

# Securing the Future through ICM: The Case of the Batangas Bay Region



GEF/UNDP/IMO Regional Programme on Partnerships in  
Environmental Management for the Seas of East Asia  
(PEMSEA)



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June 2006

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## MISSION STATEMENT

The Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) aims to promote a shared vision for the Seas of East Asia:

“The resource systems of the Seas of East Asia are a natural heritage, safeguarding sustainable and healthy food supplies, livelihood, properties and investments, and social, cultural and ecological values for the people of the region, while contributing to economic prosperity and global markets through safe and efficient maritime trade, thereby promoting a peaceful and harmonious co-existence for present and future generations.”

PEMSEA focuses on building intergovernmental, interagency and inter-sectoral partnerships to strengthen environmental management capabilities at the local, national and regional levels, and develop the collective capacity to implement appropriate strategies and environmental action programs on self-reliant basis. Specifically, PEMSEA will carry out the following:

- build national and regional capacity to implement integrated coastal management programs;
- promote multi-country initiatives in addressing priority transboundary environment issues in subregional sea areas and pollution hotspots;
- reinforce and establish a range of functional networks to support environmental management;
- identify environmental investment and financing opportunities and promote mechanisms, such as public-private partnerships, environmental projects for financing and other forms of developmental assistance;
- advance scientific and technical inputs to support decisionmaking;
- develop integrated information management systems linking selected sites into a regional network for data sharing and technical support;
- establish the enabling environment to reinforce delivery capabilities and advance the concerns of nongovernmental and community-based organizations, environmental journalists, religious groups and other stakeholders;
- strengthen national capacities for developing integrated coastal and marine policies as part of state policies for sustainable socioeconomic development; and
- promote regional commitment for implementing international conventions, and strengthening regional and subregional cooperation and collaboration using a sustainable regional mechanism.

The 12 participating countries are: Brunei Darussalam, Cambodia, Democratic People’s Republic of Korea, Indonesia, Japan, Malaysia, People’s Republic of China, Philippines, Republic of Korea, Singapore, Thailand and Vietnam. The collective efforts of these countries in implementing the strategies and activities will result in effective policy and management interventions, and in cumulative global environmental benefits, thereby contributing towards the achievement of the ultimate goal of protecting and sustaining the life-support systems in the coastal and international waters over the long term.

Dr. Chua Thia-Eng  
Regional Programme Director  
PEMSEA



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## List of Abbreviations and Acronyms

BABR	-	Balayan and Adjacent Bays Region
BBDP	-	Batangas Bay Demonstration Project
BBR	-	Batangas Bay Region
BBREPC	-	Batangas Bay Region Environment Protection Council
BBW	-	Batangas Bay Watch
BCRMF	-	Batangas Coastal Resources Management Foundation
BEPC	-	Batangas Environmental Protection Council
BOD	-	biochemical oxygen demand
CENRO	-	Community Environment and Natural Resources Office
CEP	-	Coastal Environmental Profile
COD	-	chemical oxygen demand
DENR	-	Department of Environment and Natural Resources
DO	-	dissolved oxygen
EIA	-	environmental impact assessment
FAO	-	Food and Agriculture Organization
GEF	-	Global Environment Facility
GIS	-	geographic information system
ICM	-	integrated coastal management
IEC	-	information-education-communication
IIMS	-	Integrated Information Management System
IMO	-	International Maritime Organization
IWMAP	-	Integrated Waste Management Action Plan
KKK	-	<i>Kilos Kabayan para sa Kalikasan</i> (Citizens Action for Nature)
LGU	-	Local Government Unit
MENROs	-	Municipal environment and natural resources offices
MOU	-	Memorandum of Understanding
MPP-EAS	-	GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas
NGO	-	nongovernmental organization
PAO	-	Provincial Agricultural Office
PCG	-	Philippine Coast Guard
PEMSEA	-	GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia
PENRO	-	Provincial Environment and Natural Resources Office

PG-ENRO	-	Provincial Government-Environment and Natural Resources Office
PMO	-	Project Management Office
PO	-	people's organization
PPA	-	Philippine Ports Authority
PPP	-	Public-Private Partnerships
RPO	-	Regional Programme Office
SEMP	-	Strategic Environmental Management Plan
SMEs	-	small and medium enterprises
SWM	-	solid waste management
TWG	-	Technical Working Group
UNCED	-	United Nations Conference on Environment and Development
UNDP	-	United Nations Development Programme
UP	-	University of the Philippines
UP-MSI	-	Marine Science Institute - University of the Philippines
UWEP	-	Urban Waste Expertise Programme
WWF	-	World Wild Fund for Nature

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## Introduction





# 1 Introduction

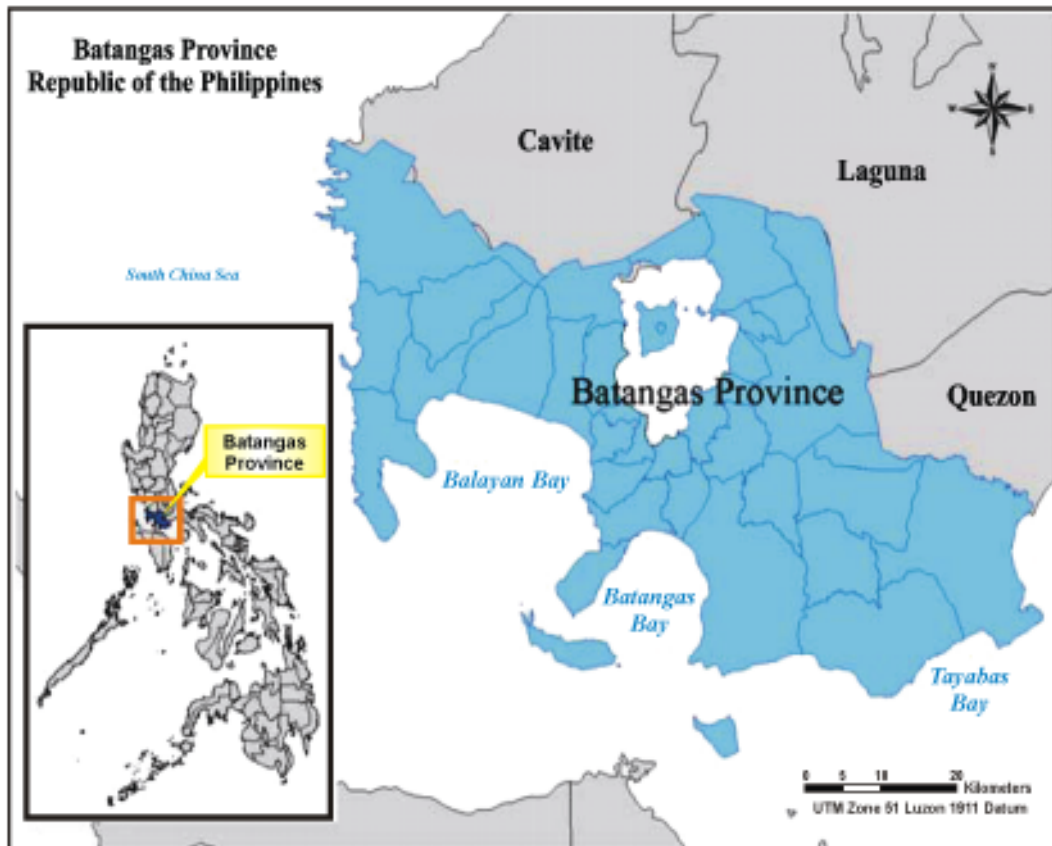
## BACKGROUND OF BATANGAS PROVINCE AND NATURAL SETTING OF BATANGAS BAY

Batangas Province is located along the southwestern edge of Luzon Island. The province faces the South China Sea on its western flank and the Verde Island Passage to the south. Batangas Province is bordered by the provinces of Cavite to the north, Laguna to the northeast and Quezon to the east. The province has a land area of approximately 3,166 km<sup>2</sup> and consists of 34 cities

and municipalities with a combined population of 1,905,348 as of 2002. Population density for the province is placed at 602/km<sup>2</sup>. The provincial population growth rate is 3.02 percent, a little higher than the national growth rate of 2.3 percent.

Batangas became a province in 1581. Prior to this, it was grouped with the Mindoro and Marinduque islands along with parts of Laguna and Ambos, Camarines, collectively known as Bonbon or Balayan. Since 1754, the provincial

Figure 1. Map of Batangas Province.



capital has been Batangas City, which borders Batangas Bay. The province has three major bays namely: Batangas Bay, Balayan Bay and Tayabas Bay.

The Batangas Bay Region (BBR) is located in the southern part of Batangas Province. It covers the Batangas Bay itself and includes areas whose catchments drain into the Bay (Fig. 2). The BBR has a total land area of 1,461 km<sup>2</sup> and comprises the cities and municipalities of Batangas, Lipa, Alitagtag, Bauan, Cuenca, Ibaan, Mabini, Padre Garcia, Rosario, San Jose, San Pascual, Taysan, Lobo and Tingloy. Batangas Bay forms a semi-enclosed body of water connected to the oligotrophic tropical South China Sea and is separated by a deep trench from the island of Mindoro. The Bay has a total area of 220 km<sup>2</sup> and a coastline of 92 km. With an average depth of 55 m, the Bay is rendered ideal for international port and harbor development.

The coastal resources and habitats in the region include mangroves, coral reefs and fisheries. Mangrove areas are limited and very patchy, most of which are found in the islands. At present, most of the mangrove areas found in coastal towns were established only through the initiatives of local stakeholders. Coral reefs occur in the western and southern part of Batangas Bay and in the Maricaban Straits where strong currents prevent heavy siltation (MTE, 1996). Fish production in the Bay is declining due to a decrease in the bay's fishing area and because all three bays in the province are overfished.

The bay region as a whole is predominantly made up of terrace residual slopes and volcanic hill types of landforms, respectively comprising about 43 percent and 21 percent of the region's total land area. Coastal municipalities, however, have broader alluvial plains of approximately 40.33

km<sup>2</sup> making them more suitable for agriculture and urban development than those of the interior municipalities which only have 1,135 ha.

The bay region falls under Climate Type I of the modified Corona Classification of Philippine climate and is characterized by two pronounced seasons — wet and dry.

## THE PRICE OF DEVELOPMENT

### *Economic Sectors and Their Relative Importance to the Economy of the Batangas Bay Region*

Being at the heart of the country's major economic growth project, the Calabarzon, Batangas Province is at the forefront of national socioeconomic development. Project Calabarzon (referring to the five adjacent provinces of Cavite, Laguna, Batangas, Rizal and Quezon), envisages agricultural intensification and modernization as two key strategies, with industry, trade and tourism as major drivers of rapid economic growth.

Batangas plays a major role as the region's industrial heartland owing to the presence of major industries within the province. Batangas hosts several industries including key petroleum-based corporations like Shell Philippines, Caltex Philippines and Petron Corporation; major power-generating plants such as the Batangas Coal Fired Thermal Power Plant and First Gas Corporation; and large industrial firms engaged in chemical and textile manufacturing, shipyard and steel fabrication, engineering works and food processing. All these industries are found along the Batangas Bay.

The province boasts of a robust agriculture and an active municipal and commercial fishery. Some

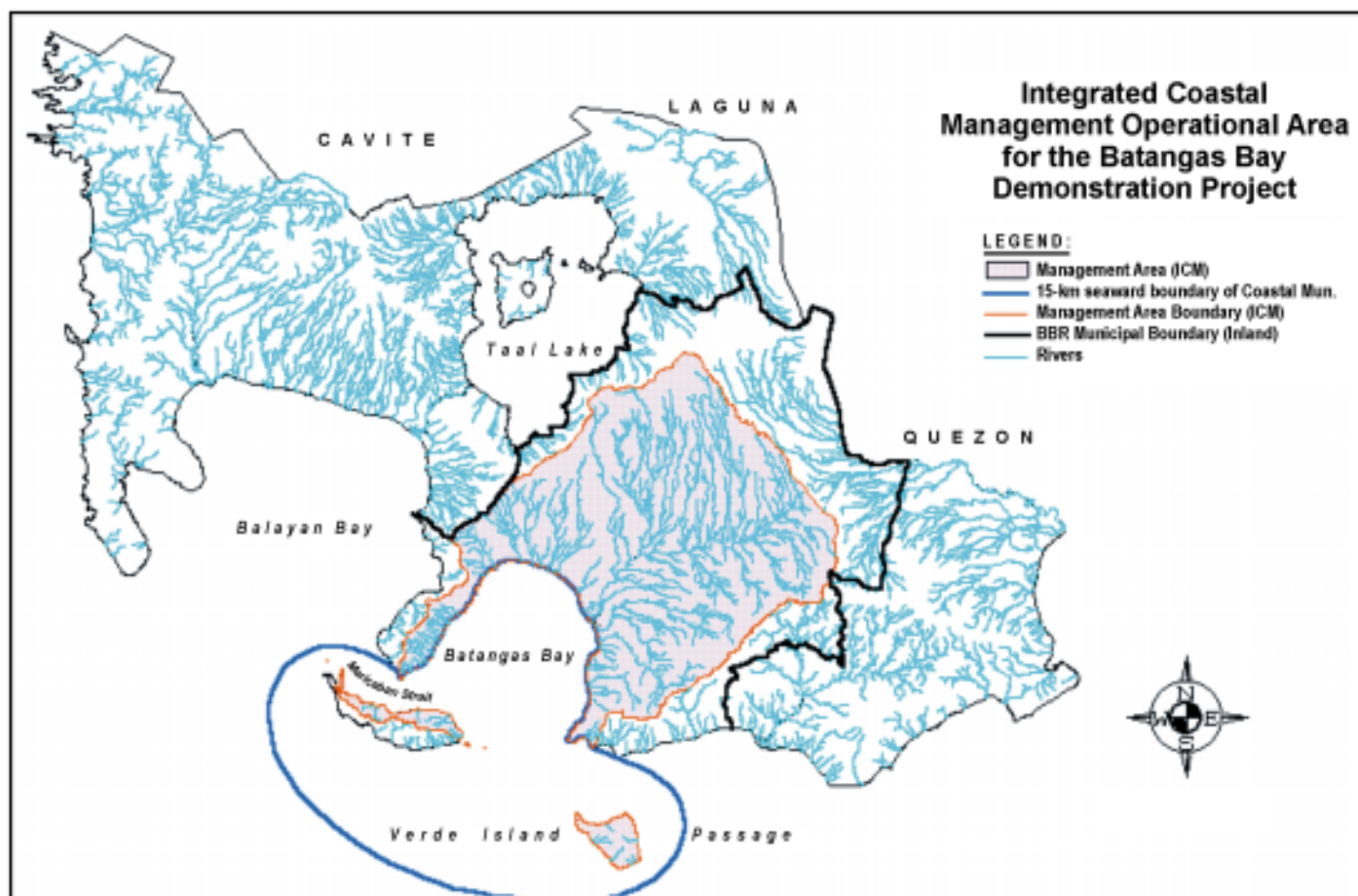
61 percent of the province's total area is devoted to agriculture, dominated by coconut and sugarcane. Intermixed with the different agricultural land uses is the commercial and backyard raising of livestock, especially poultry and pig farming. Forest areas occupy approximately 23 percent of all nonagricultural areas, with the bay region holding 12 percent of the province's forests.

Fishing is an important economic activity in Batangas with more than 3,000 fishers depending on fishing for their livelihood. In addition to traditional fishing activities, the collection of reef fish and invertebrates for the ornamental fish export industry is also significant.

Batangas Bay has been classified by the Philippine Department of Environment and Natural Resources (DENR) as having Class SC waters, a class suitable for recreational and fishing activities. A number of resorts, dive sites, restaurants, and other recreational centers are likewise found as an offshoot of the area's tourism industry.

As Batangas optimizes its potential as a transshipment point for the region, the province is gearing-up to become a major business hub and vacation spot for the Southern Tagalog Region. Batangas City hosts the Batangas International Port, which serves as an alternate port to the Port of Manila. The port also provides support to

**Figure 2. Management Area of the Batangas Bay Region.**



industries and companies operating both within and outside Batangas.

***Multiple-Use Conflicts and Its Impact on Natural Resources and the Environment***

Batangas is endowed with natural resources offering various opportunities for development. These resources are a public good with common property characteristics creating a diversity of perspectives among the different resource users and stakeholders. Different groups have different needs and priorities. This diversity translates to varied interests and methods of resource use, which in turn leads to competition and conflicting resource uses.

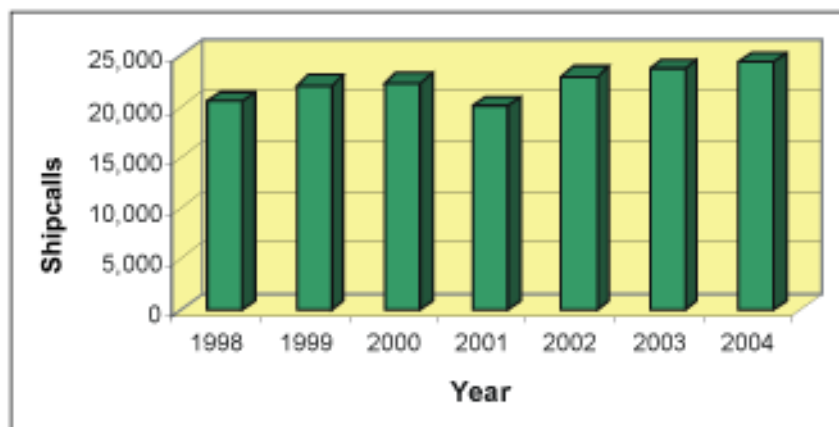
Heavy industries are the more conspicuous users of the bay. Aside from their extensive facilities that claim a significant portion of the shoreline, some heavy industries maintain their own port or berthing facilities. These industries use the bay for mooring, anchorage or for cooling their facilities. This extensive industrial use has led to increased vessel traffic over the years, and has rendered adjacent areas unsuitable for fishing and recreational activities.



*Port construction and development contribute significantly to the economic development of Batangas.*

Navigation is a significant economic activity in the BBR in view of the natural attributes of the bay. Shipping statistics taken in 1995 showed that a total of 1,323 ships docked in Batangas Bay, 94 percent of which were domestic vessels. More than 80 percent of the ships docked in public ports, while about 20 percent docked in the private ports of industrial firms. In passenger traffic, there are 27 companies offering services with 68 operating vessels. Since Batangas Port's upgrade as an international port and alternate port to Manila, the number of ships docking at the port has significantly increased (Fig. 3). This will potentially cause resource-use conflicts and pollution, and increase the risk of oil spills and ship accidents.

**Figure 3. Annual Shipcalls in Batangas Port, 1998–2004.**



Source: Philippine Port Authority, 2006.

Over time, the relative importance of fishing in the BBR has gradually decreased with the intensification of industrial, port and shipping activities in the region. Within the fishing sector itself, commercial fishers have often encroached into the operational areas of municipal fisheries, generating conflicts between the two groups and intensifying exploitation of fish stocks.

While economic development opportunities are promising, BBR has become a bedlam of conflicting activities. Impacts on resources and the environment are now being felt because the bay's multiple uses are being pursued without a sense of interdependence and a lack of awareness of its consequences.

The influx of industries has accelerated population growth in the coastal areas. In 1990, the population of coastal communities was estimated at 324,761 (MTE, 1996). With a growth rate of 2.5 percent, the population is projected to increase to 714,022 by 2020. The proliferation of coastal settlements has aggravated the problem of domestic waste collection and disposal, sustainable utilization of marine resources and marine pollution prevention.

In a setting where domestic, industrial and agricultural wastes find their way freely into waterways, rivers and coastlines, Batangas Bay has become a virtual sink for all kinds of refuse and unwanted by-products of modern living. These refuse contain pollutants which accumulate not only in the bay but in the food chain as well, thus creating both ecosystem and human health risks.

The coastal and marine habitats are in various states of degradation through heavy fishing and the use of illegal fishing methods. The destruction of coral reefs, mangroves and other marine



*Increased efforts are required in fishing due to the decrease in fishing area and the overfished environment.*

habitats are due to the continuous increase in population and the high tendency for in-migration due to the lack of alternative livelihood options. Erosion and siltation from denuded watersheds have caused heavy sediment impact on seagrasses and reefs. These complex environmental problems and impacts are occurring in the land and sea interface and often have transboundary and cross-sectoral characteristics.

The root of all the bay's problems and issues lie in the weak local management capacity to manage coastal and marine resources. This weakness is manifested by: the lack of sound scientific information; low awareness; incorrect perceptions on the value of environmental resources; inadequate policies and regulations; and a lack of coordination among various management sectors. The sectoral approach to resource management did not allow much room for integration. As a result, decisions made in one sector of the local government sometimes had detrimental effects on other sectors.

The future development of Batangas Bay needs reliable, integrated environmental management systems to ensure the sustainability of both existing and planned programs. The required integrated systems should be able to: manage, and at the same time, reduce wastes from land- and water-based sources; mitigate water and air

pollution; conserve special ecosystems; promote tourism development; improve agricultural and fishing productivity; and maintain the environment's carrying capacity.

