Course

Understanding Integrated Coastal Management

1

Model Course on ICM

INSTRUCTOR'S MANUAL

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Course 1

Understanding Integrated Coastal Management

Model Course on ICM

INSTRUCTOR'S MANUAL

Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)

Course 1:
Understanding Integrated Coastal Management (ICM) — Model Course on ICM.

Instructor's Manual

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List of Abbreviations and Acronyms

ADB	-	Asian Development Bank
AV	-	audiovisual
BAPEDALDA	-	Provincial Environmental Impact Management Agency of Bali
BBDP	-	Batangas Bay Demonstration Project
BBMC	-	Batangas Bay Municipal Council
BBREPC	-	Batangas Bay Region Environmental Protection Council
BCCF	-	Bataan Coastal Care Foundation
BBCRF	-	Batangas Bay Coastal Resources Foundation
BCRMF	-	Batangas Coastal Resources Management Foundation
BLH	-	Environmental Agency of Bali Province
BNP	-	Bataan Natural Park
CALABARZON	-	Cavite, Laguna, Batangas, Rizal, Quezon
CBD	-	Convention on Biological Diversity
CEP	-	Coastal Environment Program
CITES	-	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CRM	-	Coastal Resource Management
CS	-	Coastal Strategy
CSIP	-	Coastal Strategy Implementation Plan
DA-BFAR	-	Department of Agriculture-Bureau of Fisheries and Aquatic Resources
DENR	-	Department of Environment and Natural Resources
DONRE	-	Department of Natural Resources and Environment
DOST	-	Department of Science and Technology
ECC	-	Environmental Compliance Certificate
EIA	-	Environmental Impact Assessment
EMS	-	environmental management system
EO	-	Executive Order
EPA	-	Environmental Protection Agency
ERA	-	environmental risk assessment
FAO	-	Food and Agriculture Organization of the United Nations
FISH	-	Fisheries Improved for Sustainable Harvest Project
GDP	-	gross domestic product
GEF	-	Global Environment Facility
GESAMP	-	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GIS	-	geographic information system
GPA	-	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

ICLARM	-	International Center for Living Aquatic Resources Management
ICM	-	integrated coastal management
ICMS	-	Integrated Coastal Management System
IEC	-	information, education, communication
IEMP	-	Integrated Environmental Monitoring Program
IIMS	-	Integrated Information Management Systems for Coastal and Marine Environment
IMO	-	International Maritime Organization
IOC	-	Intergovernmental Oceanographic Commission
IPCC	-	Intergovernmental Panel on Climate Change
IRA	-	initial risk assessment
ISO	-	International Organization for Standardization
IWA 4	-	International Workshop Agreement 4
IWRM	-	Integrated Water Resource Management
km^2	-	square kilometer
LGU	-	local government unit
m	-	meter
MARINA	-	Maritime Industry Authority
MDG	-	Millennium Development Goals
MEG	-	Marine Experts Group
M & E	-	monitoring and evaluation
MMCC	-	Marine Management and Coordination Committee
MMD	-	Marine Management Division
MMCO	-	Marine Management and Coordination Office
MMO	-	Marine Management Office
MOA	-	Memorandum of Agreement
MPA	-	Marine Protected Area
MPP-EAS	-	Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas
NGO	-	nongovernment organization
NEDA	-	National Economic and Development Authority
NIPAS	-	National Integrated Protected Areas System
NOP	-	National Oceans Policy
PCC	-	Project/Program Coordinating Committee
PCG	-	Philippine Coast Guard
PCSD	-	Philippine Council for Sustainable Development
PDCA	-	plan-do-check-act

PEMSEA	-	Partnerships in Environmental Management for the Seas of East Asia
PG-ENRO	-	Provincial Government Environment and Natural Resources Office
PhP	-	Philippine Peso
PIROP	-	Pacific Islands Regional Oceans Policy
PMO	-	Project/Program Management Office
PPA	-	Philippine Ports Authority
PPP	-	public-private partnership
PR	-	People's Republic
PRF	-	PEMSEA Resource Facility
RMB	-	Renminbi (Chinese currency)
RNLG	-	Regional Network of Local Governments Implementing Integrated Coastal Management
ROK	-	Republic of Korea
RRA	-	refined risk assessment
SDG	-	Sustainable Development Goals
SDCA	-	Framework for the Sustainable Development of Coastal Areas through ICM Implementation
SDS-SEA	-	Sustainable Development Strategy for the Seas of East of Asia
SEMP	-	Strategic Environmental Management Plan
SOC	-	State of the Coasts
t	-	ton
TWG	-	Technical Working Group
UN	-	United Nations
UNCED	-	United Nations Conference on Environment and Development
UNCLOS	-	United Nations Convention on the Law of the Sea
UNDP	-	United Nations Development Programme
UNEP	-	United Nations Environment Programme
UNESCO	-	United Nations Educational, Scientific and Cultural Organization
UNFCCC	-	United Nations Framework Convention on Climate Change
USAID	-	United States Agency for International Development
US$	-	US Dollar
VA	-	Vulnerability assessment
WSSD	-	World Summit on Sustainable Development
WCED	-	World Commission on Environment and Development
WWF-UK	-	World Wildlife Fund/World Wide Fund for Nature
XOFB	-	Xiamen Oceans and Fisheries Bureau

