thailand and Denmark in 1968. The objectives of the PMBC are to conduct research and training in marine biology. The assistance provided experts and equipment to initiated research in the Andaman Sea as well as graduate education and training in Europe. After the first phase of bilateral programme in 1970s, PMBC maintained the working relationship and received some assistance from DANIDA periodically. The major second phase of the assistance came during 1994-2000 to further strengthening the research activities, human resource development and expanding research capability into open sea under the project “Supply of a Marine Research Vessel for Phuket Marine biological Center”.
2. USAID/University of Rhode Island (URI) Thailand Coastal Resources Management Project. (1986-1992). The goal and objectives were to focus community attention on coastal management issues through local initiatives, and to use the lessons learned through project implementation as well as the public support generated to develop a national coastal resource management policy. The second phase of USAID/URI Project was to strengthen local coastal resources management capability by assisting Prince Songkhla University to set up the Coastal Resources Institute in 1989.
3. Coastal Habitats and Resources Management (CHARM)(2002-2007). CHARM is an ongoing European Union-Thailand Cooperation Project. The objectives are: to improve conditions of the coastal habitats by adjusting the natural resources management framework through co-management by the government, local communities and the private sector; and to promote institutional development by enhancing the capacities of the Government, local communities and the private sectors in identifying and providing practical and sustainable technical solutions to the current problems of coastal resource management

Vietnam

There have been substantial bilateral and regional cooperation projects in Vietnam. The listed bilateral projects as given in 1998 were as follow: Vietnam-Canada Environmental Programme, with one case study on coastal zone management (focus on industrial waste dumping management);SIDA/SAREC-Vietnam project on capacity building on marine environmental research for the Institute of Oceanology ;Vietnam- Netherlands project on the development of solutions to protect the environment in Halong Bay; GEF-funded project on biodiversity conservation; SIDA/IUCN technical assistance project on strengthening environmental management capacity; World Bank-Vietnam project on environmental management in Ha Long Bay area; NASDA/ESCAP project on monitoring

tidal wetland distribution and its change in the coastal zone of north Vietnam (RA-96-001); and IOC/WESTPAC programme on red tide monitoring.

Cambodia

There are substantive list of foreign aids related to coastal and marine environment of Cambodia as obtained from the EAS/RCU office. The examples are: Participatory management of mangrove resource (IDRC); Baseline study for landbased pollution (WB/GEF); and Environmental management of the coastal zone (DANIDA).

PART II: SYNTHESIS

Prior to the initiation of ASEAN–dialogue partners’ projects, there had been ongoing research activities under EAS/RCU and WESTPAC on some subjects concerning coastal living resources and marine pollution. Thus there were some overlapping activities on some of regional projects created under EAS/RCU and IOC/WESTPAC with some of ASEAN–dialogue partner projects and quite often dealing with the same group of participants in the region. For example the RT project under CPMS is the same subject as IOC/WESTPAC activities. However, the project under CPMS was on larger scale and provided more comprehensive activities than research activity under HAB project of WESTPAC. The other example is on coral reef resources inventory which was initiated in the region by group of scientists with some partial support from both EAS/RCU and UNESCO/COMAR. The activity led to the recognition of the need for broader regional activities and subsequently became part of the ASEAN-Australia Living Coastal Resources Project.

It can be said that the early activities initiated under UN organizations had initiated network of activities which later the ASEAN member countries had expanded into projects for requesting assistance from ASEAN dialogue partners. As the ASEAN–dialogue partners projects provided more comprehensive support in term of budget for implementing the activities which countries in the region could not provide from their own budget, technology transfer as well as capacity building.

In 1980s the projects in East Asian Seas were mainly involved 5-6 countries of the original ASEAN countries i.e., Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand. Vietnam and Cambodia joined the activities in ASEAN network after 1995. The projects between ASEAN countries and dialogue partners as listed in Part I can be grouped into 3 major subjects.

1. Projects on coastal living resources, marine pollution and physical oceanography with emphasis on human resource development and strengthening existing research capability;
2. Projects on information management;
3. Projects on coastal zone management.