## **MAKING A DIFFERENCE**

### *Introduction of MPP-EAS*

The concerns and sentiments of the people and organizations in Batangas who believe that something concrete and sustainable must be done in order to conserve and properly utilize the province's natural resources are widely dispersed and confined to their own circumstances. Still there are people and organizations who are unaware, unsure and skeptical. The different local government units have been undertaking sectoral environmental activities. However, these are isolated, widely dispersed and done on a limited scale owing to inadequate resources as well as a number of other pressing socioeconomic concerns that these units face.

Recognizing the intractable problems and frustrations of sectoral solutions, the Provincial Government of Batangas sought the assistance of the United Nations Development Programme (UNDP) and lobbied for the selection of Batangas Bay as demonstration site of its integrated coastal management (ICM) program under the Global Environment Facility (GEF)/UNDP/International Maritime Organization (IMO) Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas (MPP-EAS). The MPP-EAS framework was built upon innovative and effective schemes for marine pollution management, technical assistance in the most strategic marine sector of the region, and the provision of opportunities to attract other agencies and the private sector for funding and investment.

MPP-EAS provided a significant opportunity and challenge for Batangas to promote the sustainable development of its coastal areas. ICM was introduced as a viable approach to resolve multi-dimensional management issues affecting coastal areas. Since the environmental problems faced by the BBR are common to the majority of coastal areas in East Asia, the Batangas experience can therefore serve as a working model of ICM application in regions with similar social and political settings.

### *Obtaining Political Commitment*

The selection of Batangas as an ICM demonstration site was not done overnight. The Provincial Government had to meet the four criteria for selecting ICM demonstration sites (Chua and Ross, 1996), namely:

1. there must be environmental and resource-use issues across jurisdictional and administrative boundaries, requiring consensus building among stakeholders;
2. the identified issues and the size of the coastal area should be manageable within mobilized resources (e.g., human, financial and materials) and expertise (e.g., scientific and technological);
3. adequate political will to apply innovative approaches to coastal area management; and
4. the types and levels of environmental problems and socioeconomic and ecological conditions must be reflective of most coastal areas in the country or region, the resolution of which can be used as working models for replication and extension.

Batangas Bay met the foregoing requirements. In addition to the environmental issues and risks faced by the area and the opportunities for effective intervention, two factors were highly



### Box 1. Batangas Coastal Resources Management Foundation.

The BCRMF was established in 1991 through the initiatives of the Governor of Batangas and five of the largest companies in the province consisting of Pilipinas Shell Petroleum Corporation, Caltex Philippines Inc., Chemphil Albright Philippines Inc., AG&P Inc., and General Milling Corporation. The Foundation has the following mandates:

- promoting and enhancing the sustainable development of the Batangas coastal resources;
- encouraging the development and implementation of integrated, interdisciplinary and comprehensive coastal resources management plans;
- strengthening management capabilities of governmental and nongovernmental organizations responsible for the management of coastal resources; and
- exploring ways and means by which the public and private sectors can cooperate and thereby benefit from efforts to sustain and develop the Batangas coastal resources.

Initially, the foundation carried out public awareness events, but had no clear strategy or program to contribute to, or influence more broadly, coastal resources management. The selection of Batangas Bay as a demonstration site for the East Asian Seas Project provided the opportunity to revitalize the Foundation and to serve as a channel for private sector contributions to pollution prevention and management issues in the region.

The participation of BCRMF is significant since it showed the private sector's strong commitment in helping protect and conserve the natural resources of Batangas Bay.

*Source: Contreras, 1998; La Viña, 1996; Chua and Ross, 1996.*

considered in the selection: 1) the government has shown an understanding of the problem and the willingness to pursue the necessary remedies; and 2) there is a strong private sector, represented by the Batangas Coastal Resources Management Foundation (BCRMF) ready to provide support. The objectives of the BCRMF are shown in Box 1.

The political, economic, and social climate in Batangas thus provides the ideal setting to: 1) illustrate the value of planning and public consultation in the prevention of marine pollution, particularly by considering environmental issues in the overall planning of coastal development and the reduction of multi-sectoral conflicts; 2) confirm the economic benefit of investments in pollution prevention and mitigation programs; and 3) highlight the

importance of a multi-sectoral approach, particularly the forging of strong partnerships between the public and private sectors (Chua, 1998).

The partnership between MPP-EAS and the Provincial Government of Batangas provides an effective framework and processes for local implementation of several environment and natural resource related international instruments such as Agenda 21 of the United Nations Conference on Environment and Development (UNCED). More significantly, it highlighted a working relationship in dealing with a pressing environmental issue. In the ICM implementation in the BBR, it has been agreed that MPP-EAS would provide the BBR with the technical-scientific support necessary in dealing with the problem. On the other hand, the Provincial

Government of Batangas would complement it with counterpart provisions in the form of additional funding, office and human resources, the enactment of appropriate policies, and ensuring sustainability after the demonstration phase. In this way, the region, although a recipient of assistance, would develop a more meaningful ownership of the program and, in the process, greater sensitivity to the issues involved.

Lessons point to the fact that political will for an ICM program is strong if economic development in the region is tied to the coastal environment. There are conflicts and problems related to the coastal environment that can be addressed by an ICM program if the ICM program

is made an integral part of the government's overall plan. It is also worth noting that the potential for cooperation is greatest where there are no or minimal histories of conflict. Past experiences of antagonistic relations can hinder intersectoral cooperation, although these situations still do not completely close off the possibility. Likewise, it is important to have a catalyst in the form of an external entity such as the MPP-EAS to serve as a bridging organization, bringing unaware, unsure or skeptical actors to the table to explore the possibilities for cooperation. It is a balanced party that will facilitate interactions among the actors without distortions or bias, and in a way that encourages growing trust and comfort among parties.

## Charting the Future





## 2 Charting the Future

The ICM program was introduced in the Batangas Bay Region in response to the need to conserve its resources while responding to the need for economic development and an improved quality of life for its people. The challenge was to put up a framework and develop a plan to integrate strategies and action towards harmonizing conservation and economic development.

The initial steps focused on issue identification, definition of goals and objectives, selection of strategies, and development of an implementing structure. Emphasis was put on promoting stakeholder cooperation and on fostering perception and attitude changes.

### FORMING THE CORE TEAM

In order to successfully launch a multisectoral initiative, it is important to have a core team who represents the interests of all stakeholders. Environmental problems can be too complex and unwieldy for any one sector to successfully tackle.

These problems are dispersed among various sectors and encompass political, economic and social dimensions which may require various resources such as: information and technical expertise; legislative mandates; access to communities; and funding. Convening a core team facilitates framing the general issue so that mutual interests are reflected in the initiatives, balances

power differences that are likely to exist and invests in building relationships.

The Batangas Bay Demonstration Project (BBDP) was officially launched on 28 April 1994 with the signing of the Memorandum of Understanding (MOU) between UNDP, IMO, the Provincial Government of Batangas, the Municipal Governments of San Pascual, Bauan and Mabini, the City Government of Batangas City, and BCRMF. Immediately after the launch, the core team was formed and convened to begin work.

The core team consisted of planning officers from the city and municipal governments, relevant provincial offices such as those involved in planning, agriculture and health, and local DENR offices such as the Provincial Environment and Natural Resources Office (PENRO) and Community Environment and Natural Resources Office (CENRO), Philippine Ports Authority (PPA), Philippine Coast Guard (PCG) and the BCRMF.



*The core team in action.*

MPP-EAS assigned a Project Manager to the site while the Provincial Government seconded staff to constitute a skeletal project management office. The BBDP formally began operation in late 1994 with the Project Management Office (PMO) space provided by the Provincial Government of Batangas.

#### **WORKING TOGETHER: INTERAGENCY COOPERATION**

Working together was not quick and easy for the members of the core team. They represented diverse stakeholders with differing interests. However, the project chose to focus on the need to identify core competencies and the comparative advantage of agencies by looking at multisectoral cooperation as a strategy that optimizes the respective strengths of the sectors while limiting the impact of their individual weaknesses. The project found that when properly carried out, the roles played by involved actors and the resources brought to the problem-solving process were defined according to their sectoral backgrounds and strengths.

Joint diagnosis was a guiding rule adopted by the core team and was seen as an effective way of establishing a joint learning process and for building local ownership of the project. The process of finding out educates and informs all stakeholders, strengthening their consensus building process despite competing priorities. The learning process through working together, made it easier for each agency or sector to emphasize the aspects relevant to their own mandate, operations and strengths, while drawing support from others to neutralize its weaknesses. Commitment and motivation were also enhanced by the awareness of the problem's urgency and the acknowledgment of its relevance to their own work rather than it being perceived as an additional burden.

#### **INVOLVING THE POLITICAL LEADERS AND THE PEOPLE**

Local governments should be made responsible for supporting, promoting and managing projects and for cooperating with other local governments. Some externalities can fall beyond the limits of administrative boundaries making cooperation necessary. Likewise, local governments have the knowledge and capacity to pool together local coalitions of both public and private agents capable of implementing projects, to monitor their work in progress, and to enact institution-building activities. Engaging the active support and cooperation of local governments therefore, depends significantly on the recognition of the urgency of the problem by local political leaders and their appreciation of the feasibility and rationality of the solutions.

When ICM was introduced in the BBR, local leaders and their stakeholders did not have sufficient knowledge and awareness of the concept although they believe that something must be done in order to secure the future. In some municipalities initiatives were being undertaken, which could be enhanced by integrating their actions. Several dialogues with political leaders were undertaken. MPP-EAS facilitated a study tour that provided the leaders with actual exposure to the ICM process and its results. Mayors of the coastal municipalities in the Bay Region and elected officials of the province were thus sent on a study tour of Xiamen, People's Republic of China, to observe the initiatives taken on the application of the ICM framework in Xiamen, and to interact and learn from their counterparts. They were also invited to participate in meetings and roundtable discussions where programs proposed by the BBR core team were presented.

Representatives from the province were likewise sent to different training and development programs such as the Regional

Training Course on the Application of ICM System in Marine Pollution Prevention and Management, conducted annually from 1995 to 1999. The MPP-EAS also provided in-service training through staff attachments to advanced laboratories in the region and through training courses offered in collaboration with the University of the Philippines (UP). Emphasis was given on building institutional capacity to plan and manage their own coastal resources.

The training and exposure provided by MPP-EAS helped the administrators to better understand the problems confronting the Bay and how they could respond. In this way, they started to appreciate ICM and developed a sense of ownership. This helped cross the barrier of political affiliations which usually affect the effective implementation of government programs.

#### TAPPING SCIENTISTS' SUPPORT

The capacities to initiate and sustain multisectoral cooperation and initiatives may not be widely distributed among key actors and stakeholders at the outset. Donors can redress this initial gap by providing scientists and consultants, and training and capacity building support to the multisectoral initiatives. The long term focus should be on creating local resources that can continue to foster other multisectoral initiatives. It is important for science to have a clearly defined role as a partner in the planning and management process such as providing management technical advice and results of researches in useful formats. Quality technical expertise is a key determinant of success as it facilitates the planning process.

In the BBR, there was a shortage of suitably trained coastal resource managers with knowledge

and technical skills to implement ICM. Thus, the MPP-EAS tapped the expertise of scientists from the Marine Science Institute (UP-MSI) and the School of Urban and Regional Planning of the University of the Philippines. These scientists worked with the concerned national and local government officials in collecting and interpreting scientific data, preparing technical reports, establishing environmental monitoring mechanisms, and training and development. Involving the local experts from the academe such as the De La Salle University–Lipa, Batangas State University and the University of Batangas also initiated the mechanism for the pooling of talents and experts in the BBR.

The outputs of the scientists include: the Coastal Environmental Profile (CEP) (MTE, 1996), risk assessment for pesticides (MPP-EAS and FAO, 1998), fisheries stock assessment (Aliño, et al. 1998), hydrodynamics study of Batangas Bay (Villanoy, 1998), agricultural waste study (Stewart, 1999), and integrated environmental monitoring. These were used in the development of Strategic Environmental Management Plan (SEMP) (PG-ENRO, 1996), water-use zonation scheme (MPP-EAS, 1999), integrated waste management action plan (IWMAP) (MPP-EAS, 1996) and other activities.

#### THE PLANNING PROCESS

##### *Putting Together the Relevant Information*

Information is essential to planning and decisionmaking. Relevant and timely data provides a holistic view and a better grasp of the status of the environment leading to a better understanding of relevant issues. However, access to information can prove difficult with data either unavailable or scattered among diverse gatekeepers. It is important therefore to compile

all relevant information in a form that would provide an understanding of the relationships among the different components of the existing environment which could lead to the proper identification and prioritization of management issues. It is equally important to know the different agencies, institutions and groups who serve as gatekeepers of information. Lastly, the compilation should speak of a common language that guides the scientists and researchers in structuring information from the different disciplines.

### ***Coastal Environmental Profile***

In the BBR, there was no compilation of relevant information on social, economic and ecological aspects. Different agencies kept data. The BBDDP commissioned a multidisciplinary team to compile a CEP with all available information, and conduct a preliminary analysis of the issues and determine data gaps needed in the formulation of a plan.

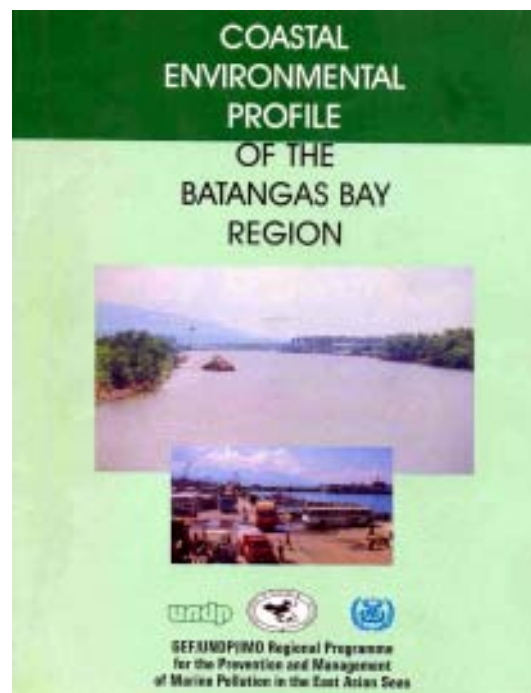
The team consisted of an environmental planner, a fishery specialist, an oceanography and water quality expert, an economist, a geographer, and a project development specialist. The CEP presents important characteristics of the BBR such as: physical and biological resources; the state of the marine environment; and socioeconomic and institutional characteristics. It also contains a preliminary analysis of the issues confronting the BBR.

The CEP provided a valuable venue for promoting and integrating interdisciplinary teamwork, and for involving stakeholders in the process. A series of meetings among the experts and consultation with stakeholders were held to develop the scheme and guidelines for the preparation of the CEP and to validate the information presented.

Attention was then directed on the status of the BBR's ecological, social and economic conditions. Specifically, the team examined the following parameters deemed important in the preparation of the profile: land resources and use; fishery resources and critical habitats; oceanography and inland water bodies; water quality; socioeconomic conditions; institutional and legal aspects in the management of the bay; and natural hazards. The team also assessed the status of environmental parameters, the utilization and development of coastal resources, and management of the bay. Moreover, it identified and defined the problems and issues currently and potentially affecting the bay.

Interviews of key resource persons from reconnaissance field surveys supplemented the secondary data gathered by the team. The team likewise identified the data gaps requiring further research.

The draft profile was presented to a multisectoral audience for validation and agreement on the identified issues and problems.





The profile was further refined, based on the comments and suggestions made by the workshop participants.

The CEP served as the source of information in the course of developing the SEMP, and the succeeding activities of the project. To some agencies and institutions, including the private sector, the CEP became useful in developing their projects and action plans.

### *Geographic Information System Database of the Batangas Bay Region*

Spatial information is essential in planning especially when identifying the location of the projects vis-à-vis the characteristics of the area. As support to the planning exercise, an implementation of the project activities of BBDP, a geographic information system (GIS) database was established at the Provincial Government Environment and Natural Resources Office (PG-ENRO), with heavy support from MPP-EAS and DENR, due to the lack of available expertise. The database was established to support useful applications such as (Paw et al, 1998):

- Environmental evaluation of development programs and projects in the bay region, especially for environmental impact assessment (EIA);
- Resource allocation and suitability assessment of alternative sites for coastal activities;
- Environmental monitoring of land- and sea-based sources of marine pollution;
- Water-use zoning and management, including harmonization with land-use plans;
- Determination of the spatial extent of coastal resources and area-based human activities; and
- Identification of management issues and gaps.

The GIS database is a collection of different maps and their corresponding attributes required in the above applications. To enable access of data by the local governments and users who cannot afford the cost of GIS facilities and lack the required technical skills in operating a GIS, the GIS database was compressed to an abridged version and stored in a CD-ROM entitled “Environmental Management Spatial Database of the Batangas Bay Region”. By using the abridged version, one can generate printed maps of any part of Batangas, especially in the BBR. The system can also create maps by overlaying different layers that are available in the database. Analysis through the CD-ROM is limited, however, the maps can be printed and manual overlays can be done to permit further analysis. Although the system was not comprehensive and did not contain all the features of a GIS, the system was able to bring to the local government units (LGUs), planners and ICM practitioners essential information for developing management plans.

The maintenance of the GIS database, however was difficult for the PG-ENRO due to insufficient expertise; a fast turnover rate of trained staff; and the upgrading of SPANS, the software used, into another software that proved too expensive for

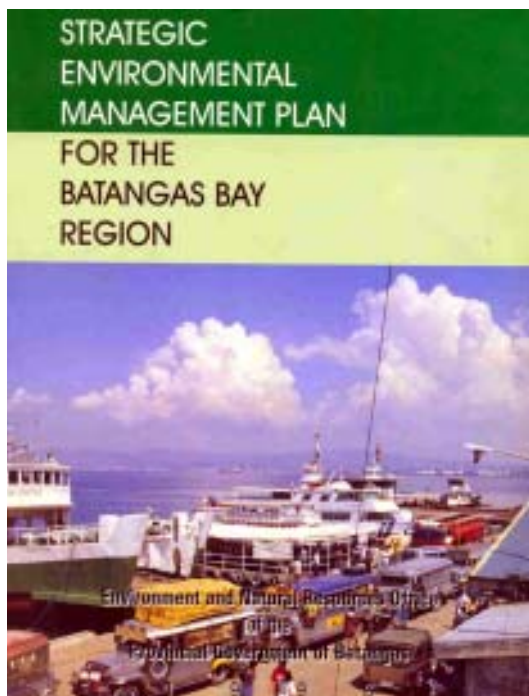


*This database helps local government planners and manager conduct spatial analysis of the BBR.*

the Provincial Government to acquire. Nevertheless, the Provincial Government initiated to use other more affordable software. Staff are being trained and are expected to reestablish the GIS database at PG-ENRO.

#### **PLANNING FOR A BETTER FUTURE**

The SEMP was designed to prescribe the manner by which development should proceed without compromising the environment and natural resources (PG-ENRO, 1996). The wide range of management issues and the potential impacts they pose on the environment and people against the existing limited resources and institutional capacities of local government underscored the need to determine meaningful priority issues or factors which the LGUs can tackle. Issues in Batangas were therefore categorized into three: 1) critical priority; 2) high priority; and 3) low priority. The prioritization of management issues allowed project management to focus on solvable issues that were of the most intermediate concern.



The SEMP encompasses the entire BBR but it had an immediate focus on the coastal municipalities bordering Batangas Bay. Its central theme was sustainable development ensuring compatibility of management actions between the overall development of the BBR — within the ICM framework — and its environment.

The preparation of the SEMP was coordinated by the Provincial Government of Batangas. MPP-EAS provided major technical and financial support. The plan was completed in less than two years through the combined efforts of local and national government officials, private sector representatives and nongovernmental organizations (NGOs). The first draft of the plan was circulated to selected local executives and industry leaders for review, then, it was formally presented to key stakeholders for validation. The final draft was adopted by the Batangas Bay Region Environmental Protection Council (BBREPC) during its meeting in July 1996.

As a local planning initiative, the SEMP was linked with macro socioeconomic and environmental plans and programs such as the Medium-Term Philippine Development Plan 1993–1998, Project Calabarzon Master Plan, and the Multisectoral Development Plan of Batangas Province 1995–2000.

Two issues were emphasized related to the translation of the SEMP into detailed action plans, these were: 1) the identification of sources for funding; and 2) the passage of an ordinance by the Provincial Government of Batangas declaring the SEMP as a major LGU administrative guide in the formulation of future development, environment policies, plans and programs.

Lessons distilled from the development of the strategic plan emphasized the need for a more systematic assessment of the vulnerability of the marine environment, making it easier to identify

more appropriate entry points. Projects that failed to undertake a holistic analysis of the environment prior to project design often adopted irrelevant strategies and entry points. The holistic analysis leads to more focused interventions, but also provides for other avenues of improvement. Once the holistic analysis is completed, a decision can be made on the scope of the entry point and the integrated movement into these areas. In short, the success of cooperative ventures often depends greatly on best efforts to establish and maintain mutual influence over the definition of problems and issues and their prioritization, the planning of solutions, and the mobilization of resources to implement those solutions.

It is vital that all parties agree on a process for framing the issues that best articulate their interest, recognize the critical resources they bring and provide them with some influence over the course of the cooperation. It is also important that the developed plan be validated and accepted by all stakeholders.

#### GAINING SUPPORT AND ACTIVE PARTICIPATION THROUGH PUBLIC AWARENESS CAMPAIGNS

Raising stakeholder awareness on the importance of managing the environment and resources of the BBR, and on the importance of partnerships to solve issues, can lead to changes in perception and attitudes. It must be noted that stakeholder actions towards the environment and natural resources are dictated by their awareness. Once they are convinced and their perception and attitude changed, their active involvement and support will follow. This was a challenge for the PMO and the core team in the early part of the project.

Adequate publicity should be made on the identified issues and generated information so that these may be made known to the public. A high

level of public awareness is necessary to facilitate the take-off and development of intervention programs. An educated public plays the dual role of support and involvement in project implementation, and contributes to the monitoring of progress and impact of management interventions.

Public awareness activities must be sustained, not limited to one-time publicity and organized campaigns. The involvement of the media is important to bring the message not only to the general public but also to those participating in the activities and to foster a supportive attitude towards the programs. Provision should also be made to answer the public's inquiries that will soon follow. Opportunities for creating public awareness must be maximized.

#### *Coastal cleanup sponsored by the private sector through the Kilos Kabayan Para sa Kalikasan*

In the BBR, the first general awareness program on the environment was the *Kilos Kabayan para sa Kalikasan* or KKK (Citizens Action for Nature) launched by LGUs in cooperation with the BCRMF. KKK sought to organize an



*Coastal cleanup sponsored by the private sector through the Kilos Kabayan Para sa Kalikasan raised awareness and changed behaviors of stakeholders with regard to the environment.*

environmental movement which fosters the reorientation of values and practices necessary for the sustainable development of the environment. For its first activity, the organizers held a contest in search of the cleanest barangay. It was participated in by the four municipalities along Batangas Bay. As an offshoot of this activity, Batangas City, Lipa City and the coastal municipalities likewise conducted their own cleanest barangay contests and selected their own pilot villages.

Other public awareness activities followed, such as the Batangas Bay Watch (BBW) movement. BBW is a public awareness program which mobilized various sectors including the youth as active partners in the protection and management of Batangas Bay. Some 1,000 students from the higher education institutions in Batangas City pledged to assist in protecting the environment. They were likewise deputized as environmental agents, reporting violations of environmental laws and ordinances. Members of BBW were issued identification cards and were provided access to the PG-ENRO library and the Batangas Bay Marine Laboratory.

As the project progressed, these activities were complemented with an array of other public information programs. These included the publication of a quarterly ENRO bulletin, production of a BBDP brochure, circulation of a Techno Comics on ecological waste management, putting up of billboards in strategic areas, and issuances of press releases to media establishments. The two radio stations in Batangas City — DWAM and DZBR — were helpful in disseminating information about BBDP. The stations broadcast news about the program, covered special events and featured discussions on important environmental issues.

In order to ensure responsible dissemination of news and information concerning the environment, members of the media were likewise involved in education and training programs conducted by the BBDP and the PG-ENRO. In this case, factual data were disseminated to the people, providing accurate information on sensitive issues such as oil spills and fish kills. It helped that some of BBDP's partner journalists were affiliated with organizations directly involved with the protection of Batangas Bay.

The BBDP and PG-ENRO were able to come up with a number of laudable public awareness and information programs. However, not all of these initiatives were successful in deeply penetrating every household in the BBR. People in the area, as elsewhere in the province, are more inclined to Metro Manila-based media and, therefore, are more familiar with national issues. Unfortunately, only a few of these media focus on environmental concerns, except for occasional sensationalized treatment of tragedies or scandals related to environment and natural resources. Instead, these media are more inclined on sports and the entertainment industry which are the programming genres usually patronized by the public. Thus, in order to have a wider reach of its constituency, the BBDP should have also strongly utilized the national media. This was not made possible, however, since such would translate to higher operational costs.

#### SHARING THE COSTS

Stakeholders need to be aware that pooling of resources is necessary to solve the problem as well as realize the likely benefits that will accrue from the cooperative activities. Donors can catalyze the actions by committing resources to ensure a successful project take-off and provide

<b>Box 2. Budget Allocation for ICM in Batangas.</b>			
<b>Budget Year</b>	<b>Budget Allocation</b>		
	<b>MPP-EAS US Dollars</b>	<b>PG-ENRO Philippine Pesos</b>	<b>BBREPC Philippine Pesos</b>
1996	713,800	3,651,896	500,000
1997		5,560,483	500,000
1998		7,014,684	500,000
1999		7,235,908	500,000
	<b>PEMSEA</b>		
2000	70,000	8,332,741	500,000
2001		8,732,942	500,000
2002		9,469,942	500,000
2003		11,700,522	500,000

seed funding for initial explorations of how to apply the integrated approach. However, stakeholders should also demonstrate their commitment to the project by providing some form of cost-sharing. This can come in the form of real money or in the form of other resources that can benefit the project but which cannot be directly quantified. Each sector or stakeholder possesses distinctive assets that can be combined in a productive manner to meet cost-sharing requirements in a relatively affordable way. Either way, stakeholders are given the responsibility and opportunity to share or provide equity which somehow instills a sense of joint ownership.

In the BBR, MPP-EAS provided funds for initiating the pilot phase in the amount of US\$713,800. The contribution of the Provincial Government of Batangas during this phase (1996–1999) totaled PHP 25,462,971. From 2000–2005, GEF contributed US\$70,000 as support to ICM while the Provincial Government of Batangas allocated PHP 30,236,147 during this period. Box 2 shows the financial resources allocated for the implementation of ICM in the BBR from 1996 to 2003. Other sources of funds are the regular annual budgetary allocation of line government

agencies and the local government units and taxes imposed on garbage collection and disposal, fishing, and mining. These funds were complemented by assistance provided by the BCRMF and other concerned industries. Staff time, office space, equipment and other logistic support have been pledged and provided to add to the resource base.

#### STRENGTHENING EXISTING REGULATIONS

While the SEMP was accepted and resources to implement the plan were provided, the regulatory environment under which the plan is to be implemented should be formulated. Although existing regulations and practices provide a good framework for defining the operations, they are often sufficiently broad and fail to address the issues adequately. Also, as regulations expand, overlap, and generally become complex, the need to collate, rationalize and elaborate on their content and applicability grows. Assessment of existing regulations relevant to ICM is suggested so that strengthening can be facilitated or the initial steps towards a new act can be pursued. The role of LGUs takes center stage in this regard as they can provide the legal

mandate or enact legislation to provide the enabling environment for ICM implementation.

There were a number of other environment-related legislation passed in the BBR after 1993. The majority of these legislations were noticeably focused, however, on issues such as littering, collection of garbage fees, prohibition of cutting of certain trees, and prohibition of dynamite fishing (see Box 3). These legislations were able to address sectoral concerns but there were no regulations that attempted to address the

multiplicity of issues and integrate multisectoral concerns. Coordination among the coastal municipalities for the protection of the bay was likewise weak.

Although the number of government agencies assigned the tasks of protecting the BBR appears sufficient and the laws and regulations necessary to protect and conserve the bay's resources seemed adequate, these do not guarantee the bay's successful management. There are other equally important factors to reinforce the institutional and

**Box 3. City and Municipal Ordinances.**

**Ordinances on comprehensive waste disposal and management system**

- LGUs: Batangas City, Bauan and Lipa City
- Description: Institutes a comprehensive waste disposal and management system prescribing the rates of garbage collection fees by type of establishments; provides instructions on the manner of disposing wastes and the time of collection; stipulates penalties for violators

**Fishery ordinances**

- LGU: Mabini
- Description: Provides zoning regulations; identifies covered barangays and minimum bids for acquiring fishery rights or user rights; requires fishing boats to get license from the Mayor
- LGU: Bauan
- Description: Prohibits the use of cyanide in fishing in the municipal waters; prohibits the use of spearfishing

**Anti-littering ordinances**

- LGUs: Mabini, Bauan, San Pascual, Alitagtag, Padre Garcia, Rosario and Ibaan
- Description: Prohibits the indiscriminate throwing and dumping of garbage in the streets and public places; requires traders and public utility vehicles to provide their own garbage cans

legal framework of the Batangas Bay's management structure, these include: better coordination among stakeholders; greater awareness and participation by the local governments and local communities; increased cooperation, involvement and support from the private sector; competent planning and allocation of the bay's resources; adequate public investment; improved enforcement of laws and regulations; enhanced capacity building; and close monitoring of activities significantly affecting the bay.

Decisions to strengthen existing regulations and those that require actions were presented to the Strategic Planning Committee for approval. This was the modality adopted while the formation of the multisectoral BBREPC was still in process. For example, the implementation of EIA-related functions was a key area of interest, as a consequence of the enactment of the Local Government Code which devolves responsibility from the central government to the local governments. The stakeholders, through the Strategic Planning Committee, agreed that this provision of the Code could be pursued. In February 1999, after several years of discussion, an MOU was signed for this purpose by the Provincial Government of Batangas and the DENR.

#### **MONITORING CHANGES IN ENVIRONMENTAL QUALITY**

At the outset, it is important that the project design pays particular attention to how results and impacts will be monitored and measured. Water quality is one area of interest and a pre-project baseline survey provided the starting point. The baseline information generated facilitated the establishment of benchmarks upon which succeeding information were compared.

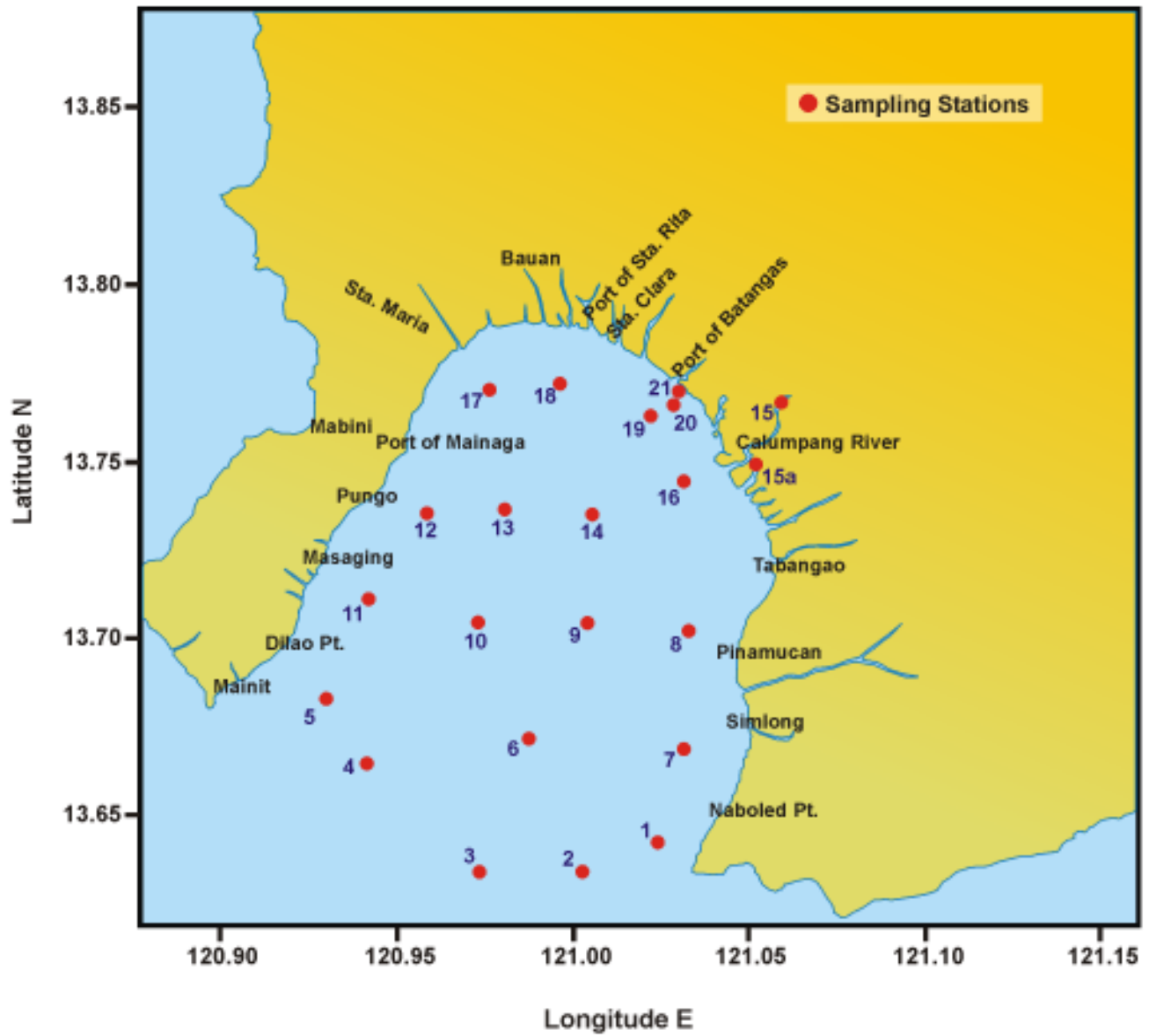
When there are a large number of factors affecting the baseline information, establishing the baseline is much more difficult and requires considerable research and analytical skills.

In the BBR, baseline water quality information proved limited mainly because there has been no consistent monitoring effort in the area. With the assistance of experts from the UP-MSI, collection of baseline data was conducted by the PG-ENRO. This involved actual measurement of water quality parameters and served as bases in setting benchmarks and references.

Twenty sampling stations in Batangas Bay and two stations in Calumpang River in Batangas City, the largest tributary entering the bay, were designated as survey sites. Water sampling in these stations was done every quarter. Water samples were analyzed for basic parameters such as biochemical oxygen demand (BOD), chemical oxygen demand (COD), dissolved oxygen (DO), total and fecal coliform counts, nutrients, oil and grease, transparency, chlorophyll, salinity, temperature and pH.

The baseline results, although not conclusive, suggested a potential health risk. Further investigation of pollutant sources and their control is warranted. A related management issue that emerged from the baseline studies is that while Batangas Bay is classified primarily for the propagation and growth of fish and other aquatic life and not for contact recreation, there are swimming beaches on the western side of the bay. Continued use of this area for swimming will need to be complemented with regular monitoring of coliform counts and the issuance of health advisories. This will require, on the other hand, the provision of adequate equipment and qualified personnel.

Figure 4. Sampling Stations in Batangas Bay.





Given the baseline information, a pollution monitoring program was developed to target selected critical issues, problems and parameters at specific sites; provide input into the formulation of cost-effective strategies to address environmental concerns; and involve the various users and custodians of the marine environment in the monitoring, safeguarding and management intervention processes.

#### **SUMMARY OF LESSONS**

Several useful lessons were learned from the different activities initially undertaken for the planning and preparation of ICM in the BBR. These include the following:

1. Stakeholder participation is vital during the planning and preparation phase. A cross-disciplinary management team and professionals representing the stakeholders must be formed as early as possible. The ICM project management team must have a clear understanding of the ICM concept and awareness of the local needs necessary to develop the appropriate approaches to problems. Likewise, there must be an ability to build a critical mass of stakeholders with commitment and interest in developing solutions to perceived problems and issues. An integrated planning process is essential to bring together the divergent efforts of various government units, NGOs and other organizations involved in management.
2. Making scientific advice available at the local level through integrated planning and management improves efficiency and effectiveness of management interventions. Effective integration between science and management requires a sound foundation and practical methods for resolving conflicts, strengthening institutional arrangements and human resources for management and planning of ICM activities. Quality technical expertise is a key determinant of success as it facilitates the planning process.
3. Political leadership is always required to start and sustain successful ICM programs through the provision of resources, legal mandate, moral support and overall direction for local stakeholders. The involvement of political leaders and people is crucial in developing a broad base of public support for ICM. Study tours for policy and decisionmakers improve perception and attitude and promote stronger commitment. Public involvement creates a constituency which can apply pressure to elected officials and decisionmakers. The involvement of people builds confidence to manage their own resources and encourages outcomes that are long-lasting.
4. A CEP created early in the project schedule is a useful tool for encouraging stakeholder involvement by collecting relevant existing information on the status of the environment, priority issues and the applicable institutional arrangements. The project should use best available information to address urgent management issues.
5. A heightened public awareness on the necessity of managing the marine environment helps to strengthen the determination of the government to

undertake pragmatic solutions. Press releases and public information materials should be used to advertise the project presence and accomplishments and to build a constituency for support. Opportunities for projects to share experiences and to develop linkages and support system should be provided.

6. Move to strategic action planning once the project is launched and enough information and awareness have been generated. Develop a plan that builds on good information that evolves with the planning process, identifies roles, responsibilities and resources. Because multisectoral cooperation brings together parties with their own interests, goals and ways of working, it is important that plans and roles are jointly developed and agreed to. Developing agreements on implementation is essential to holding each other accountable for program performance. Not all disagreements can be foreseen but negotiating action plans and division of responsibilities at the outset can reduce the potential for misunderstanding and conflicts that could later undermine the partnership.
7. While an ICM initiative might be triggered thru external donor's funding and developed by external support, efforts should be made by local government and other stakeholders to share in the costs. Local government commitment to project management and implementation are indispensable for project success. The commitment is couched not only in public pronouncement of support but also in the allocation of financial, human and material resources in cash or in kind, for project implementation.
8. Clear legal mandates will enhance efforts to integrate the activities of diverse sectors and institutions. It is important to start early with activities to clarify and harmonize the legal framework. Later policy successes will depend upon the project's early ability to understand its authorizing environment.
9. It is important that the project design pays particular attention to how results and impacts will be monitored and measured. Environmental quality criteria should be set at the outset and baseline information secured as basis for comparison.

## Executing the Plan





### 3 Executing the Plan

This section highlights the importance of two major elements in the implementation of ICM programs, the institutionalization of ICM and the involvement of stakeholders in all planned activities. The first section pinpoints the organizational structure and the processes that enable all parties to actively participate. The succeeding sections emphasize how joint efforts were harnessed and transformed into productive and effective actions throughout all stages of the implementation phase. Such mix of efforts can only be achieved over time, with patience and collaboration among the various concerned agencies and sectors.

#### INSTITUTIONALIZING THE ORGANIZATION

The establishment of a legal and institutional mechanism is a prerequisite to translate the SEMP for the BBR into actions putting the principles of ICM into full application. Initially, it would be best to look at alternative structures and choose the most appropriate structure which could adequately represent all stakeholders and ensure sustainability regardless of political transition. It is better to avoid the establishment of a new institutional body since this is a time-consuming activity, needing appropriate manpower and financial resources and could even be misinterpreted as a threat by existing agencies. It would be better for existing agencies to retain their line functions with functional integration to be achieved thru the ICM framework. The roles and responsibilities of

participating organizations or groups, including the areas of accountabilities for implementation had to be defined in the process (La Viña, 1996).

The legal and institutional mechanisms for ICM implementation in the BBR sought to establish the most appropriate multisectoral organization and operation modalities which will harmonize sectoral policies, plans and programs in the BBR; make priority directions for environmental management; and then mobilize stakeholders participation and coordinate the use of resources for effective program implementation. A corresponding study was conducted, and among the different alternatives analyzed, the establishment of a multi-sectoral council, with the PG-ENRO as the technical secretariat was recommended (La Viña, 1996).

#### BATANGAS BAY REGION ENVIRONMENTAL PROTECTION COUNCIL (BBREPC)

Recognizing the importance of a legal mandate, the mechanism adopted in the BBR was made legitimate through a provincial ordinance and served as the framework for the multisectoral coordination of SEMP implementation in the BBR. Eventually, such institution paved the way not only for the sustainability of the ICM system in the BBR but also provided the necessary support to replicate the program.

In January 1996, the BBREPC was created by virtue of Provincial Ordinance 001, series of 1996.