1. Projects on coastal living resources, marine pollution and physical oceanography with emphasis on human resource development and strengthening research capability

From Part I, it can be seen that the donor projects in 1980s and early 1990s were dealing with technical assistance on coastal living resources, marine pollution and physical oceanography with the aim of technology transfer. Thus the activities have certain emphasis on human resources development and strengthening research capabilities of ASEAN countries. The subjects involved were: mangrove ecosystems (UNDP/UNESCO Mangrove Project); status of mangroves, coral reefs, seagrasses and soft bottom communities (ASEAN-Australia Living Coastal Resources Phase I&II); physical oceanography (Tide and Tidal Phenomena and Regional Ocean Dynamic); and marine pollution (ASEAN-Canada CPMS I& II).

The results achieved under the cooperative activities have been beneficial to the ASEAN countries in various ways. The direct benefits are providing baseline information on coastal living resources, coastal water qualities and improving understanding on tide and tidal phenomena in the region. Information obtained has been used for planning and management of coastal resources, setting up coastal water quality criteria and improvement of tide prediction. The other indirect benefits which have long lasting results are human resource development and strengthening research capability within the region.

It is worth noting that “new technology such as remote sensing” was also introduced with limited success. It may be due to various factors, for example problems with identifying right agencies to execute the project on long term basis, and technology was fast developing and subsequently became out of date after project termination.

In conclusion, it can be said that the projects had been successful in technology transfer, of which the impact has extended beyond the life time of the projects. The regional activities created by international organizations such as EAS/RCU, UNESCO, IOC/WESTPAC as well as donor agencies to countries in Southeast Asia have helped in strengthening human resource development of the region. The technical assistances that donor projects provided during 1980s and early 1990s have increased marine scientific knowledge and capacity building in this region to the level that it can be applied for management planning as well as direct uses such as tidal prediction. It was the right opportunity for human resource development in research capacity in marine environment and living resources. Substantial progresses have been made in term of advance knowledge to help countries in the region to solve their own marine resources and environment problems. For future activities, several issues should be taking into consideration.

1. Human resource development is important and a continual process. The countries within the region still need technology transfer from outside the region as well as strengthen capability among countries in the region. Within the region, countries differ greatly about capacity to deal with their own resources development. Certain countries may need assistance on some subject than the others. Besides direct foreign aids obtained by several ASEAN countries, the opportunity of using availability of expertise in the region to strengthen capability of other member countries should also be examined. The benefit of working as a regional group is that they can help each other in training and executing

projects with better understanding of working environment. As the regional body, the activities which maintain the networking of scientists in the region should be encourage.

2. Sustainability of the regional activities after the end of cooperation. After termination of donor assistance, most regional activities stopped. Some activities have been continued on smaller scale as in country activities depending upon government policy, priority, and funding availability. For some government institutions the activities learned during the projects were built in as part of their job responsibilities thus providing the continuity of activity within the country. However, the program lost the regional component. The Regional Database of LCR project is an example to be discussed later. For future regional activities, it should address this question in maintaining regional activities after project termination.

2. Cooperative Programme on Management of the Information System

Data management for coastal zone management. There were two regional projects directly addressed the data management for management of coastal zone:

1. The Coastal Zone Environmental and Resource Management Project (CZREMP) emphasized management of the data for assisting national and regional coastal area management capacity.(1994-1999)
2. ASAN-EU Interdisciplinary Methodologies for the Sustainable Use and Management of Coastal Resources.(1995-1999)It was a cooperative effort between the EU, the International Center for Living Aquatic Resources Management (ICLARM), and ASEAN to develop tools for integrated coastal zone management in ASEAN countries.

These 2 projects were developed about the same period (1994-1999). They addressed the issues of development of data management system for integrated coastal zone management. That was only natural step following earlier projects which had contributed to data gathering and capacity building in the region on inventory of coastal resources and initiating the integrated coastal zone management program (ASEAN-USAID CRMP) at about the same period. Thus there was the need for information technology to help in assembling data collected in the form that could be accessible for decision makers, managers and others to be used in planning and making the decision.

Under the CZREMP, a National Environment and Resource Information Center was proposed to be established in each country and to maintain metadatabases on marine and coastal data for each country and develop a case study for utilizing information technology to assist in coastal resource management. Under this review, information regarding performance of NERICs in other ASEAN countries besides Thailand is not available. There was no further progress of Thai NERIC after the end of the project. Demonstration of applying geographic information system as the tool for decision making had been demonstrated. However the project did not succeeded in creation of network of NERICs in the region. The reviewer also could not find the result of regional demonstration as proposed.