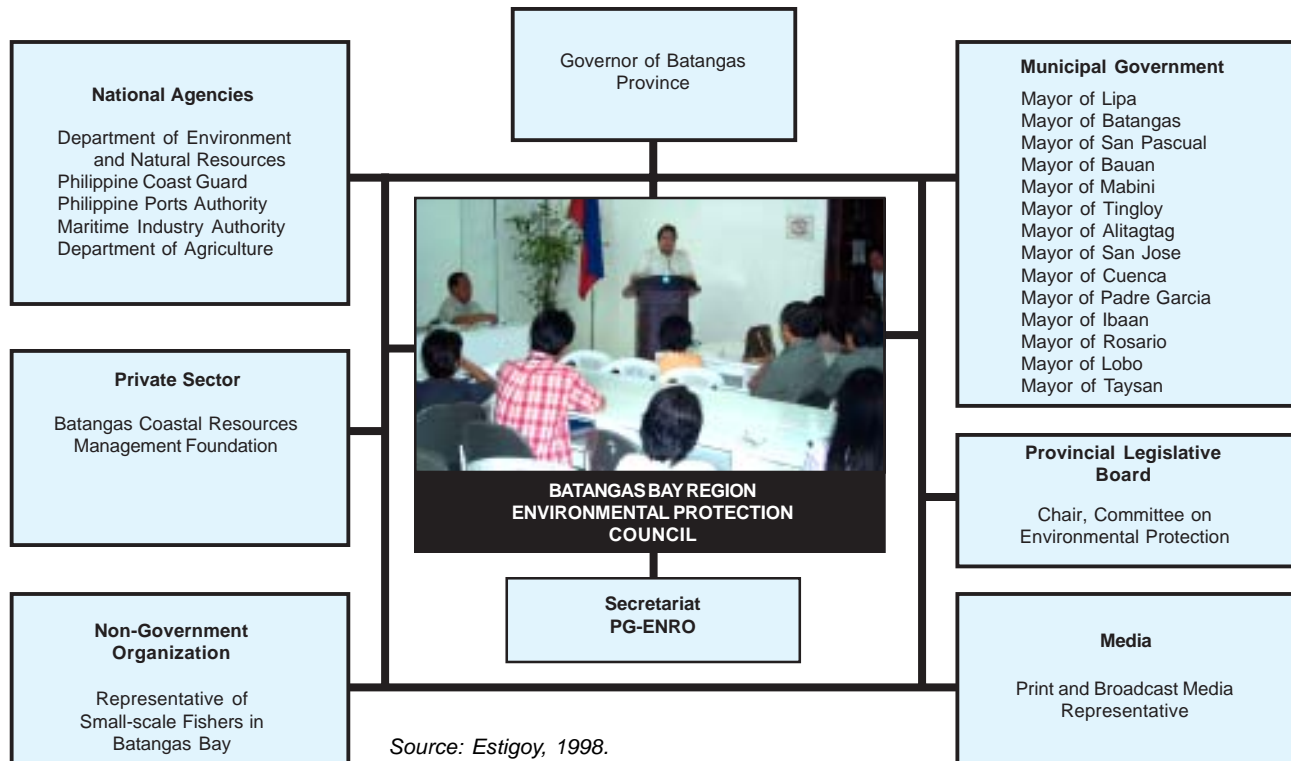
The BBREPC was established to supervise and control the formulation, adoption, governance, implementation and policy direction of the SEMP and subsequent environmental action plans for the BBR. It was vested with the power to develop policies and programs to ensure and promote the sustainable development of the BBR's natural resources through conservation and utilization policies. In addition, it was mandated to coordinate with national agencies and local governments to ensure that their programs, projects and activities are aligned with the BBREPC plans, programs and policies. The Council also undertook appropriate information and education activities to promote and encourage the involvement of all sectors of society and mobilize people participation in the environmental management of the BBR.

The BBREPC is composed of the governor of Batangas; the mayors of cities and municipalities

located within the BBR; the head of DENR's PENRO; the local manager of the PPA; the district commander of the PCG; the head of the Maritime Industry Authority; the head of the local office of the Department of Agriculture; the President of BCRMF to represent industry; a representative from an NGO; and the Chair of the Committee on Environment of the Provincial Board. The head of the PG-ENRO is an *ex-officio* member. Figure 5 shows the composition of the BBREPC.

The BBREPC provided an important multi-sectoral forum where information can be exchanged, differences can be explored and trust can be built to enhance the formation of productive cross-sectoral relations. This forum brought business, government, academic and grassroots actors into systematic contact with one another, whereas previously such interaction used to be sporadic at best, thereby allowing them to jointly discuss ideas and focus on strengthening linkages.

**Figure 5. Composition of the Batangas Bay Environmental Protection Council.**



Source: Estigoy, 1998.

The Council was given authority to oversee the formulation, adoption, implementation, and policy direction of the SEMP for the BBR and related actions. It was not just an informal or advisory body, it was empowered to make decisions. Doing so and managing multisectoral relationships and moving it towards agreed-upon goals requires carving out arrangements that clearly apportion roles and responsibilities, enable mutual influence and problem-solving and assess mutual gains.

A structure with a process that enables all parties to participate in shaping outcomes is critical. Membership on the Council was particularly crucial to private sector involvement. It provided an avenue for industry participation in pollution management other than being a

regulated entity or a polluter, and for industry and government to work together rather than to view each other as adversaries. Another incentive in encouraging the participation of private companies in the project was the opportunity to negotiate voluntary agreements with the national DENR and the PG-ENRO. These agreements provided industries a grace period before pollution emission standards are strictly enforced. In return, each industry agreed to a targeted reduction in hazardous waste, to implement a pollution management audit, and to develop and implement by the year 2000 a follow-on work plan and schedule for achieving identified goals.

Unlike other voluntary agreements in the region, the Batangas Bay initiative was not just focused on an industry's role but also on the roles and responsibilities of both the public and private sectors in addressing a common environmental problem, voluntarily and in partnership with each other. Each signatory must fulfill its identified role and action in order to allow others to implement theirs.

Furthermore, BBREPC gave the private sector an opportunity to be involved in the program as a group. This reduced the appearances that a single company may be receiving special treatment. It also provided a means for the broader concerns of the private sector to be expressed and for the private sector's positions to gain legitimacy.

Experience in Batangas has demonstrated that the private sector found its direction, role and functions within a well-defined ICM framework and waste management program. ICM practices facilitated balanced multiple resource uses, a healthy functioning of market mechanisms and the sustainability of the resource base. These are compatible with long-term interests of the private sector and thus provide incentives for public-

#### **Box 4. Duties and Responsibilities of the BBREPC.**

- Delineation of policies regarding the protection and preservation of the ecological balance.
- Coordination with government, NGOs and the private sector regarding issues on environment protection.
- Initiate legislation that seeks to minimize the risks of pollution within the BBR.
- Monitor compliance of national and local laws pertaining to pollution control.
- Promote public awareness on and participation in abatement of pollution in the BBR.
- Undertake projects that will encourage marine pollution reduction, prevention and risk management.

Source: Provincial Ordinance No. 1 Series of 1996.

private partnerships (PPP). The success of the BBREPC carries a strong potential to be carried into other infrastructure programs and possibly other developmental areas. BBREPC promotes extensive authority, equal opportunity and shared responsibility and builds partners not adversaries.

**PROVINCIAL GOVERNMENT-ENVIRONMENT AND NATURAL RESOURCES OFFICE (PG-ENRO)**

Integration and coordination among the different sectors, national and local government agencies and other stakeholders for the proper management of the coastal environment are the essence of ICM programs. There is a need for a local office to serve as a clearing house and central coordinating agency, a focal point for multisectoral activities. A permanent coordinating agency within the framework of the local government is an effective way to coordinate various sectors and manage an ICM program.

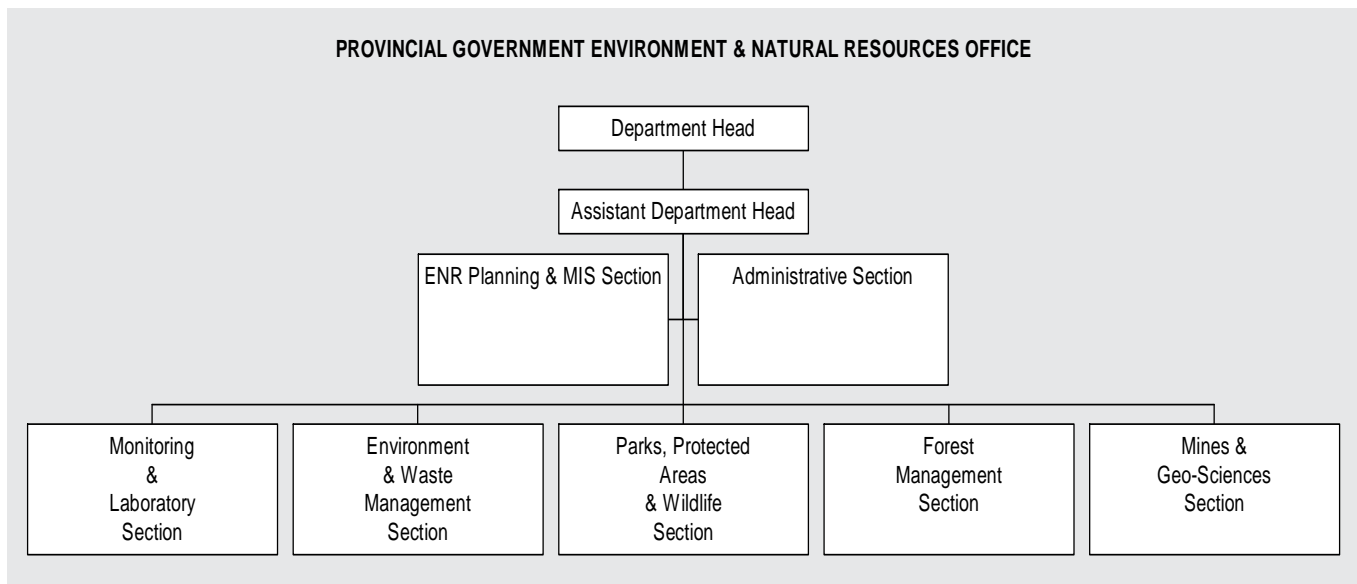
The Provincial Government of Batangas established the PG-ENRO through Provincial Ordinance No. 03-95 in December 1995 to serve

as the technical secretariat of the BBREPC and to perform the devolved functions of the DENR (Provincial Ordinance No. 3 Series of 1995). PG-ENRO was tasked to coordinate the implementation of the SEMP. Its general mandate included: taking the lead in coordinating the implementation of environmental management programs in Batangas; developing operational plans and strategies for implementation of environment and natural resources programs and projects; enforcing pollution control and environmental protection laws, rules and regulations; and coordinating the actual implementation of the ICM by the concerned sectors.

The establishment of the PG-ENRO thus provided a lead agency with the appropriate mandate and the capacity for integration and coordination among the different sectors, national and local government agencies, and other stakeholders for the proper management of Batangas Bay.

The organizational chart of PG-ENRO is given in Figure 6.

**Figure 6. Organizational Chart of PG-ENRO.**





## ESTABLISHING ENFORCEMENT TEAMS

Strengthening enforcement is at the heart of improving the Philippine environment given the deficiencies in compliance and awareness of Philippine environmental laws as well as DENR's very limited resources. In the BBR, it was recognized that local law enforcement officials in specific jurisdictions lack the training, specialized equipment and resources to adequately enforce existing laws. Through the coordinative efforts of the PG-ENRO, a team was organized composed of individuals from relevant agencies to work cooperatively and expeditiously provide enforcement in preventive, detective and recovery measures. This is an informal team that spans several organizations such as the PCG, PPA, DENR and its provincial offices, PNP Maritime Police and the PG-ENRO.

The PCG implements measures to manage pollution from ships and ports and harbors within their jurisdiction and supervise operations against vessels contributing to marine pollution.

On the other hand, the Marine Section under the Port Services Division of the PPA monitors, supervises and controls all vessels' activities and other marine service operations, enforces prescribed rules and regulations pertaining to navigation, operational safety, marine pollution control, and anchorage operation. It coordinates with other offices regarding harbor maintenance, installation of navigational aids and proper operation of available communication.

The provincial and local offices of the DENR participate in the monitoring, evaluation and investigations of violations done by the industries in the operation/implementation of their projects. For its part, the PG-ENRO, supported by data

generated by its water quality monitoring team, recommends the issuance of temporary closure and cease and desist orders to erring factories and enterprises. This showed the public that the government is not selective in implementing appropriate regulations.

The team established a joint emergency response mechanism and covered preventive, detective and recovery activities. A Batangas Bay Marine Pollution Control Contingency Program developed by the 5<sup>th</sup> Coast Guard District aimed to protect Batangas Bay and its rivers and tributaries from the damaging effects of oil spills and the spread of noxious substances. The program provided a coordinated response mechanism for combating oil spills using the combined resources of the private sector and the government. This is complemented by a coordinated local response mechanism for oil spills put in place through the combined efforts of the Provincial Government, the PCG, Pilipinas Shell, and Caltex Philippines.

### Box 5. Experiences of the Enforcement Team.

"I caught an old man dumping waste into the sea. I ordered him to dive and retrieve everything that he threw. Those who witnessed the incident thought that I was cruel. But I stood by my decision. Later, I approached the old man and explained to him why dumping waste into the sea is not a good practice. He apologized to me. The old man and any other residents of that community were never again reported to have polluted the sea."

**Ponciano Angeles**  
MARPOL Inspector, Port of Batangas

Interagency coordination in law enforcement made some positive results. The PCG, noted how the people's consciousness on environmental protection changed when they saw that the government was serious in enforcing environmental laws and standards. Working as a team has improved the speed in which an incident can be recognized, analyzed, deterred and responded to, thereby limiting the damage and lowering the cost of recovery.

Lessons in enforcement point to bringing together a team to analyze and solve complex issues. The team should have the ability to coordinate a response, work proactively and to create a liaison to deal with institutional barriers, enabling the team to exert more authority. It is also important for the team members to obtain management support from their respective offices and buy-in for human resources and costs, and communicate their objectives and operational plan to management and others who need to know and understand the team's operations. Periodic meetings should be held to provide information and discussion on important enforcement issues. In short, an integrated law enforcement group within the coordinating body can successfully resolve use conflicts. Integrated law enforcement can be effective when legislation and regulation are integrated and do not conflict with each other.

#### **JOINT EFFORTS TO MONITOR ENVIRONMENTAL CHANGES**

A pollution monitoring program was developed which addressed selected critical issues, problems and parameters at specific sites. The monitoring program was expected to provide policymakers with useful information on the state of the marine environment, such that appropriate strategies and actions may be undertaken for the sustained use of the marine resources.

The program identified sustainable environmental parameters for monitoring, enumerated equipment and supplies needed in the laboratories and provided direction on sampling and analytical methodologies. A monitoring program was set up utilizing multisectoral involvement and following the principle of shared responsibility to ensure that the process of environmental monitoring and assessment can be sustained.

MPP-EAS provided technical support and basic sampling and field equipment, handled training programs and conducted baseline studies. PG-ENRO provided the staff, office space, and operating expenses. It likewise attended to sampling and field measurements and analyses of basic parameters. The Provincial Government of Batangas refurbished a small building to house a laboratory, hired two chemists, and provided a budget for the maintenance and operating expenses of the laboratory. MPP-EAS provided the equipment needed for the laboratory. A more equipped Batangas Environment Laboratory (BEL) was established in 2004 through the assistance extended by the National Power Corporation.

In case of analysis of more difficult parameters, the line agencies provide technical support to the PG-ENRO. For example, the Batangas Water District focused on sampling and analysis of fecal coliform. Other government offices in Batangas provided technical or logistical support in monitoring as exemplified by the PCG which provided boats and additional manpower.

The local government units provided assistance in pinpointing "impacted" sites and pollution incidents which they are duty-bound to immediately report to PG-ENRO. It likewise helped in the field during the monitoring activity,

if needed. On the other hand, the NGOs organized people’s organizations (POs) for community-based monitoring and assessment.

The private sector contributed to the maintenance of the field office and provided logistical support in sampling and analysis. Sakamoto Chemicals Inc., United Coconut Chemicals Inc., AG&P and Pilipinas Shell, for instance, conducted sampling twice a month. More importantly, they served as role models of effective compliance and pollution control initiatives.

The academe, specifically the Batangas State University initiated periodic inter-laboratory comparisons for parameters being measured, contributed in the evaluation and assessment of sampling protocols and data generated, and

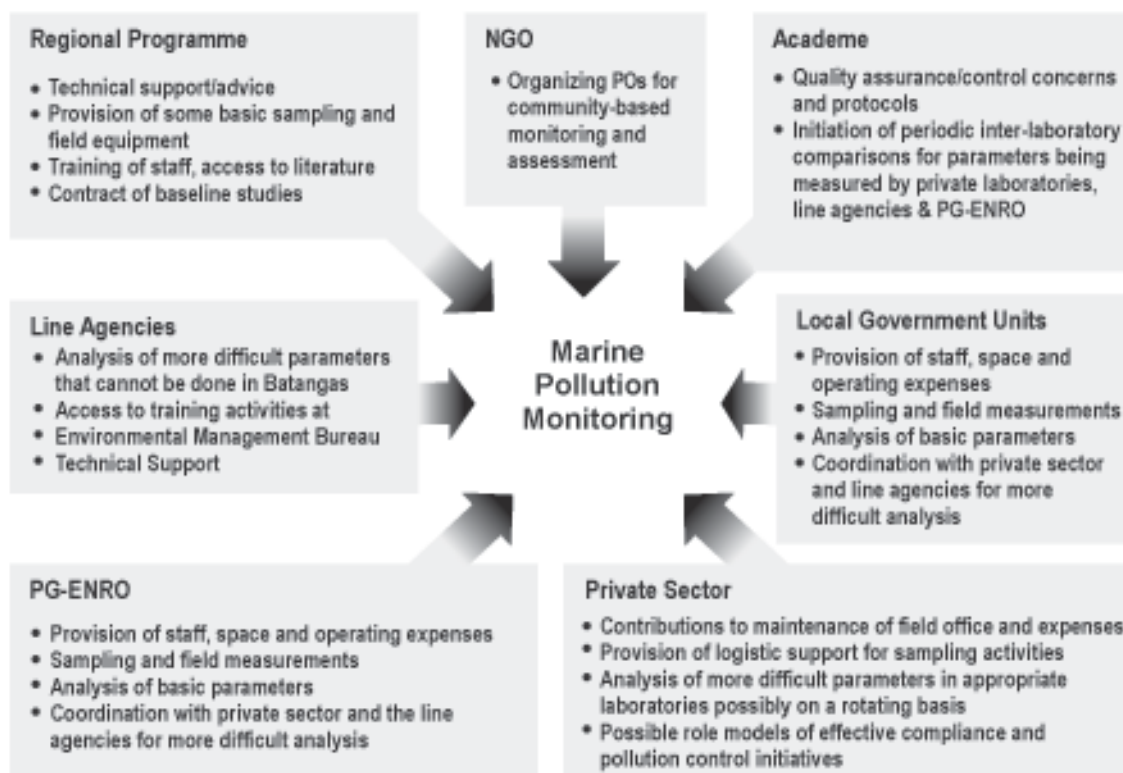
participated in sampling and analysis for various parameters.

The extent of involvement of the participants in the program is illustrated in Figure 7.

The monitoring program constantly provides the local governments with information on water quality. Information is also provided when problems or issues arise such as the occurrence of red tides, fish kills and others. This information is essential not only for the management of fisheries and aquaculture in the coastal waters but also for marine recreational activities and tourism as well.

It was recognized that joint monitoring eliminates bias, encourages objectivity and enables the team to exercise quality assurance and control.

**Figure 7. Multisectoral Monitoring Program in Batangas.**





*Monitoring team conducting sampling in the bay.*



*PG-ENRO chemists doing water quality analysis inside the laboratory.*

Lessons point to the importance of constant and close coordination among the members and the adoption of uniform and standard sampling and analytical methods. Proper documentation and exchange of results among members of the team should also be maximized. Members should be kept informed of the status and progress of the monitoring efforts so that interest and enthusiasm will be sustained.

#### **MANAGING MULTIPLE-USE CONFLICTS**

Few multisectoral cooperation initiatives continue in the long run without having to deal with conflicts and differences. Disagreements in the course of implementation are highly likely. These challenges can emerge from differences on how parties organize themselves or carry out program activities, to unanticipated implementation questions or issues raised by changing circumstances. Given the likelihood of conflicts arising in the case of multisectoral cooperation, it is critical to have mechanisms for managing conflicts between involved parties.

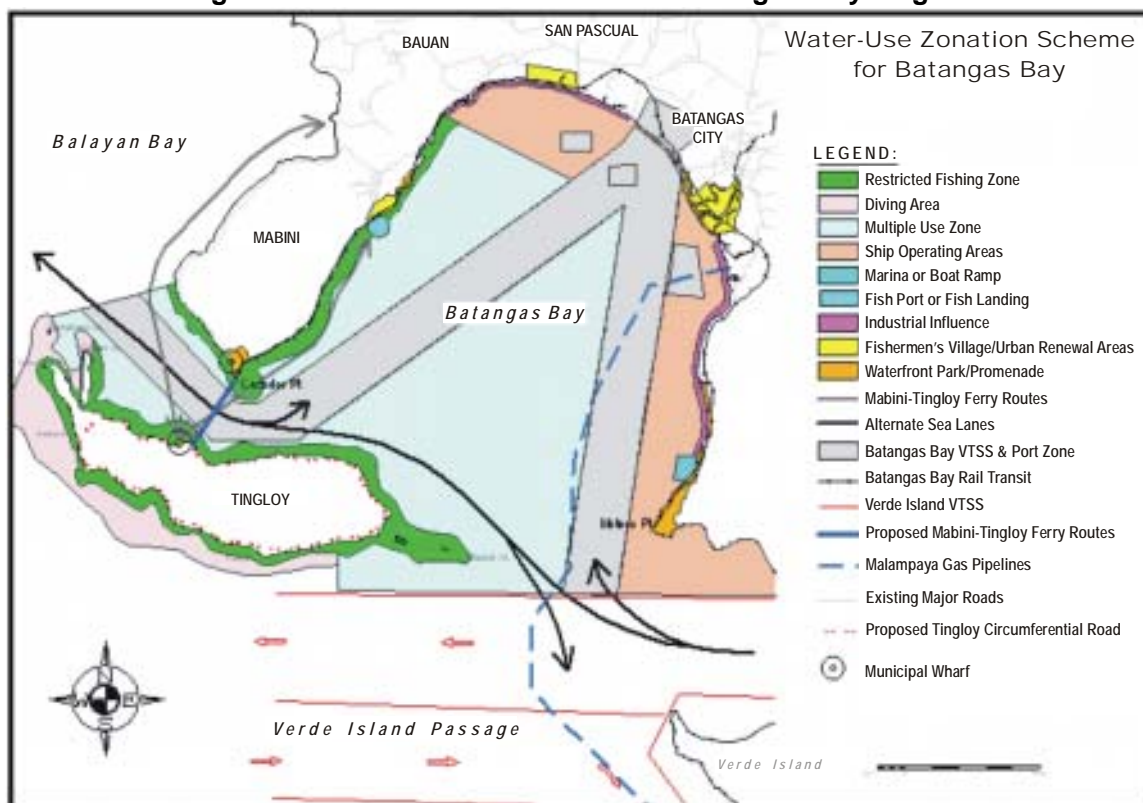
In the BBR, an example of such mechanism is the BBREPC which is a multisectoral forum for

airing concerns and resolving multiple use conflicts. Lessons point to the importance of identifying the present and likely future users of the bay and involving them in the process of avoiding and resolving conflicts as early as possible. New and emerging uses should be anticipated and addressed as early as possible with the involvement of participants. Users should be able to identify the specific tangible cause of any conflict. When conflict situations are tackled head on and openly they become an opportunity to build and strengthen constituencies and enhance opportunities for all users.

Sea-space zoning and risk assessment became two notable examples of cases where multiple use conflicts were recognized and dealt with using the BBREPC.

#### ***Zoning the Sea Space***

Batangas Bay is increasingly being used by both domestic and foreign vessels resulting in increased vessel traffic over the years. This condition raises three interrelated issues for the management of the bay resources: the congestion in sea vessel traffic; the potential of oil spill and ship collision; and marine pollution. PPA is

**Figure 8. Zonation Scheme for the Batangas Bay Region.**

Source: MPP-EAS, 1999.

implementing a vessel routing system but this may be inadequate considering the expected volume of traffic.

With the objective of rationalizing navigational traffic and consequently, reducing risks of accidents and spills, PG-ENRO, PPA, Maritime Industry Authority, PCG, and the shipping companies and industries located in the Batangas Bay area initiated steps towards the establishment of a vessel routing system with overall coordination and support from the BBDP (MPP-EAS, 1998a). A technical study was conducted leading to a recommendation on the optimal vessel routing system for the bay. Unfortunately, the vessel traffic system proposed has yet to be implemented since certain recommendations require the acquisition and installation of equipment and facilities.

Another example is the water-use zonation scheme for Batangas Bay, developed to classify

ecosystem function-based development zones through evaluation of environmental and socioeconomic features of coastal/marine areas. Three water-use zones were determined for the BBR: 1) restricted-use zone for activities that depend on the maintenance of a certain quality of water; 2) exclusive-use zone for activities that require unhampered access to their area of operation; and 3) multiple-use zone for activities that require movement and hence, can share the same place at different times (MPP-EAS, 1999).

Water-use zoning was applied in managing multiple-use conflicts among fishing, diving, tourism, and navigation activities as shown by the closing of Maricaban Strait for inbound and outbound shipping vessels. This decision was formalized by the BBREPC in Resolution No. 2 Series of 2001, and has therefore helped in mitigating the problems of incompatibilities of use and crowding. In the BBR, coastal LGUs are often overwhelmed by the scale and dominance of some

users of the bay such as shipping and port operations and the location of strategic industries like power plants and oil refineries. The bay users are sanctioned by and are responsible only to the national government and the host city/municipality is put in a quandary on how to deal with them. Collectively, through the BBREPC, the concerned LGUs dealt with the situation more effectively.

### Assessing Risks

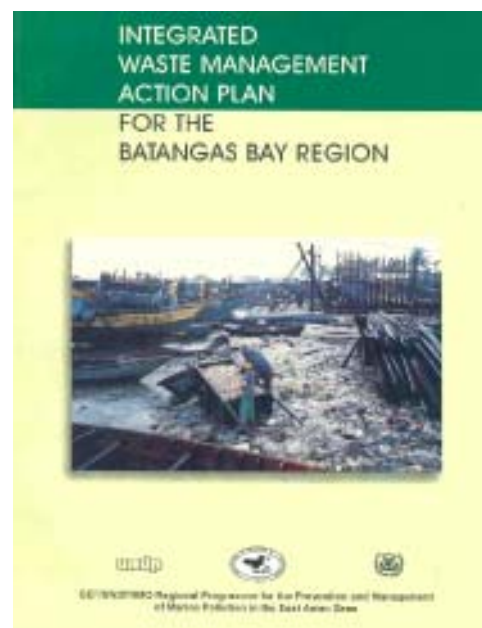
The risks posed by oil spills were assessed through the use of a three-dimensional circulation model which analyzed the water movement processes that control the transport of pollutants, providing information needed for environmental contingency planning and pollution risk management. An oil spill trajectory model was also applied to simulate hypothetical oil spills from oil refinery locations in Batangas Bay.

Risks associated with agricultural wastes come mainly from runoff and the leaching of fertilizers and pesticides/herbicides. Although pesticides are considered to be a step towards food sufficiency, the environmental cost of increased pesticide use still raises significant concerns. Even with extremely small amounts of pesticides applied on a given area, less than 0.1 percent of many insecticides actually reach the target organism, hence the remainder becomes environmental contaminants. Common pesticides/herbicides used by farmers in Batangas Bay were Methyl Parathion and Azinphos Ethyl. Despite the ban on these, a fair amount is apparently still being used in the area. Inevitably, some of these pesticides end up in Batangas Bay. Recognizing this issue, a Memorandum of Agreement was reached between MPP-EAS and the Food and Agriculture Organization (FAO) in December 1996, to conduct a pesticide risk assessment in Batangas Bay. The study was conducted to aid agricultural

waste management at the demonstration site and to transfer the risk assessment capacity to the local professionals. The study noted early warning signs appearing from the initial risk assessment and that the consumption of some pesticides such as carbaryl should be reduced (MPP-EAS and FAO, 1998). This result was presented to the BBREPC for close follow-up and monitoring of implications by the Provincial Agricultural Office (PAO)/Municipal Agricultural Office, and the field workers of the fisheries office.

### GETTING RID OF WASTES

A cross-sector and cross-media approach to waste management requires the formulation of a comprehensive waste management plan that will address the waste problem in both the short and long term. In the BBR, an IWMAP was developed after a series of public consultations in order to provide a framework by which waste management and disposal can be effectively carried out, consistent with national, regional and provincial policies, and in accordance with developmental



goals and environmental standards set in the BBR. IWMAP utilizes the combined resources and capacities of both the public and the private sectors. It constitutes a comprehensive package of actions designed to address the multi-dimensional nature of waste management problems while, at the same time, focuses the limited resources and capacities of major waste streams that are critical to the sustainable development of the BBR. IWMAP initially concentrated on four major waste streams — municipal solid waste, industrial hazardous waste, ship and port waste, and municipal sewage — and agricultural waste as a fifth waste stream (MPP-EAS, 1996). Successful implementation of the plan required acceptance and adoption by the stakeholders and this was facilitated through BBREPC Resolution No. 2 Series of 1996.

Voluntary participation of industries is an important complement to regulatory measures and is critical in the management of industrial wastes. Through the BCRMF, industries entered into a voluntary agreement with the government to be the implementing group for several measures identified in the IWMAP specifically in the

management of industrial and ship/port wastes. These measures and activities included: 1) inventory of hazardous waste sources, storage, treatment, recycling and disposal facilities; 2) implementation of an industrial hazardous waste minimization program; 3) development of a pool of expertise among industries through training on pollution management appraisals; 4) conduct of pollution management audit; 5) identification and evaluation of transitional technologies, practices and facilities for off-site hazardous waste processing and disposal; and 6) preparation of a proposal concerning the hazardous waste storage, treatment and disposal facility for the region and, eventually, joint ventures for these facilities and services (Contreras, 1999). Experience in the implementation of the IWMAP with industry partners highlights the importance of a regular collaboration with and active participation of a private group or NGO in improving the chances for a successful and sustainable outcome and in creating a broad social and political base of support to sustain the initiatives even if support by government institutions lessens due to changes in economic and political leadership.



*Signing of the voluntary agreements by industries (top left), the Provincial Government of Batangas (bottom left) and DENR and port agencies (right).*

While short-term activities are being implemented to generate concrete demonstrable experiences, transitions for long-term options have to be prepared at the same time. In the BBR, four projects dealing with municipal solid waste, agricultural waste, ship and port waste and industrial hazardous waste were identified while waste reduction options were being carried out. Technical studies on these projects were conducted under the direction and coordination of the local multisectoral technical working groups. Technical options, and financial and economic analyses were completed and promoted among the sectors. The government did not have the financial means or technical capability to solve problems of waste handling and disposal. For example, the League of Municipalities of the Philippines — the umbrella organization of all municipal government chief executives — recognized that insofar as solid wastes were concerned, individual municipalities could not afford the waste management services required by the Local Government Code. Collectively, however, it was demonstrated that the quantities and types of waste available across the province could be of commercial interest. A joint undertaking, which would keep the public sector involved as a facilitator, regulator and part owner, was preferred. As a result, in October 1998, an agreement was reached among local stakeholders in the public and private sectors to proceed to the next stage of the development process — packaging and promoting opportunities (Ross, et. al, 1999; Ross, 1999).

Investment opportunity briefs were prepared jointly by the local public and private sectors. The opportunity briefs were then presented at the Investors' Round Table on Public-Private Partnerships to enable the international business and investment community to assess opportunities for environment investment in the BBR through the development and implementation of PPP. Four

opportunity briefs were presented on near-to-market projects and opportunities in Batangas, these were: Animal Waste Management and By-Product Marketing; Regional Municipal Waste Management Facility; Hazardous Waste Management System; and Shore Reception Facility and Used Oil Recovery/Recycling for the Ports of Batangas and Manila. As a result, six companies submitted expressions of interests for the four Batangas Projects while local stakeholders initiated the process of selecting partners. A consortium of companies from New Zealand — Waste Systems New Zealand Ltd. — was eventually selected in March 1999 as the private partner for an integrated waste management facility.

A PPP in waste management should combine the strengths of both government and the private sector towards a rational solution to the waste problems. In the BBR, an MOU was signed by the local government and its private sector partners, recognizing that for the PPP to succeed, the integrated solid waste management system needed to be financially viable, environmentally sustainable, socially acceptable, and affordable. Under the MOU, both partners explicitly made their commitments to the project. Eighteen months after the signing of the agreement, the following were accomplished: 1) the technical studies and waste surveys have been completed; 2) site investigations have identified a technically feasible final disposal site; 3) transportation and recycling concept studies have been undertaken; and 4) the mechanism to ensure income stream has been identified. The MOU was extended until December 2001 to allow the completion of the feasibility study as well as related development activities. In the commercial model for PPP, a project operating company will be eventually put up to operate and manage the integrated waste management facility, which shall be a joint venture between the public sector corporation and the



private sector consortium (Estigoy and Perez, 2001).

The political will and leadership displayed by local chief executives and legislative bodies to pursue the PPP scheme on waste management led to the passage of enabling ordinances which became the basis for the formation of the public sector corporation, the Batangas Environmental Services, Inc. (BESI) and its registration with the Securities and Exchange Commission. The PPP approach was significant since it enabled the public and private sectors to share costs, risks, and benefits. Public interest – especially the community’s – became an integral part of the program (Estigoy and Perez, 2001).

Transparency, trust and confidence are basic characteristics of a successful PPP. Flexibility is likewise needed since the success or failure of the project depends on both partners. When one partner is experiencing setbacks or constraints in

attaining project objectives due to basic differences, the other partner should fill up what is lacking (Estigoy and Perez, 2001).

People’s awareness and readiness to support the waste management projects initiated under the sustainable financing component should also be an area of concern for a successful implementation of an IWMAP. In the BBR, a contingent choice survey was conducted in selected coastal and interior municipalities, to generate some benchmark information on people’s willingness to pay for environmental services (Abansi, 1999; Tejam and Ross, 1997).

The above experience in managing wastes highlights the importance of a comprehensive action plan developed through intensive consultations and accepted by stakeholders. It is crucial that while planning and preparation for long-term options are on-going, short-term activities that generate visible socioeconomic

<b>Box 6. Commitments of Public and Private Partners.</b>	
<b>Public sector commitment</b>	<b>Private sector commitment</b>
<ul style="list-style-type: none"> <li>• Ensure that all activities comply with Philippine laws.</li> <li>• Clarify government’s permit and approval processes and facilitate timely and cost effective submissions to the process.</li> <li>• Assist the private sector to access sites for investigative field studies.</li> <li>• Provide available reports and support information concerning waste generation and management in Batangas.</li> <li>• Valuate public properties, facilities and services as equity in the operating company.</li> <li>• Develop, adopt and implement regulations controls affecting waste generation and illegal waste disposal operations.</li> </ul>	<ul style="list-style-type: none"> <li>• Finance and conduct the feasibility study.</li> <li>• Develop a bankable project document for submission to investors and lending institutions.</li> <li>• Prepare plan and schedule for constructing and commissioning the facilities.</li> </ul>

Source: Ross, et. al, 1999.

and ecological benefits are being done to improve perception and attitude. Likewise, voluntary and active participation of industry should be sought and maximized in the management of industrial and hazardous wastes. The enormous amount of mitigating measures to manage wastes could create investment opportunities that could encourage the formation of PPP in waste management using the combined strengths of both government and the private sector towards a rational solution to the waste problem.

#### **MONITORING CHANGES**

Monitoring efforts are carried out to guarantee the quality of project outputs. The monitoring activities should be comprehensive in order to determine not only whether the goals were being met but also if they were not, what has gone wrong with the assumptions or methodology so that appropriate mid-course corrections could be made. In the BBR, progress made by the BBDDP was documented in quarterly reports prepared by the PMO and submitted to the Regional Programme Office (RPO). The quarterly reports presented in detail the progress of the activities conducted, the consultations held to support the activities and participating sectors, problems encountered and solutions made. These reports provided important inputs in making adjustments in planned activities. Annual reports summarizing the different accomplishments, shortcomings and problems were prepared and the actions to be taken for the succeeding years were outlined.

The evaluation of the ICM program should be derived from the outcomes of the program. It is important for problems and issues garnered from the ICM initiatives be made known. A mid-term evaluation workshop was conducted by the BBDDP

in 1997 to review the project activities, evaluate their results, assess their impacts and make recommendations on measures for improvement and extension of demonstrable experience (MPP-EAS, 1997). Likewise, the workshop provided an assessment of the performance of all project activities, both individually and as a whole. Each activity was presented with focus on: 1) achievements and progress in terms of implications and benefits for application of ICM; 2) experiences and lessons learned that could be extended or demonstrated to other parts of the region/country; 3) recommendations on the improvement of performance and follow-up activities upon completion of the project; and 4) processes such as consultations conducted.

ICM projects should have both reporting exercises and an outside evaluation preferably at midterm and near the end of the project. Hopefully, the project can be flexible enough to modify its interventions as new information is obtained from experience. It would be best to extend monitoring and evaluation of projects beyond the completion of a project to determine actual long-term impacts and sustainability of institutions. External monitoring and evaluation were conducted by two evaluation teams who came to Batangas in separate occasions. The evaluation generated lesson notes which emphasized the success of partnership with the private sector. The ICM project introduced in Batangas created a forum or framework which brought private sector into the management structure, thereby promoting dialogue with other stakeholders, particularly with different levels of government.

A terminal report served as a consolidation of inputs, products, problems and lessons of a five-year project of which the BBDDP is a significant part. This report stressed that the BBDDP is

successful in implementing a comprehensive ICM program. Over the life of the project, it was able to establish and operationalize interagency and multisectoral coordinating mechanisms which included all relevant government agencies. In addition, it developed a prioritized agenda, undertook capacity building to strengthen local planning and management capabilities, developed environmental quality monitoring programs, established mechanisms to ensure sustainability of the programs and promulgated needed local laws to legitimize institutional arrangements and permit systems (MPP-EAS, 1998b).

#### **SUMMARY OF LESSONS**

The experiences encountered in the implementation phase of ICM provided a number of useful lessons:

1. It is crucial to have a structure backed by appropriate legislation and whose processes enable all parties to share information, explore differences and build trust to enhance the formation of productive cross-sectoral relations and participate in shaping outcomes. Likewise, the mechanism should be complemented by a permanent coordinating office/agency within the framework of the local government to coordinate various sectors and implement the ICM program.
2. More effective enforcement requires coordinated teamwork that would proactively, cooperatively and expeditiously provide enforcement in preventive, detective and recovery measures. An integrated law enforcement group within the coordinating mechanism can successfully resolve conflicts when legislation and regulation are integrated and do not conflict with each other.
3. A mechanism should be developed for managing conflicts and making available a venue or forum for airing concerns, discussion and resolution and where conflicts can be tackled directly and openly. The mechanism becomes an opportunity to build and strengthen constituencies, enhance opportunity for all users, and build relationships that are based on trust and nourished by shared experiences, achievements and values.
4. An environmental quality monitoring program should be put in place to provide policymakers with useful information on the state of the marine environment such that appropriate strategy and actions may be undertaken for the sustained use of the marine resources. The monitoring program should utilize multisectoral involvement and follow the principle of shared responsibility to ensure objectivity and encourage quality assurance and control.
5. It is important to demonstrate as early as possible the socioeconomic and ecological benefits of ICM program implementation. Such benefits normally change the perception and attitude of policymakers and economic managers as well as the people's support to continue the current environmental management efforts. Waste management is a component that can satisfy short-term expectations of benefits and at the same time, provide for long-term sustainable management

interventions. A comprehensive action plan should be developed through intensive consultations, accepted by stakeholders and implemented with the voluntary and active participation of industries and other sectors. Investment opportunities should be created to encourage PPP that combines the strengths of both the government and the private sector towards a rational solution to the waste problem.

6. Periodic monitoring and evaluation is important to define and refine strategic focus. Regular reporting exercises in the form of reports should be complemented with external evaluation at the midterm and end of the project. The project should be flexible enough to modify, refine and improve its interventions as new information is generated from experience.

## Moving On Amidst Challenges





## 4 Moving On Amidst Challenges

Few multisectoral cooperation initiatives continue for long without having to deal with some uncertainties and unexpected outcomes that may somehow constrain the smooth implementation and expansion of activities. As shown in this section, these challenges can emerge from differences on how parties organize themselves or carry out program activities and from unanticipated implementation questions or issues raised by changing circumstances. This chapter describes these uncertainties, the lessons derived in dealing with them and the foundations for change to neutralize possible setbacks brought about by these uncertainties.

### CHALLENGES

#### *The Air of Uncertainty*

##### *Reforms and Reorganization*

In 1999, MPP-EAS officially ended. A second program — Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) — was launched in October 1999 as a follow-on phase of the GEF/UNDP/IMO Regional Programme (MPP-EAS). PEMSEA assists local governments in eight ICM demonstration sites (including Batangas) in the region to develop and implement ICM. Batangas was still supported by PEMSEA at a limited scale to document the lessons learned, refine the

plans/SEMP and develop a new project/program cycle and establish a training center.

The closing of MPP-EAS resulted in a change in project personnel at the BBR. PG-ENRO took the full responsibility of managing ICM activities. The integration of the project within PG-ENRO eased the difficulties associated with such a transition. This integration model allowed direct and faster transmission of management decisions and strategies from PMO to PG-ENRO personnel. Likewise, it gave ample time for the local office to prepare appropriate staff positions that allow its structure to absorb the PMO staff.

The above experience highlights the importance of having an office with people who will continue programs beyond the project's life, even without project support and funding. Likewise, it is vital that an organizational culture that will facilitate the shift of project responsibilities to the local administrator and staff and other key focal points be nurtured at an early juncture to allow sufficient time for staff to learn the job and to obtain follow-up support under the auspices of the project.