For the ASEAN-EU project, it placed the emphasis on tool development to create a knowledge base and set of rules for the software of the expert system call SIMCOAST.

From information obtained in Thailand the SIMCOAST was not compatible with the computers to be used in the office. No further development after producing software. Base on information available in such limited time, it is concluded that not much progress had been made on projects related to data management projects. It is worthwhile to investigate further whether any countries in the region have made any progress on their own in establishing the information management system on coastal and marine resources. With the capability and progress that have been made on research capability, management of information derived from such activities would only be the next move toward management of coastal and marine resources base on sound scientific information.

Regional Database of Living Resources. During the ASEAN-Australia LCR activities, considerable efforts had been placed on establishing database and data management. The Regional Database of Living Resources was set up. The regional data was used to analyze the pattern or status of some resources in the region i.e., coral reefs and, reef fish communities. It was the first regional database and it ceased to function as there was no viable mechanism to sustain the database after the termination of the project.

The other regional organization which is interested in management of information system is IOC/WESTPAC. In 1999, IOC/WESTPAC organized a conference on the International Oceanographic Data and Information Exchange in the Western Pacific (IODE-WESTPAC) in Malaysia to review about status of oceanographic and marine data status and problems facing the countries in the region. IOC also has just established SEA GOOSE project in this region.

In conclusion, considerable efforts had been placed on establishing database and data management, there should be some lessons learned from past experiences to provide the benefit of future direction in managing information system.

1. As good working database is definitely useful for country development, the regional cooperation for management of information system for the benefit of member countries which have not yet managed to establish the country living resource database is worthwhile considering. If member countries consider that the regional activities on information management are still relevant, a fact finding mission or regional workshop/seminar on databases/ metadatabases of coastal and marine environment and resources to review current status and the need of information management system for participating countries would be worthwhile considered.

2. As for the significance of regional database, it should address the question of users of regional database. Besides regional/global organizations and scientists, the usefulness of regional database to each country would be less than that of its own country database. The national database/metadatabase network should exist together or before the regional databases. The main source of regional database should derive from country database(s), if the project is to be sustainable. Therefore it is recommended that if the regional databases are to be created the efforts should be made to strengthen country capacity to formulate its database or network of databases. It is worth noting that in this region there are some organizations which are serving as information centers at global level (the World Fish Center, formerly ICLARM), which maintain the Reefbase and Fishbase and at regional

level(SEA START RC). How the regional database can link to those established databases should also be considered.

3. Cooperative Programme on Coastal Zone Management

The first regional activity on coastal zone management (CZM) was the ASEAN-US Cooperative Programme on Living Coastal Resources Management Programme (CRMP). The programme involved 6 countries. For each country the demonstration site was selected and an integrated coastal resources management plan was prepared. The activities of the first few years involved in field work data collecting. It was the learning process of coastal resources management planning. No implementation was carried out under the programme. Thus those who participated in the programme had gained experiences in preparation of plan. However, the memory of such exercise is not useful if the actual activities are not carried out in appropriate time afterward.

The other regional project to follow was GEF/UNDP/IMO Regional Programme for Prevention and Management of Marine Pollution in the East Asian Seas during 1994-1999. The programme had several components with the aim to prevent and manage marine pollution at national levels. It can be said that it is coastal area management with the specific issue on marine pollution. It also benefits from lessons learned from ASEAN-USAID CRMP experience in adapting ICZM concept to the ASEAN countries. Emphasis has been on partnership among various sectors involved in planning and implementation of the management activities. The project carried on to the next phase “PEMSEA” which is an ongoing programme with expansion of further actions in to more sites. The Xiamen Demonstration site is the longest project activity on coastal area management which has been ongoing by any regional programme.

It is worth noting that on coastal area management, there have been several bilateral programmes in various countries as examples given in Part I. With all the ongoing bilateral projects in each country, any initiative by regional activities on coastal area management should be carefully considered, by using lesson learned from past experience. It is obvious that achieving successful outcome would require considerable time of which most of the aid programme can not provide. In addition coastal area management involves many sectors including various government agencies, private groups and public. Therefore correct identification of stakeholders and their commitment and cooperation are of importance to the long term success of such demonstration project to be used as example for future activity.

Other important subjects which should be subjects for future consideration, i.e. marine biodiversity and marine protected areas. The issues on marine environment and resources which are recognized as of global importance that should be considered at regional level are strengthening research capability in marine biodiversity and management of marine protected areas.