##### *People's Apathy*

Despite the existence of an institutional mechanism that provided direction in the implementation of activities provided for in the SEMP and IWMAP, some activities were not carried out as envisioned because of people's

**Box 7. Environmental Scoping in Ibaan, Batangas.**

The local government of Ibaan agreed to have a sanitary landfill developed within the municipality. However, when the initial environmental scoping was held in the municipality, people protested in the streets and reacted violently to the decision. This posed a significant setback to the PPP team who had devoted so much time and effort to the development of agreements for the setting-up of the sanitary landfill.

apathy and indifference. A good example is the case of the identification and development of a regional sanitary landfill through the PPP approach. Several stages in the PPP process have been successfully completed, such as the formation of the joint venture company and the conduct of the feasibility study. The finalization of the site for the landfill posed a problem because people misunderstood the objectives and the nature of the project.

People's apathy posed difficulties in the sustainable financing component of the waste management action plan for Batangas. These difficulties could either be due to a lack of trust and confidence within and among the public and private stakeholders at the local level regarding an environmental program developed and implemented through interagency and intersectoral partnerships; or to the inexperience of the public and private sectors to the institutional, social, political and economic considerations of developing, negotiating, constructing and operating a mixed-ownership environment facility. PPP is a relatively new concept and as such, it is essential to build confidence and

understanding of the process in both the public and private sectors.

Lessons point to the fact that the extent of success is contingent on how people respond to ICM initiatives. Planning, implementation and leadership must be inclusive of the response of people. In spite of efforts to institutionalize a mechanism for people participation, response has not met expectations. The mismatch between expectations and aspirations and their fulfillment has in some cases led to alienation, apathy and discontent so that the quest for relative gains has become less driven and inconsistent. This underscores the need to educate the public adequately to improve their levels of awareness, perception and attitude towards environmental efforts. Parallel information-education-communication (IEC) activities, in addition to more serious community organizing activities, are needed to catalyze the immediate development of an informed socioeconomic base of the coastal communities.

**Can Integration Really Work?**

The Water-Use Zonation Plan of Batangas Bay approved by the BBREPC is the first of its kind developed in the Philippines. However, its implementation significantly depends on its integration with existing land use plans. Since water uses are related to land-based activities, water-use zonation is seen as a logical extension and an integral part of land-use planning and zoning.

PG-ENRO made efforts to coordinate with the Provincial Planning and Development Office of Batangas regarding the integration of the water-use zonation plan to the



Provincial Comprehensive Land Use Plan. Some municipalities, such as Mabini and Tingloy, have recognized the usefulness of the plan and adopted in part the recommended water zones. The case of Mabini and Tingloy are isolated cases, however. There is a need for a wider application. Recently, in the updating of the provincial physical framework plan, the water-use zoning scheme has been incorporated into the Provincial Physical Framework Plan after years of discussion and deliberation. The Physical Framework Plan will guide the municipalities/cities in updating or developing their land and water-use plans.

The above case emphasizes that integration of plans requires effective coordination with concerned stakeholders, including educating them on the importance and benefits of integration. It is also important to provide guidance to develop such an integrated land and water use plan. A pilot area to demonstrate the integration in one of the coastal municipalities will provide insights to other coastal municipalities. For example, the municipality of Tingloy was a good pilot site considering that it had no existing comprehensive land-use plan or zoning ordinance.

It is also critical that the public does not only accept the rationale behind the new integrated zoning policy but the local government be consistent and thorough in the administration and enforcement of the newly adopted integrated zoning plan. Above all, implementation should be viewed as a cooperative effort in which stakeholders do their part to make the zoning implementation a success.

### **Scientific Research Versus Management**

Scientifically sound information is essential in strengthening coastal and marine policies and management interventions. The application of the scientific method is necessary in the generation of reliable socioeconomic, ecological and technological information for decisionmakers. However, reliance in the elements of science should not take a large part of the financial and time resources of projects. In Batangas, preparation of the CEP and the SEMP was confined to less than two years in order to give time for their implementation. The assistance of experienced coastal management experts from UP and other institutions made this possible.

Likewise, the applicability of borrowed technology has to be subjected to careful verification. For instance, BBDDP installed a wave monitoring device in Batangas Bay to regularly monitor wave and tide data and feed into the hydrodynamic modeling of the bay. The device was developed by experts from the Korean Oceanographic Research and Development Institute. However, mechanical malfunctioning occurred and use of the device was not sustained resulting in losses from installation and set-up costs, but without corresponding benefits in the form of useful scientific information. The transfer of technology should have been adequately matched by capacity.

*A Fisheries Assessment Study* (Alino, et. al, 1998) was conducted by BBDDP in partnership with local professionals in Batangas and scientists from UP-MSI. This was in recognition of the limited capacity of the Provincial Agriculture Office (PAO) which performs the

devolved function of fisheries monitoring, evaluation and management as provided for in the Local Government Code. The provincial fisheries team worked on the technical component of the fisheries resources assessment study while De La Salle Lipa took charge of the socioeconomic component. The results of the fisheries study were presented in several stakeholder consultations in Batangas. It was a good research work in general, but it did not contain significant inputs for management.

This experience points out that science should have a clearly defined role as a partner in the management process. The outputs of research and the various technical tools must be used in a constructive manner that strategically contributes to the decisionmaking process. Scientists and managers must work closely together during project formulation and implementation. Several projects have original designs that emphasize natural science research but provide very little guidance on how to develop the policy and institutional linkages that will use this information to affect policy. There is a need for scientists to present information in a format that could be readily used by planners and decisionmakers.

Lessons also emphasize on the importance of linking scientific and management information to public awareness and environmental education programs. ICM programs should take this into consideration when supporting management-oriented research by incorporating information dissemination as part of the research program. Scientists and researchers should have the incentive to translate their research results into information and educational materials.

In short, the success of ICM lies, among others, in the integration of science and management and the communication between decisionmakers and scientists. Participation and environmental education are key elements that can link technical science with the legal and institutional management and development components. Methods on how to effectively combine science and management must be explored.

### **Government Priority in Environmental Management**

There is no doubt that the government recognizes the importance of environmental management. This is evident in the sector's inclusion among the different LGUs 10-point development agenda. However, as reflected on budgetary allocations, priority is still placed on direct human services to people such as health, education, peace and order, and social welfare. Furthermore, budgetary allocations on the environment are concentrated only on solid waste management. Other environment-related activities such as coastal cleanup, river rehabilitation and protection, reforestation and soil erosion prevention do not enjoy regular budget allocations even if these are usually undertaken by local governments in partnership with schools and civic organizations who pool manpower and financial resources.

There are times when politicians could not afford to consider long-term environmental issues. Local government's lack of priority on sustainable environmental management may be attributed to the political leaders' tendency to favor programs that generate quick and

visible results. Local government officials in the Philippines serve for a term of three years. Within this period, an elected public official must therefore be able to present highly visible activities that will immediately be 'felt' by the people.

Lessons underscore the need for education and continued exposure on environmental issues and concerns by local leaders. Readiness to accept and use ICM as a management strategy for sustainable development will then follow. Likewise, positive socioeconomic and political benefits as a result of sustaining natural resource bases can facilitate communication with politicians whose agenda are usually driven by the economic interests of their constituencies.

It is important that government agencies should be made responsible for seeing that environmental considerations play a prominent part in planning, development and implementation of programs. This is required by the Local Government Code. As a check that each sector fulfills its environmental responsibilities, it is suggested that government departments should present and quantify in their annual budgets the environmental measures they have decided to put into effect. The method for registering, describing and monitoring the government's total contribution towards ensuring sustainable development has proven to have a stimulating effect on the public administration and has prompted cooperation on environmental matters among the various sectors. For example, a government effort to build up environmental expertise in the country's municipalities is expected to lead to firmer environmental commitment on the part of local government.

Economic resources invested in environmental improvements should be used in a cost-effective manner and be directed towards areas that are likely to give the greatest environmental gain.

Priority should be given to a gradual increase in the use of economic measures such as environmental taxes, in addition to the administrative and legal expedients already employed in the cause of environmental protection.

#### FOUNDATIONS FOR CHANGE

Despite uncertainties and setbacks, it is important to persevere, to rally to close the gap, to maintain a tireless advocacy and vigilance for the bay region. Legislations, scientific support, plans and IEC activities continue to evolve as stakeholders seek and search for better ways to sustain and expand the ICM programs initiated.

#### *Legislations*

As rapid growth and development continues to occur in Batangas Province, more environmental issues and new challenges have to be addressed not only for the BBR but also for the whole province especially in the management areas of two other major bays in Batangas Province – Balayan Bay and Tayabas Bay. This requires amending Provincial Ordinance No. 01 Series of 1996 to expand the authority of the BBREPC over the management areas of the three bays, thereby ensuring the systematic, sustainable and balanced socioeconomic development of the whole province of Batangas. This will generate a general, unified law for the province and will allow the institutional mechanism to draw support from local and national legislations

The enactment of an amended ordinance is expected to have the following outcomes:

1. Consolidation and coordination of efforts, services and resources of LGUs and the private sector in implementing the SEMP of Batangas and its complementary bay region and ICM plans in accordance with the provisions on cooperative undertakings of the Local Government Code.
2. Strengthening of the existing BBREPC which would be renamed Batangas Environmental Protection Council (BEPC) and would be delegated by the Provincial Government to develop and recommend integrated environmental policies, formulate multi-bay region action plans, and set guidelines for the implementation of these policies and action plans.
3. Establishment of three-bay region ICM boards (the Batangas Bay Integrated Coastal Management Board, the Balayan Bay Region Integrated Coastal Management Board and the Tayabas Bay Integrated Coastal Management Board) and delegation of relevant LGU functions, including bay-wide policymaking, inter-municipal action plan development and the setting of guidelines for the implementation of these policies and action plans.
4. Enjoining the different municipalities to each establish ICM Boards as a multi-stakeholder body mandated to develop integrated environmental policies, municipal-wide action plans and set guidelines for the implementation of these policies and action plans.
5. Provision of incentives for local governments and the private sector, including NGOs, POs, civil society, and

private businesses to consolidate or coordinate environmental management efforts in accordance to the SEMP and to align independent initiatives to the integrated plans.

The above legislation is expected to support a three-tiered organizational structure as shown in Figure 9.

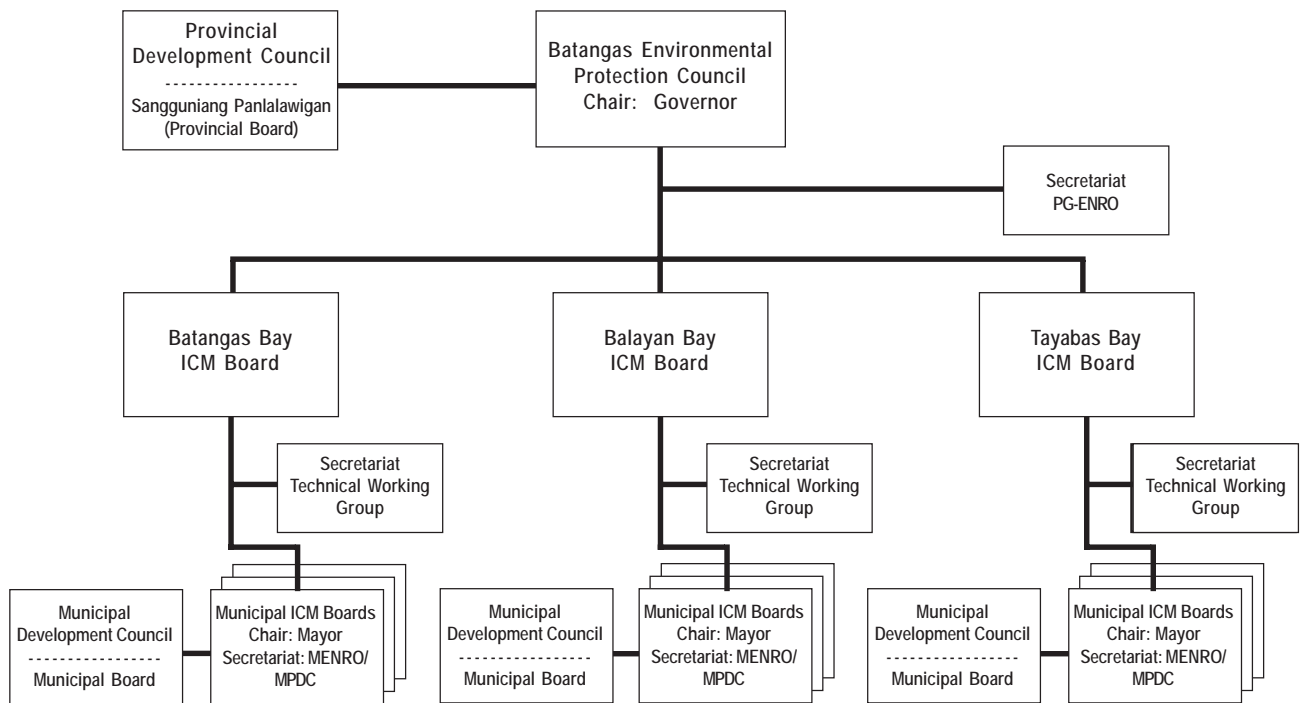
### *Strategic Environmental Management Plan*

The SEMP forms the base upon which further improvements can be anchored upon. As such, the SEMP likewise needs updating to address emerging critical issues not covered by the original plan. Some gaps exist in the light of recent developments in terms of changing policies at both the national and the local levels. The updated SEMP will prescribe how to overcome the gaps and introduce refinements that will ultimately lead to the widespread adoption of the ICM model in the whole province. In this regard, the PG-ENRO has organized a technical working group (TWG) that discussed in several workshops the improvements and updates for the SEMP. The TWG, together with a local planning expert, constitutes the planning task team that updates the SEMP and works towards its adoption by the Council. The updating also includes a SEMP for the two bay-areas in the province: Balayan Bay and Tayabas Bay.

### *Action Plan*

The continued implementation of the IWMAP was given additional boost especially in the area of solid waste management by the passage and implementation of RA 9003, the National Ecological Solid Waste Management Act. Local governments are mandated to develop

**Figure 9. Proposed Three-tiered Organizational Structure for the Batangas Environmental Protection Council.**



community-based waste management systems and establish material recovery facilities. The community organization approach at the grassroots level will ensure the promotion of public participation and the building of self-supporting and sustaining operations of solid waste management (SWM) by the LGUs. The action plan should set specific targets for waste reduction and should promote increased resource recycling and recovery through waste segregation at the households. It should emphasize on “learning by doing” to demonstrate a practical way of engaging LGUs and the people in SWM and at the same time comply with RA 9003. It is important that the plan encompasses the following stages: 1) establishing infrastructure according to the community’s needs, design of a collection mechanism and establishment of an institutional mechanism to facilitate the program; 2) emphasis on capability-building with the aim of increasing the community’s ability to manage solid wastes;

and 3) formulation of SWM models to illustrate and institute concrete management approaches to solid waste which are sustainable and can be easily replicated.

The action plan should provide for the setting up of a catalytic community-based waste recycling system, increase the capabilities of LGUs and develop enabling tools for policy development. It is also crucial to incorporate the use of applicable market-based instruments for the sustainable financing of waste management activities.

### *Enforcement*

Enforcement mechanisms were expanded as more groups joined the integrated law enforcement team in order to better meet the objectives of the program. The formation of *Bantay-Dagat* (Sea Patrol) as a volunteer people’s



Bantay-Dagat during regular patrol activities.

organization in enforcing environmental laws is a strong addition to the team.

*Bantay-Dagat* is a civilian fisheries patrol force made up of volunteers that try to keep a 24-hour watch on Philippine coastal waters up to 15 km from shore. Funding for the patrol boats comes from a variety of sources including the Bureau of Fisheries and Aquatic Resources, American NGOs, and the Japanese Government among others.

*Bantay-Dagat* was relatively successful in the province. Residents of coastal communities volunteered as members of the sea patrol teams and this helped lessen cases of illegal fishing and, at the same time, heightened the people's consciousness on environmental issues. This experience highlights the importance of mobilizing the community in enforcement and consequently making them co-owners and partners of coastal management projects. As the mechanism for enforcement expands and stabilizes, the opportunity can be extended to combine enforcement/regulations with financing schemes through market-based instruments. Those who wish to use the bay for aquaculture, reclamation and transportation activities must obtain a permit from PG-ENRO. A user fee system can be established.

### ***Public Awareness and Stakeholder Involvement***

Implementing the SEMP requires a comprehensive and holistic approach to communication at the community level. There must be a process through which information is imparted to the public and to all the stakeholders to increase their awareness, understanding and appreciation of ICM activities and their relevance. Considering that the environmental issues in Batangas are generally complex, an integrated IEC program should be provided to develop broad support for ICM implementation. In the BBR, all public awareness activities for ICM were rationalized and packaged in a comprehensive communication plan. The objective is to create awareness about the SEMP and promote adoption of action programs using various approaches and modes of communication either singly or in combination to influence the various stakeholders and provide a better understanding of the objectives. IEC can be used to help people become aware of the consequences of their actions, take ownership of planned interventions and assume responsibility for living within the bounds of natural resource use and development constraints.

The implementation of the plan needs to be strengthened and must cover a wider audience base. Efforts should be developed towards creating awareness and educating the grassroots communities, and in this regard, active media support and participation is important. In order to make media a strong partner of ICM, the PG-ENRO conducts media tours along Batangas Bay and requires media representation in the TWG. The PG-ENRO noted that the participation of the media is a sign that environmental issues and activities concern media practitioners who can help in program promotion, information dissemination, and public awareness. A more involved media is evident in the regular publication of *Balikas*, a local tabloid devoted to environmental issues. In

addition to AM radio stations, FM stations have also devoted time on environmental issues. An example is the morning program “*Taghoy ng Kalikasan*” (Cry of Nature) aired at GV99.1 FM.

Aside from creating awareness, it is crucial that IEC materials and strategies be used primarily to help ensure the mobilization of resources available from various sectors — LGUs, national government agencies, NGOs which have planned programs and projects supportive of the SEMP. The IEC should introduce concepts and principles related to identified environmental issues experienced by the community to increase their level of understanding and create an environment conducive to behavioral changes that enables them to take appropriate actions in line with the objectives of the SEMP. Only when environment-friendly behaviors and practices are widespread throughout the community can resource use and management be sustainable. IEC should be focused on building a constituency for ICM, a critical mass of the population who are environmentally literate, imbued with environmental ethics, shared responsibilities and shared actions. The IEC plan should include the use of media, the development of education tools and the utilization of community organization networks. It should involve all stakeholders from different sectors and focus efforts on sectors and key players that can help the community to actively participate thus leading to the greatest possible impact in the shortest possible time.

### *Government Action Programs*

In 1998, the Philippine Fisheries Code was enacted. The Code establishes coastal resource management as a national strategy. It likewise reinforces the constitutional mandate for preferential use of municipal waters by marginal and municipal fishers and the mandate of local

government units in the management of coastal resources and municipal waters.

Likewise, the Local Government Code recognizes that local government units (LGUs) have considerable control in matters related to environmental protection. The Code provides that national government agencies must consult the LGUs prior to implementation of any project or program. The need to consult is especially enjoined when the project or program has significant environmental impacts.

Much more than consultation, LGUs have to be empowered to initiate and sustain environmental programs at the grassroots level. Thus, the setting up of respective Municipal Environment and Natural Resources Offices (MENROs) was encouraged in the different municipalities in the Province of Batangas. Initially, the LGUs designated certain personnel to act as environment and natural resources officers. Later on, however, the more capable municipalities such as Batangas City, Lipa City, Bauan, Mabini, Lemery, Balayan and Nasugbu put up separate offices to exclusively handle environmental concerns.



*While enjoying the richness of marine resources, divers also partake in marine conservation activities such as the case in Mabini.*

ICM has been integrated in the provincial government's tourism program. The tourism industry in Batangas is dominated by water-based activities and is therefore largely dependent on the quality of the marine environment. Dive resorts will flourish if the coral reef remains intact and attractive. Meanwhile, beach resorts are viable if the beaches are clean and free from waste and pollution. Thus, the Provincial Tourism Office was later included in the membership of the BBREPC.

The Provincial Tourism Office noted that efforts to conserve natural resources along the Batangas Bay have helped promote tourism in the province. Foreign and domestic tourists come into the province both to enjoy the delight of nature and to provide their share in organized environmental activities such as the regular coastal cleanups. Several media networks have also featured the richness of Batangas' natural resources and culture in different publications and programs. On the other hand, movie and television productions have been constantly using several locations in the province, including the BBR, as shooting locations.

In order to sustain these activities, the Provincial Tourism Office has been working with the BBREPC in several environmental information and education campaigns. It has likewise organized and helped promote a number of activities and festivals that blend environmental consciousness with the indigenous culture.

It is important that government action programs are designed and carried out allowing the integration of ICM initiatives. Policies and procedures should be supportive of the SEMP and should provide a complementing environment for the ICM initiatives to flourish.

#### PROGRAM REPLICATION

The ICM model demonstrated in the BBR was replicated in Balayan and Adjacent Bays Region (BABR) in 2000. Balayan Bay is located in the western side of the Province, north of Batangas Bay. It is separated from Batangas Bay by a land mass known as Calumpang Peninsula.

Balayan Bay was selected as program replication area since it is the second largest bay in the province and has a rich biodiversity. Furthermore, the presence of multi-stakeholder involvement is evident, and includes NGOs and POs.

The Balayan Bay Project is divided into three components namely: preparation of the ICM plan; support for the enforcement crusade; and institutional development. The first component covers the conduct of consultation workshops and related capability-building programs from which the final plan will be based. The second component deals with the provision of support mechanisms to enforcement teams such as the *Bantay-Dagat* network which is present in six municipalities in the area. Initial successes along this area were noted, citing that cases of illegal fishing in Balayan Bay decreased by some 80 percent due to the active involvement in law enforcement of the *Bantay-Dagat* network. The third component focuses on training and other capacity-building programs, including the replication of the ICM Council in Batangas Bay.

Lessons in program replication show that a successful program does not automatically contain the seeds of its own replication. Instead, programs that are replicated have extensive evaluations. These evaluations provide clear information on the internal processes of the program as well as clear evidences that the demonstration project achieved the desired objectives in its original site.



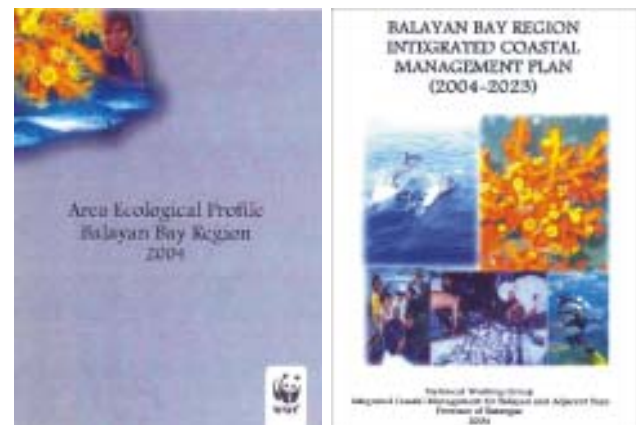
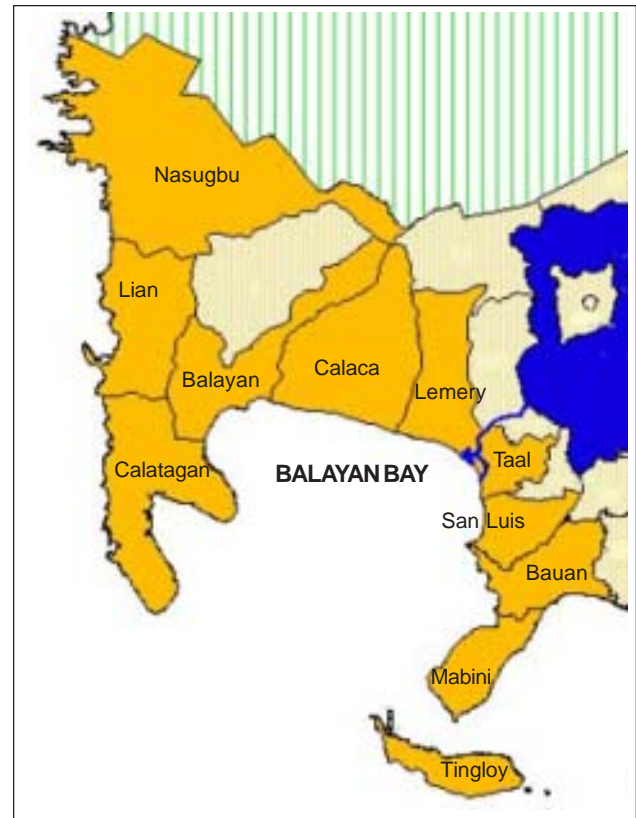
A replicable program should have an identifiable, coherent and interrelated set of program elements. The ICM implementation in the BBR was guided by the SEMP which served as the framework for replication in the BBR. Although the priority issues are not identical between the two sites and the replication differs in specific intent and target population, BBR would do well by looking at the experiences of BBR and reflect on how their assets and opportunities are alike or different. Common threads or experiences may become apparent. The SEMP is used to maximize situational strengths, minimize weaknesses and take advantage of available opportunities. It is also crucial that there be a central entity pushing and guiding expansion.

Replication challenge requires the development of a wide range of strategic partnerships throughout the process. The World Wide Fund for Nature - Philippines or WWF (*Kabang Kalikasan ng Pilipinas* Foundation, Inc.) initially forged a partnership with the Provincial Government to support the ICM replication in the BBR. WWF believes that the mechanism developed for ICM in the BBR has been effective and therefore must be supported and expanded.

#### UNDERSTANDING THE VALUE OF ENVIRONMENTAL MANAGEMENT

As ICM continues to be carried out in Batangas, various sectors slowly understood the value of the environment and joined in the effort. POs and volunteers, on their own undertook projects while other groups manifested their desire to work with local governments. A good example of these groups include the Boy Scouts (representing the youth), the Rotary Club International (a civic organization), and the scuba divers who have sponsored coastal cleanup activities in both Batangas and Balayan Bay areas.

**Figure 10. Map of Balayan Bay.**



*Two major documents produced by stakeholders of BBR which will guide them in implementing ICM.*

Even the small and medium enterprises (SMEs) and micro industries have expressed interest to be partners of ICM by following the model set by BCRMF. SMEs represent the backbone of the Batangas economy because of their number and contribution to the gross domestic product of the province.

POs assist enforcement by pinpointing impacted sites and reporting pollutive activities. For example, the 3-9 September 2004 issue of *Balikas* reported an incident where the *Samahan ng Maliliit na Mangingisda*, a fishers' organization in Barangay Gulod, Calatagan Town, reported illegal dumping of untreated wastes in their area to the LGU. This led to an investigation which identified the culprit to be a garbage hauling and transfer company operating in Manila, which brought the wastes from a waste treatment plant in Manila.

#### SUMMARY OF LESSONS

This chapter's discussions highlight a number of useful lessons in the implementation of an ICM program:

1. It is important to have an office with people who will continue the programs beyond the project life and even without donor project support and funding. Likewise, it is vital that an organizational culture be nurtured that will facilitate the shift of project responsibilities to the local administrator and staff and other key focal points at an early juncture so that there is sufficient time for them to learn the job and to obtain follow-up support under the auspices of the project;
2. The extent of success of an ICM program is contingent on how people respond to ICM initiatives. Planning, implementation and leadership must be inclusive of the response of the people. This underscores the need to educate the public adequately to improve their levels of awareness, perception and attitude towards environmental efforts. Parallel IEC activities, in addition to more serious community organizing activities, are needed to catalyze the immediate development of an informed socioeconomic base of coastal communities;
3. The integration of the water-use zonation scheme into the comprehensive use plans, requires effective coordination with the stakeholders and institutions. Educating them on the benefits of integration can help hasten the process. Providing guidance is also necessary. Pilot testing the process in



*Mobilizing stakeholders to play an active role in coastal and marine management makes them co-owners and partners in management projects.*

a municipality would provide other municipalities insights on how to integrate or harmonize land and sea-use plans;

4. There is a need for education and continued exposure on environmental issues and concerns for local leaders. Readiness to accept and use ICM as a management strategy for sustainable development will then follow. Likewise, positive socioeconomic and political benefits as a result of sustaining natural resource bases can facilitate communication with politicians whose agenda are usually driven by the economic interests of their constituencies. It is also important that agencies of public administration should be made responsible for seeing that environmental considerations play a prominent part in planning, development and implementation of programs;
5. It is important to mobilize the community in enforcement and consequently make them co-owners and partners of coastal management projects. As the mechanism for enforcement expands and stabilizes, the opportunity can be extended to combine enforcement/regulations with financing schemes through market-based instruments;
6. IEC can be used to help people become aware of the consequences of their actions, take ownership of planned interventions and assume responsibility for living within

the bounds of natural resource use and development constraints. Aside from creating awareness, it is crucial that IEC materials and strategies be used primarily to help ensure the mobilization of resources available from various sectors — LGUs, national government agencies, and NGOs that have planned programs and projects supportive of the SEMP. Only when environment-friendly behaviors and practices are widespread throughout the community can resource use and management be sustainable. IEC should be focused on building a constituency for ICM, a critical mass of the population who are environment-literate, imbued with environmental ethics, shared responsibilities and shared actions; and

7. A successful program does not automatically contain the seeds of its own replication. Instead, programs that are replicated have extensive evaluations that provide clear information on the internal processes of the program as well as clear evidences that the demonstration project achieved the desired objectives in its original site. Likewise, a replicable program should have an identifiable and coherent set of interrelated program elements. Common threads or experiences may become apparent and the SEMP is used to maximize situational strengths, minimize weaknesses and take advantage of available opportunities. It is also crucial that there is a central entity pushing and guiding expansion.



## The Story Continues





## 5 The Story Continues

This section describes the performance of the ICM program in Batangas in terms of major performance indicators that capture the impact of efforts and resources and the refinements needed to enhance ICM in the area. Emphasis is given on the enabling role of the ICM framework in supporting the possibilities and requirements for new programs, replication and scaling up. The last part highlights the sharing of lessons and capacity building for long-term sustainability.

### MEASURING PROGRAM PERFORMANCE

A set of indicators was developed in order to evaluate whether the results of the BBDP project met its objectives. The development of applicable indicators underwent a process of consultation with major stakeholder groups in Batangas comprising of implementers, beneficiaries and industries. Through small group discussions, the indicators were analyzed in terms of their applicability in the Batangas' setting and the availability of concrete documents and information to support and confirm the indicators. Validation was carried out in a large group gathering of stakeholders and project participants.

Three groups of major indicators were used to assess performance: process indicators, which measure the effectiveness and the sustainability of a selected set of actions; stress indicators, which measure the degree to which program activities have contributed to changes in the sectoral

activities or reducing the human behaviors that are known to contribute to the degradation of the coastal ecosystem and resources; and status/impact indicators, which measure changes in the state of environment and socioeconomic characteristics. Changes in the environment, socioeconomic characteristics and governance which are attributable to programme implementation can represent the impact of programme activities.

### *Process Indicators*

Performance was analyzed using process indicators consisting of: 1) program formulation and implementation; and 2) program sustainability and replicability.

In terms of program formulation and implementation, BBDP has successfully established a PMO and convened a core group composed of representatives from LGUs, national government agencies and the private sector who sat together to set the direction for the initiation and implementation of the project and to draw out the SEMP. Consensus building among stakeholders on ICM implementation was adequately done through intensive consultations to solicit views and support from different sectors on ICM implementation. Capacity-building activities were conducted for a core group of local officials and stakeholders to make them knowledgeable on ICM program development and management.

With regards to initiation of ICM activities, BBDP was able to organize data and use scientific data and information related to specific management issues. A good example is the CEP which was prepared by a multidisciplinary team of experts in order to have a clear knowledge of the socioeconomic, political, and cultural dynamics of the region. The definition of the management boundary was likewise completed. BBDP delineated both landward and seaward management boundaries in recognition of its importance in determining the geographical scope covered by the action plans. Significant progress has been made in creating public awareness, given the development of a comprehensive communication plan that maximizes the use of multimedia tools. "Cleanest Village" contests and regular coastal cleanups are attempts to create awareness among communities. The development of an area-specific plan was completed by the BBDP with the formulation of the SEMP through intensive consultation, validation with key stakeholders, and approval by the BBREPC, before it was disseminated to the public.

In terms of ICM program development, protocols for project monitoring, evaluation and reporting were developed by the project. Internal monitoring is facilitated by quarterly and annual reports. In addition to regular reporting exercises, external monitoring and evaluation were conducted at the middle and end of the project.

In terms of sustainability, there was significant progress in initial efforts to institutionalize ICM implementation. The PG-ENRO expanded from a skeletal staff to a division composed of several units addressing issue-specific environmental concerns. Its annual budget likewise increased from PHP 3,651,896 in 1996 to PHP 11,700,522 in 2003. Aside from

financial support from the Provincial Government and the GEF, additional sources of financing for ICM program implementation were identified. A Provincial Solid Waste Management Board was established with an annual fund appropriation of PHP 500,000. The development of a joint environmental monitoring program addressing priority environmental risks showed significant progress while the establishment of an information management system has been initiated.

The establishment of the BBREPC, which has been functional as a venue of multistakeholder partnerships in resolving issues and implementing appropriate actions is an indication of sustainability. The BBREPC receives an annual budget of PHP 500,000.

Legislation for strengthening existing regulations for ICM has been initiated through the passage of Provincial Ordinance No. 7 Series of 2002 creating a Provincial Solid Waste Management Board to provide the legal environment for the implementation of RA 9003 (Solid Waste Management Act) in the province. Likewise, a law enforcement mechanism is being continuously strengthened in a sectoral/integrated manner. The PG-ENRO coordinates with the PCG and the PNP Maritime Police in coastal environment monitoring and law enforcement and for legal and technical support. Residents and people's organizations such as the *Bantay-Dagat* are also involved in enforcement.

Efforts were exerted in generating a sustainable financing mechanism to support ICM activities. The legislative bodies of the different LGUs in the region passed ordinances that provide for environmental fees such as the diver's fee and garbage fees. Significantly, the different LGUs and other government offices initiated measures to integrate ICM into their respective development



programs. MENROs were established in some municipalities while other municipalities which could not immediately establish their own MENRO strengthened their respective Municipal Planning and Development Offices. Mechanisms for knowledge generation, sharing and extension were established through continuous capacity-building programs. From May 1996 to December 2002, for instance, the PG-ENRO conducted a total of 22 training events that involved more than 300 multisectoral participants, some of which included visitors from other East Asian countries.

With regards to local governance, the vision and perception of local leaders and stakeholders on sustainable development has been strengthened as shown in the increased support in the financial, logistical and legal aspects of ICM implementation. Local elections in the Philippines are held every three years, however, changes in political administration in the province did not adversely affect ICM implementation. The public participation mechanism was likewise strengthened through the BBREPC, which facilitates public consultations to enable stakeholders to be more involved with the program. The PG-ENRO maintains a website and a library for a continuous flow of information among the different sectors. With the close coordination among the different law enforcement units and the private sector, increased vigilance on coastal protection among different sectors has been maintained. The PCG and the PNP Maritime Police apprehend and bring to court violators of environmental laws while the PG-ENRO provides the technical support to prove violations. For improved efficiency, the administrative processes involved in the resolution of environmental cases have been simplified and the number of days for decisionmaking reduced to 15 days.

The program has been replicated in Balayan Bay. Replication in Tayabas Bay is underway. In

addition, ICM parallel sites such as Bataan and Cavite learned from the experience of Batangas in adopting and implementing the ICM framework. Some local governments in the country like that of Southern Samar is being assisted by Batangas in developing its ICM program.

### ***Stress Indicators***

Results for environmental indicators showed that two parameters, dissolved oxygen and nitrates, which were used to represent key pollutants in the bay did not significantly change from 1997–2004.

A study on “Waste Identification and Characterization on the Coastal Barangays of Batangas City” conducted by the Lyceum International Maritime Academy, showed that except during summer when tourists abound, solid wastes in beaches have relatively lessened. A random survey of respondents also confirmed that solid wastes in beaches are decreasing. People perceived the presence of solid waste in the beach to be significantly high before the ICM program development, moderately high three years after and relatively lesser five to ten years after the ICM program development. This may be attributed to a number of factors such as an increase in the level of environmental consciousness among the people, strict enforcement of environmental laws and local ordinances, coastal tourism programs, and the conduct of different environmental activities such as the periodic coastal cleanup and waste management measures as described in Box 9.

With the implementation of the ICM program in the province by the concerned stakeholders the use of illegal fishing methods has been contained; intrusion of commercial fishing boats (outsiders) minimized if not controlled; and the

**Box 8. Batangas City Waste Redemption Center.**

As part of Batangas City's Clean and Green Project, a zero-waste management campaign was launched in 1995. An offshoot of this campaign was the selection of some villages to serve as pilot sites for the practice of waste segregation, reuse and recycling. Satellite waste redemption centers are located in strategic sites where households can sell their sorted wastes. A mother redemption center was established in the compound of the City Veterinarian's Office to serve as the collection site for all wastes from the satellite centers and from other sources.

The City Government initially set aside a seed fund of PHP 5,000 to operate the waste redemption centers. Wastes purchased and collected include bottles, cans, paper/cardboard, metals, Styrofoam and plastics. These are either delivered to or picked up by big junkshop operators and waste buyers from Manila. The mother redemption center is self-liquidating and its budget has grown to millions of pesos.

The operations of the redemption centers is headed by the city veterinarians and assisted by three regular staff and laborers. The center also engages in composting towards the production of organic fertilizers. Fertilizer trials have been conducted in coordination with the City Agriculture Office to establish the technical and economic feasibility of using these organic fertilizers.

use of commercial fishing boats which are more than 3 G.T. was also minimized. The nearshore water — which is the most productive ecosystem but is the most degraded in terms of fish habitat and the most overfished in terms of fish stock — is being rehabilitated and protected through the establishment of an artificial reef project in Batangas Bay (Batangas City), Balayan Bay (Balayan and Calaca) and marine protected areas like the fish sanctuary in Batangas City, Mabini, Tingloy and a Marine Reserve in Calatagan.

***Status/Impact Indicators***

Analysis of performance using socioeconomic indicators showed that populations which increase at an average rate of 2.3 percent exert significant pressure. The average annual household income in the region increased by an average of 29 percent after the introduction of the ICM program. The increase in income may be attributed to more benefits from environmental goods and the introduction of more employment opportunities

as a result of the continuous development of the BBR and the changes in the value of the Philippine Peso. As to what extent ICM contributed in this change needs to be further studied.

The efforts of the program have resulted in the simultaneous generation of a number of potential employment opportunities in addition to successfully identifying alternative livelihood schemes. Activities based on waste management revealed significant opportunities for entrepreneurship on the part of local residents. A waste redemption center was established in Batangas City and home associations practice sorting, recycling and reuse. Local residents are able to supplement their income from the decorative and household products they generate out of wastes. Likewise, the junkshop operators pooled themselves and formed an environmental cooperative which is called the Batangas Bay Region Environmental Cooperative. This is the first of its kind in Batangas and is the operators'

way of strengthening themselves towards a more profitable business with solid wastes.

It was recognized that there was a change in the level of awareness as a result of BBDP's intensive public information-education programs as well as the gradual shift of commitment of key stakeholders. The participatory nature of ICM has helped change the public's level of awareness since they became major players in the program instead of simply serving as recipients. There was a marked improvement in capacity as more local personnel received training and education on the scientific/technical components of the program.

The change in perception of municipal leaders in the BBR have rippling effects on the neighboring municipalities particularly those around Balayan Bay. Towards the end of the ICM project, the spectrum of participants expanded from the core group of selected LGUs and industries to other NGOs, POs, civic organizations, the academe and the youth. Enforcement of coastal environment policies and regulations likewise improved after the introduction of the ICM program. This may be attributed to joint efforts to solve multiple-use conflicts through teamwork and through improved legislation, coordination and the adoption of a zonation scheme, albeit on a selective scale. The establishment of the PG-ENRO and the BBREPC helped develop interagency and cross-sectoral partnerships and coordinating mechanisms.

Perception changes among politicians and the private sector are reflected in the establishment of the PG-ENRO and the BBREPC as well as citizens environment advocacy groups like *Bantay-Dagat* and the Batangas Bay Watch. In the industry sector, the model shown by the BCRMF has encouraged other industries to support projects such as mangrove rehabilitation and seeding of giant clams. The Batangas Chamber of

Commerce and Industry has also expressed intention to follow the lead set by the BCRMF to involve the small and micro enterprises in ICM activities. Perception and attitude changes are also evident in the academic community. Whereas before, research and extension activities of schools focused more on the arts, technology and business, participation in the ICM has widened the schools' research and extension thrusts to include environmental concerns

In addition, economic and social activities intensified. There was a 29 percent average increase in the number of establishments from 1998 to 2002. Navigational traffic also shows an uphill trend as shown in shipcalls (12 percent), cargo traffic (20 percent), and passenger traffic (47 percent). There are 27 companies and 68 vessels providing passenger and cargo services in the BBR. Furthermore, tourism activities, especially water-based activities, intensified given increases in local and foreign tourists from 46,414 in 1995 to 124,036 in 2002.

There was an increased consciousness on corporate responsibility among the different industries in the region not only in the area of human resource development but in community affairs as well, including environmental concerns. The different industries along the bay have initiated efforts to increase investment in environmental facilities and services. For example, Pilipinas Shell Petroleum Corporation, First Gas Power Corporation, JG Summit Petrochem Corporation, United Coconut Chemicals, Petron Corporation, Caltex (Phil) Refineries, and First Philippine Industrial Corporation all worked for ISO 14000 certification.

Observable changes, in terms of environmental indicators, proved minimal. The integrated environmental monitoring will play a major role in tracking the changes in the environment. For

biological resources, an assessment study should be conducted to assess the changes.