1. Strengthening research capability in marine biodiversity.

East Asian Seas are the center of marine biodiversity of the Indo-West Pacific biogeographical region. Recognition of the areas as of global importance, attentions and actions have been on maintaining biodiversity or reducing biodiversity lost.

In 2001, WESTPAC conducted the IOC-Census of Marine Life Workshop on Marine Biodiversity in SE Asia. No follow up action has been made. There is no specific plan to assist countries in the region in capacity building on biodiversity research and training. Some bilateral project and interest of individual scientists exist such as Darwin Initiative Project between Thailand and United Kingdom.

Current activities at regional level which relate to marine biodiversity

1. The UNEP/GEF Project ‘Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand’ would serve the objective of assisting in managing habitats and prevention on reducing biodiversity.
2. ASEAN Center on Biodiversity based in Philippines. It has received some assistance from EU. Not much activity has been reported in term of regional activities from the Center especially on marine biodiversity.
3. The cooperation in marine biodiversity research in the region with Japan through Japanese Society for Promotion of Science (JSPS). It is a 5 year program starting 2001. The participating countries in the region are Indonesia, Malaysia, Philippines, Thailand and Viet Nam. The ultimate goal is to improve predictions regarding the magnitude and extent of subsequent alterations to marine biodiversity in the region.

Inadequate taxonomic knowledge is an obstacle for future effort in conservation of biodiversity in the long term. Most countries need assistance in taxonomic study of marine taxa. At present, within the region there are some haphazard regional trainings on certain selected taxa base on some interest groups. However, the intensive training activities as well as comprehensive plan in supporting taxonomic work are missing. The countries in the region are in need of more scientists in the field of marine biodiversity. The efforts in training specialists in the postgraduate level should combine together with the secure job positions. There is an urgent need for the region to consider investing on capacity building and maintaining core of marine taxonomists in the region to continue building up knowledge on biodiversity to support the action in conserving/maintaining their own marine biodiversity resources.

2. Management of Marine Protected Areas (MPAs)

Marine Protected Areas are considered to be an important mean in conserving marine biodiversity. The need for marine protected areas has been generally accepted by all countries globally. There are many conventions related to MPAs. In the region, there are considerable progress regarding MPAs. Through AWGCME, ASEAN has set up the criteria for Regional MPAs as well as review the status of MPAs in the region. In addition

there are many bilateral programmes from donor countries, international NGOs, and local NGOs to assist some countries on managing MPAs as some examples mentioned under bilateral projects in this report.

However, countries in the region share common problem regarding MPA management that it is worthwhile considering activities on regional scale. The most urgent subjects in MPAs management in the region are establishing management plan on sound scientific basis, implementing management plan especially on specific issues such as participation of stakeholders in management of MPAs as declaration of many MPAs have affected livelihood of local people. Increasing trend of managing MPAs for recreation purposes may also have undesirable effect on maintaining biodiversity on sustainable basis. On the regional scale, it is good opportunity to assist each other through sharing experiences for managing the MPAs base on each country experience as well as learning from successful cases within/outside the region.

CONCLUSION AND RECOMMENDATIONS

In reviewing major regional activities for the past 2 decades, there were 3 major subjects for regional activities, i.e. assistance on technical subject matters, information management system, and coastal area management. In evaluation of the outcome of the programmes, it can be seen that there are several key factors in making the programmes successful.

The “success” programmes were technical assistance programmes on environment and biological resources which most of the participating countries had the need and capability to assimilate into their own works. The other factors for the key success projects are adequate finance for considerable time. For example, the ASEAN-Australia Marine Science LCR and ASEAN-Canada CPMS which lasted for about 10 years and with sizable budget and duration had achieved some substantial results.

The only regional coastal area management project which had been carried out through implementation phase was the GEF/UNDP/IMO project which extended to become PEMSEA. The project on coastal management would require more effort on social and political aspects than in technical assistant projects, and the outcome would require longer time to achieve.

The projects which did not provide significant outcome were programmes on information management system involving establishing and maintaining database and setting up tools for information management. To decide whether this activity is still needed for most of the countries in the region, a fact finding mission or regional workshop/seminar on databases/metadatabases of coastal and marine environment and resources to review current status and the need of information management system for participating countries would be worthwhile considering. The success on country database can then be the basis for regional database. A regional database would be viable and sustainable only when participating countries have their own workable databases which can feed into the regional database and in turn they can learn from regional database.