#### GARNERING RECOGNITION

The impressive institutionalization of ICM in the BBR has been recognized by other institutions and has encouraged the use of the framework to carry out their own programs. A good example is the inclusion of Batangas among the pilot sites of the Urban Waste Expertise Programme (UWEP), a six-year research and pilot project on urban waste, funded by the Government of Netherlands and is being implemented in Asia, Africa and Latin America. The project aims to generate increased employment and income in small and micro enterprises and to improve the living environment of low-income communities. UWEP's pilot project focused on several activities under the short-term options provided in the IWMAP (Palmares, 1999).

Likewise, the replication of ICM in Balayan and Tayabas bays is solid proof that the Provincial Government recognizes the workability of the ICM framework in attaining its own mandate and expresses its confidence in PG-ENRO's ability to push, guide and carry out the project given the lessons learned from the BBDP.

The SEMP provides a base for the possibility of a much more dispersed and deeper diffusion of the ICM model. The Pansipit River Rehabilitation Program was led by PG-ENRO in coordination with concerned LGUs, NGOs, the Integrated Fisheries and Aquatic Resources Management Council, and relevant provincial departments, taking the SEMP as the basis. The program completed the clearing of Pansipit River, provided livelihood assistance, conducted an IEC campaign and monitored water quality. The project was recognized as one of the ten most outstanding LGU programs in the Philippines by the Galing Pook Foundation in December 2003. Batangas also won second runner-up honors in the regional category of the *Gawad Pangulo Para sa Kapaligiran* (President's Award for the Environment) in the same year in view of the ICM initiatives taken in the province.

It is important that the performance of the ICM project be widely held up as an example of significant and positive effects. Providing convincing evidences is more vital than identifying modalities for the way policies and procedures could be implemented. Lessons learned should be reused so that other locations can move forward more quickly and emerging opportunities and prospects can be identified and integrated in the framework.

#### **Box 9. Activities of UWEP in the BBR.**

- Inventory and mobilization of local initiatives by communities and SMEs
- Development of an integrated sustainable waste management system
- Assessment of training needs
- Education and awareness campaign
- Business opportunities
- Pilot project implementation

## PROGRAM REFINEMENTS

Over the ten-year period of ICM implementation in Batangas, major achievements in institutional arrangements, management tools and techniques, multisectoral environmental monitoring, PPP, scientific information services and capacity building have been reported. However, the refinement of project strategies is still deemed necessary and appropriate by the institutional mechanisms that were put in place in order to sustain and expand the achievements gained. New issues arise and the relatively shorter timeframe did not allow the project to address all the critical issues facing the BBR. These created some gaps particularly in the changing policies at both the national and the local levels. These apparent gaps need to be overcome and refinements that would ultimately lead to the widespread adoption of the ICM model should be introduced.

Refinements generally emphasize on institutional strengthening necessary for replication and scaling-up and these include the following:

1. The BBREPC must be strengthened by expanding its membership to other sectors, such as the academe and other NGOs/POs and local communities, to promote multistakeholder participation and to combine the expertise and inputs from these groups. Likewise, the mandate, power and scope of activities of the Council need to be expanded to allow it to respond fully to the environmental issues not only in the BBR but in the whole province as well.
2. The SEMP must be updated regularly to reflect emerging environmental issues, concerns and new challenges.
3. Local environmental management units or MENROs must be created in all municipalities in cognizance of the different devolved environmental functions of the LGUs.
4. Sustainable financing mechanism and the application of the PPP approach must be strongly pursued, culminating in the establishment of a waste facility. The use of market-based instruments to sustain the funding of environmental projects must be explored in combination with traditional approaches, including the creation of a policy climate conducive to environmental investment opportunities.
5. Local stakeholder participation in EIA should be enhanced subject to creation of MENROs. With functional local environment and natural resource offices, the LGUs could have greater engagement in the existing EIA process to make sure that both private and public development projects proposed are consistent with the SEMP and other pertinent ordinances related to the water use zonation scheme. With the MOA executed by DENR and the PG-ENRO as a starting point, LGUs will have full involvement in the scoping, consultation and review process for EIA applications inside the boundaries of the BBR.
6. Capability building and the development of a core of local experts from the various sectors in the BBR should be a continuing activity and is very critical to ensure sustainability of activities. Improved capability within each LGU should complement the creation of the local environment and natural resources office to render them truly effective.
7. The Integrated Information Management Systems (IIMS) must be sustained to

support planning, management and decisionmaking. The IIMS stores information on biological aspects, socioeconomic characteristics, physiography, institutions and environmental quality.

It is important to recognize that the ICM framework continues to evolve as better ways are sought to maximize the potential benefits from the model in various settings and contexts.

#### NEW PROGRAMS

A new project called the Batangas Coastal Management and Biodiversity Conservation Project was proposed in recognition of continued interests in identifying a follow-up on the coastal and marine biodiversity conservation project. The proposed project will have three components under consideration: ICM; coastal, marine and freshwater biodiversity conservation; and private sector engagement in solid waste management that would include renewable energy production. The project would be funded by GEF and implemented by the Provincial Government of Batangas.

It is worth noting that the development of new projects becomes relatively easier and faster in Batangas because the SEMP has already provided a blueprint for possible replication, scaling-up and the creation of new projects. Likewise, the BBDP did not operate in an institutional vacuum. The institutional mechanism established facilitated the creation of a road map to integrate transfer of knowledge and best practices into the improvement methodologies of new programs. The versatility of the SEMP allows the application of the ICM framework in a variety of settings, with the core elements spanning various settings

and contexts but ensuring that application will take root and grow.

#### RUBIK'S CUBE AND SUSTAINABLE DEVELOPMENT

The main purpose of ICM is to allow multisectoral development to progress with the fewest unintended setbacks and the least possible imposition of long-term social costs. In this sense, ICM can be seen as a system with three mutually supporting dimensions, graphically represented as a cube.

The dimensions of the cube are management process, identified management issues, and management actions. Management process includes planning, implementation, and monitoring and evaluation. Management issues include pollution, overfishing and multiple-use conflicts. Management actions include institutional and organizational arrangements, incentives/regulations to change behavior, and direct public involvement/investment (Chua, 1996).

The cube is actually made up of a number of blocks fitted together. The base of the cube is formed by the planning blocks, which have both management issue and management action dimensions. The next layer of the management system cube is formed by the implementation blocks, and the final layer by the monitoring and evaluation blocks, both of which also have management issue and action dimensions. All three dimensions of the management system are essential. If any of the dimensions are ignored, the system will eventually collapse or be rendered ineffective.

The Rubik's Cube framework, as applied in the BBDP, indicates a high success rate in

implementation. Introduction of the ICM program in the Batangas Bay Region has resulted in coordinated efforts in protecting the environment, sustainable use of resources, minimization of resource-use conflicts, and an improved quality of life.

#### SHARING LESSONS AND BUILDING CAPACITY

BBDP offers valuable and practical lessons on ICM program implementation. The project is young but there are emerging lessons from its systematic and effective preparation, implementation and evaluation of activities. Many practical insights direct attention to important issues involved in multisectoral cooperation and partnerships. Richness of details will be available from more long-term processes.

#### *ICM Concept*

The concept of ICM is new and there are no proven practices that can be applied or replicated. ICM was introduced in Batangas as a demonstration in the hope that the Batangas experience can be shared with rapidly growing regions. The approach was initiated through the efforts of international organizations such as the GEF, UNDP and IMO, with the local project officials of Batangas not yet conceptually prepared and technically capable in developing and executing ICM, thus, there is a learning curve. Recognizing this, MPP-EAS provided support staff to the Provincial Government. An integration model was adopted where the support staff worked directly with the PG-ENRO from the start of project such that the expertise of the former is gradually and effectively transferred to the local project officials, ensuring sustainability of activities even after the project's life.

The learning-based approach also requires that the principles, processes and strategies of ICM are fully understood not only by those who initiate and implement them, but also by the stakeholders whose participation is the key to coastal management. In Batangas, both the public and private sectors were involved right from the beginning of the BBDP and are fully represented in the BBREPC.

The desired impacts from ICM initiatives do not come immediately. Realization of expected results depends upon the geographical scope of the initiative, severity of environmental issues, complexity of management issues and the institutional and financial capacity of the local government. It is important that the required timeframe for ICM be discussed and understood by all concerned stakeholders so as to avoid unrealistic expectations.

#### *Project Timeframe*

BBDP has a five-year timeframe, which is obviously insufficient for the implementation of an extensive ICM program. Since scientific information was inadequate during the project's introduction, much time was consumed on undertaking relevant technical studies. To avoid the loss of confidence and commitment of decisionmakers and stakeholders from failure to implement proposed action plans, efforts were made to implement at least some of the SEMP components, particularly the institutional mechanisms required. The second year of the project coincided with a change in the political administration of the province. Fortunately, however, the new administration gave its support and commitment in pursuing the program. A second cycle gave Batangas the chance to put into realization all the components of the SEMP and to replicate the ICM framework in the BBR.

### *Performance Monitoring*

Performance monitoring protocols should be installed right at the beginning of the project in order to gauge the progress of the program and to determine the areas for successes and failures. In Batangas, emphasis was given on the development of a set of indicators tailored for an objective comparison of the project results with stated goals. The development of applicable indicators underwent a process of consultation with major stakeholder groups in Batangas comprising of implementers and beneficiaries. Through small group discussions, the indicators were analyzed in terms of their applicability in the Batangas setting and the availability of concrete documents and information to support and confirm the indicators. Validation was carried out in a large group gathering of stakeholders and project participants. Six groups of major indicators — state, pressure, process, response, sustainability and impact indicators — were used to assess the performance of the project.

An assessment of BBDP's performance showed that the project was able to satisfy to some extent, the requirements of three major performance indicators. The socioeconomic benefits of ICM in Batangas are not yet very obvious but it is recognized that significant opportunities exist in terms of business and livelihood activities.

### *Project Design*

The design of the BBDP highlighted a strong foundation with clear requirements for institutional arrangements and planning processes. The activities were rationalized in such a way that they were interrelated and interconnected towards the attainment of project objectives. Milestones were identified for each activity and indicators of success were set.

BBDP was designed to ensure that its timeframe fell within the terms of the local government, hence allowing sufficient time to make the necessary institutional arrangements. The establishment of the BBREPC and the PG-ENRO ensured that commitment to implement agreed project activities were met despite a change in political administration.

### *Selection and Prioritization of Management Issues*

An effective ICM program should be built around existing issues and problems which are identified through a participatory process. The SEMP for Batangas identified complex environmental problems and management issues. The wide range of management issues and the potential impacts they pose on the environment and people against the existing limited resources and institutional capacities of local governments underscored the need to set meaningful priority issues which the LGUs can tackle in the short and long term. Issues in Batangas were therefore categorized into three: critical priority, high priority, and low priority. In general, the issues or factors with a critical priority ranking were those in which perceived significance is high and which could be dealt with at relatively low cost. Issues with high-priority ranking were those perceived to be significant, but would normally imply a relatively high cost of mitigation. Low-priority ranking is assigned to those issues or factors with the lowest perceived significance and with relatively higher remedial cost. This allowed the project management to focus on solvable issues that were of most immediate concern. Specific efforts were focused on putting up the much needed institutional mechanism because of its strong implications to sustainability. BBDP



avoided tackling too many issues at the same time in recognition of the fact that many of the issues inherent in the political, cultural or socioeconomic systems usually take much longer time to resolve. The precautionary approach to development was adopted. This means that development should not proceed if there is insufficient information on the possible social, economic and environmental effects. This will prevent or minimize use conflicts, adverse impacts and irreversible loss of future development options.

### **Management Boundary**

BBDP delineated both landward and seaward management boundaries in recognition of their importance in determining the geographical scope covered by the action plans. The establishment of the management boundary appeared more of a planning requirement rather than for actual application since the scope of activities is still confined to planning. While it is necessary to provide wider geographical scope covering the watershed and the exclusive economic zone, it is more practical to determine a management area that is manageable. With the ICM framework in place and experience at hand, the project will be better equipped to extend the scope of management over the entire watershed.

### **Research and Studies**

The project should use the best available information to address urgent management issues. Research studies should be clearly linked with information requirements of the SEMP, action plans and other management activities. Efforts were made to link science

with decisionmaking in the BBDP through the following mechanisms and processes:

1. Promoting a common understanding of management problems through a teamwork approach in completing environmental profiles, strategic management plans, functional zoning, etc.;
2. Upgrading technical capacities of environmental management agencies such as the PG-ENRO and their counterparts in the different LGUs;
3. Establishing legal requirements for public consultation and scientific input, especially EIA;
4. Enhancing scientific understanding of the general public, local communities, NGOs and representatives in the legislative organs;
5. Maximizing the application of scientific results through stakeholder participation in the review and adoption of major coastal projects; and
6. Making information available to and usable by managers.

The timeframe for the preparation of the CEP and the SEMP for Batangas was confined to less than two years to give time for their implementation. This was made possible through the assistance of experienced coastal management experts. To maximize inputs from the natural and social sciences, problem-oriented research was encouraged for providing the information required for management actions.

### **ICM Program Development and Implementation Cycle**

ICM is a dynamic and flexible process, but in order to achieve a sustainable ICM program, actions generally must occur following a

fundamental cycle. The ICM program development and implementation cycle in Batangas took five years, with the cycle covering the six processes of preparing, initiating, developing, adopting, implementing, and refining and consolidating a program of actions. Preparatory activities included: 1) the installation of a project management mechanism; 2) preparation of work plans and budget; 3) consultation with stakeholders; and 4) training of project staff. Sequencing of activities is important. Many of the early actions which consolidate stakeholder support and trust begin during the preparatory phase before the actual project is implemented. Sufficient time and energy needs to be dedicated to this work.

Initiating the program required the preparation of an environmental profile in order to have a clear knowledge of the socioeconomic, political, economic and cultural dynamics of the region. Through environmental profiling and consultation with stakeholders, the different environmental and management concerns were identified and prioritized. An initial public awareness campaign was also launched in collaboration with the private sector. The SEMP was developed to address the risks and issues given priority in the initiation stage. This provided the general framework and long-term action program within which more detailed issue-specific and area-specific action plans were developed. Data gathering was limited to those that were needed for management interventions directed at risk management. Surveys and technical studies were likewise conducted as special activities such as the willingness-to-pay survey using the contingent valuation method, which was conducted as input to the establishment of sustainable financing mechanisms.

The institutional mechanism in the form of the BBREPC, with the PG-ENRO as its designated technical secretariat was adopted. Program implementation initially started with the BBREPC at work and the PG-ENRO already operational. The efforts focused on the activities recommended by the SEMP. The short timeframe required that only selected actions be implemented to gain confidence among stakeholders. The implementation of the IWMAP was one of these priority actions. A joint environmental monitoring program was also developed, supported by the establishment of an analytical laboratory. The participation of stakeholders was enjoined in this activity through the formation of partnerships in water quality monitoring.

Upon completion of one cycle, a new cycle starts by using past experiences, accomplishments and lessons learned as the basis. A successful program may then broaden its objectives and scope of issues for the new cycle. A lengthy and sustained process is necessary to achieve coastal management success through an integrated management framework.

#### **Local Government Commitment**

The Provincial Government, through the PG-ENRO, took the lead and directly executed the activities and actions required in the SEMP. Direct involvement of the LGUs had its setback in terms of technical know-how and experience but the difficulties encountered in the execution of activities due to a lack of adequate technical preparations of the local staff were addressed through intensive capacity-building programs. Experience shows that ICM programs developed through local government participation are implemented more readily, despite weakness

in capacity, than programs prepared by outside experts.

It is important that the institution arrange for a sustainable source of funding to continue its work. When the project ends, the LGU will have embraced the new management paradigm and adopted its policies and recommendations, developed staff expertise and provided the necessary funding and manpower resources to carry on. Likewise, the LGU's existing procedure, policy and decisionmaking must be assessed and must allow integration of ICM initiatives into existing government programs. LGU commitment to project management and implementation are indispensable for project success.

#### *Institutional Arrangement*

Developing institutional mechanisms which facilitate integration and coordination of the ICM program is highly necessary. Integration brings about the harmonization of policies and legislation between national, regional, provincial and local governments; closer management linkages between resource systems; and better functional coordination among concerned resources and governance and management agencies. Coordination, on the other hand, plays a central role in fostering understanding and cooperation among stakeholders, line agencies, researchers, policymakers and resource managers.

The need for an appropriate institutional arrangement has been recognized by the project given that Batangas Bay transcends political boundaries. The BBREPC was established to serve as an interagency and multisectoral coordinating body. The PG-ENRO was likewise created to oversee

environmental concerns in the province. Later, the different cities and municipalities started establishing their respective environment and natural resources offices. Efforts were also initiated by the province to strengthen and institutionalize the administration of EIA which is legally a mandate of the DENR. A MOU was signed in 1999 between the Provincial Government and the DENR to enable the devolution of functions related to EIA.

#### *Private Sector Participation*

An important aspect of the institutionalization of the ICM at the local level is the development of partnerships between the public and private sectors. PPP is an alternative to the traditional approach that places the government solely responsible for environmental management. Its purpose is to break away from the situation where the private sector waits for the public sector to develop a service or to enforce a regulation. The partnership is built on the foundation of mutual benefit. The public sector gains access to required technical and business skills, while the private sector benefits from involvement in defining a long-term management program.

Three lessons learned about ways to build partnerships with the private sector stand out:

1. Projects need to create a forum to bring the private sector into the management structure. The BBREPC provided an important forum for dialogue between and among levels of government, government agencies and private industry on the need for and utilization of monitoring information.
2. The private sector needs a range of incentives and enabling conditions to

participate actively. Their involvement in the BBREPC gave the private sector an active stake in finding solutions to environmental problems and, at the same time, allowed them to influence the long term, rather than to leave it to the regulatory system to set compliance schedules and goals.

3. The private sector needs a vehicle through which to channel its participation in project management structures. The BCRMF gave the private sector the opportunity to become involved in the project as a group. Government prefers to work with an association of private industries rather than with individual businesses. This reduced the speculations that a single company may be receiving special treatment. It provided a means for the broader concerns of the private sector to be expressed and for the private sector's position to gain legitimacy.

Experience in Batangas has demonstrated that the private sector found its direction, role and functions within a well-defined ICM framework and waste management program. ICM practices facilitate balanced multiple resource uses, the healthy functioning of market mechanisms and the sustainability of the resource base. These are compatible with the long-term interests of the private sector and thus provide incentives for PPP.

### *Public Awareness*

Implementing an ICM program requires a process through which information is imparted to the public and to all stakeholders to increase their awareness, understanding and

appreciation of ICM activities and their relevance. To develop broad support for ICM, all public awareness activities for ICM were rationalized and packaged in a comprehensive communication plan. Active media support was harnessed to create awareness especially at the community level. Aside from awareness-raising and educating the public, IEC materials and strategies must be used primarily to help in the mobilization of available resources from various sectors which have planned programs and projects supportive of the SEMP. IEC should be focused on building a constituency for ICM, a critical mass of the population who are environment-literate and imbued with environmental ethics, shared responsibilities and shared actions.

### *Building Local Capacity*

A major constraint in ICM programs is the lack of technical and management capacities, especially at the local level. ICM requires coastal managers with broad-based environmental management training to lead and coordinate program development and implementation. However, coastal managers with interpersonal skills to coordinate interagency activities, to mobilize human and financial resources, and to direct management-oriented research and information development are not readily available. Unless such capability is established, ICM program formulation and implementation will be difficult.

Capacity building was thus integrated into all components of the ICM programme. The Regional Programme implemented both formal and specialized short-term training programs to develop the capabilities of the major players. The formal training programs included



*ICM trainees and delegates of study tours visiting Batangas.*



internships, short-term technical training, in-service training, staff exchange and study tours. On the other hand, specialized short-term training courses included application of ICM for marine pollution and prevention; oil pollution preparedness, response and cooperation; and integrated environmental impact assessment.

In Batangas, emphasis was given to building local institutional capacity to plan and manage their own resources. Representatives from various sectors were thus sent to various national and international capacity-building programs. Mayors of four coastal municipalities within the BBR were sent, for instance, on a study tour of Xiamen, China, to get a feel of the coastal management initiatives in the site and to have better appreciation of the BBDP. Experts from local institutions were likewise tapped to provide the BBDP with technical training and guidance. An ICM training center is being developed in Batangas

to provide the venue for the sharing of experiences and best practices.

It is recognized that in addition to capacity-building activities, demonstration projects also build local expertise and networking through direct and active involvement in activities and disseminating information during workshops, conferences and through publications and reports. Lessons point to the fact that project activities may be rendered irrelevant unless there are initiatives which enhance local capacity to sustain ICM activities after the end of the project. An integrated strategy to incorporate capacity-building, therefore, is a vital part of the process for achieving a sustainable ICM program. A commitment to methodically build human and institutional capacity for coastal management is required. This may be reflected by a higher level of effort required for training and transferring technical skills early in the project, and longer project timeframes.



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