For future activities, it is concluded that the region is still in need for outside support on both funding and technical knowlege. However, countries members need to decide about

the direction of cooperation with donor agencies as the dialogue partners and/or through coordination assistance of EAS/RCU to avoid overlapping of the activities and maximize the benefit of assistance from outside the region.

It is also worth noting that for some activities, assisting among member countries within the region can be beneficial as there have been substantial expertise building up within the region. Thus strengthening of networking and collaboration among regional experts should be encouraged.

With experiences from major regional projects, lessons learned from the past experiences should be analyzed for future planning activities. Additional subjects to be considered at the regional level are topics which relate to important global issues on marine biodiversity, i.e., strengthening capability in inventory of marine biodiversity and maintaining effective marine protected areas.

Recommendations for future consideration

1. Convening a meeting of group of experts/responsible personals in considering the outcome and lessons learned of the projects and further recommendation on how regional activities should proceed base on past experience, current need of the region, capability of country/region, and availability of funding support.
2. Establishing an Expert consultation group for future activities.
3. Member countries should share experience and assist weaker partners in strengthening their capabilities.
4. The region still needs financial and technical support from outside. Member countries need to decide the appropriate venue of projects whether to be regional projects with coordination assistance of EAS/RCU or bilateral projects of ASEAN-dialogue partners/bilateral projects of individual countries and donor countries.
5. For future regional activities, it should be taken into account regarding the time require in achieving desire results when the projects are to be executing on the regional scale.
6. Capacity building on technical matters/technologies is still needed. Subjects should be selected base on the need of the region and capability within the region to assimilate them.
7. For future regional activities, availability of expertise in the region should be considered.
8. In planning for future project on Information Management System, it should take lessons learned from the past. A fact finding mission or regional workshop/seminar on databases/metadatabases of coastal and marine environment and resources to review current status and the need of information management system for participating countries is recommended.

9. For regional database/metadatabases, network of country databases/metadatabases which can be accessible on regional scale including linkage to other existing database sources in the region is preferable.

10. The region needs more successful models on coastal area management. The past activities should be used for lessons learned in planning for the future ones.

11. The region needs to consider investing on capacity building and maintaining core of marine taxonomists in the region for marine biodiversity conservation.

12. Regional activity on MPAs management is recommended.

Acknowledgements

This report can not be completed without assistances from various persons. The list of persons/organizations that provide information, useful comments and discussions are listed below:

- Dr. Nawarat Kraipanond and colleague, OEPP providing information, assisting in literature search and accessibility to working documents of ASEAN COST Committee;
- Dr. Anond Snidvongs and colleague, SEA START RC, providing information, accessible to library collection and discussion;
- Dr. Supichai Tanjaitrong, Chulalongkorn University, Thailand, on discussion and information regarding the Regional Database under LCR Project;
- Dr. Pornsuk Chongprasit, Pollution Control Department, Thailand for information and valuable insight regarding ASEAN-Canada CPMS and the outcome;
- Dr. Kallaya Watanayakorn, Chulalongkorn University, for general discussion and accessibility to the late Dr. Suraphol Sudara's ASEAN-Australia document file;
- A WESTPAC officer for assistance in literature search at the WESTPAC office;
- The office of Thai focal point of BOBLME project and office of CHARM project;
- Dr. Magnus Torell, SIDA officer on information of SIDA project under ADB and general discussion about general constraints regarding sustainability of the projects after termination of aid in the region;
- Dr. Somchai Bussarawit, Phuket Marine Biological Center, Thailand, for discussion and information regarding current status of marine biodiversity research in the region under JSPS;
- Dr. Suharsano, Indonesia, and Professor Chou Lok Ming, National University of Singapore, Singapore, on progress on coral reef work in Indonesia after ASEAN-Australian LCR, status of regional database and future cooperation on regional data network;
- Prof. Ong Jin Eong and Prof. Gong Wooi Khoon, University of Sains Malaysia, Malaysia; and Dr. Sonjai Hawanon, Department of Marine and Coastal Resources, Thailand, for follow up activities regarding training projects on mangroves in the region;
- Special thanks to Connie Chiang and Yihang Jiang in assisting in literature search and comments on report preparation. Dr. Srisuda Jarayabhand's comment on final version is greatly appreciated.