Introduction to the Manual

The declining trend in coastal and marine environmental quality has driven the international agenda for an integrated approach to managing these ecosystems, giving birth to the concept of integrated coastal management (ICM). Today, ICM is widely advocated as a strategy to reverse such environmental degradation and ensure sustainable coastal development. On-the-ground experience has shown that the ICM development and implementation process is advantageous in addressing the policy, economic, scientific, technical, and social challenges to the sustainable development and use of marine and coastal areas and natural resources.

It is increasingly being realized that effective coastal and ocean management is predicated on scaling up ICM. Thus, one of the goals of the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) is for 25 percent of the regional coastline to be placed under an ICM program by 2021. This means that there is an urgent need to increase the number of ICM practitioners and allied experts. To address this need, PEMSEA is promoting national and regional ICM trainings (as one of many strategies that include networking, alliance and twinning arrangements, developing and promoting ICM post-graduate curriculum, and others) with the aim to mobilize trained individuals into supporting ICM efforts at local and national levels.

Guided by many years of on-the-ground ICM experience, as well as by the experience in ICM-related trainings that benefited more than 3,000 individuals, PEMSEA initiated the development of ICM Training Model Courses that are primarily aimed at assisting participating countries in their national ICM scaling up programs through exchange and transfer of knowledge and skills on ICM practices, tools, and methodologies. These courses also underpin PEMSEA's ICM Recognition Program.

The contents of the model course are primarily based on *The Dynamics of Integrated Coastal Management: Practical Applications in the Sustainable Coastal Development in East Asia (2006)*. Participants can refer to this reference for more detailed guidance.

This model course encompasses the whole dimensions of sustainable development. Its content is rooted in a holistic, systems approach, as well as in adaptive learning and ecosystem-based management. The course is designed to illustrate the process of the development and adoption of a long-term vision by concerned stakeholders and the implementation of short-term actions directed toward short-term targets through a stepwise, cyclical, and incremental approach. In sum, the sustainable development of coastal areas entails a programmatic implementation of the ICM cycle, building up a critical mass of expertise within the local governments, securing adequate financing to implement environmental improvement projects, and reforming policies to provide a stable environment for attracting investment in ICM projects and for the operation of coordinated strategic management action programs.

Instructor's Manual

Course Code: **ICM-001**

Course Title: **Understanding Integrated Coastal Management**

Course Description:

This course introduces and discusses the philosophy, concept, guidelines, framework, and processes of ICM for the sustainable development of coastal areas.

The course also provides a guide to a quick assessment of the requirements for developing an Integrated Coastal Management (ICM) program through giving an orientation on the State of the Coasts Reporting tool and the ICM Code of Good Practice. A work planning session will allow participants to identify the next steps in preparing for the development of an ICM program in their respective areas.

Intended participants:

The course is intended for a wide-ranging group of coastal and marine management practitioners and would-be practitioners with competence in written and verbal English communications. It has been used to cater to local government planners and technical staff, professionals of varied disciplines (e.g., academicians, lawyers, economists, natural scientists, sociologists, etc.), environmentalists and other stakeholders from NGOs with governance advocacies, coastal and marine management officers, and post-graduate students with inclinations toward coastal management and sustainable development.

Rationale:

This course aims to enhance the participants' understanding of ICM so they can envision and appreciate the ICM's full potential and long-term impact in promoting the sustainable economic development of coastal areas. With this, participants should be able to understand their and their sectors' vital role in the multidisciplinary and multisectoral approach of developing and implementing an ICM program.

Course Goals:

1. Understand and appreciate the basic concepts and principles of ICM
2. Explain the framework and processes involved in developing and implementing ICM at the local and national levels
3. Familiarize the participants with the tools to assess the social, economic, and environmental status of the coastal areas in their locale, as well as the use and management of these areas
4. Identify the strategies and approaches to initiating or strengthening an ICM program

Duration: Five Days

Modalities: lecture-discussion, learning activities, video showing, case/research analysis, field/site visit

Course Content

Unit I: Concepts, Principles and Elements of ICM

Unit I is an overview of the importance and value of coastal areas, with focus in East Asia, and the urgency of adopting an integrated management approach over the traditional sectoral approaches to effectively and efficiently sustain the development of these areas. It consists of three modules: The first module introduces the concept and importance of ICM, the second discusses the ICM principles, and the third introduces the Framework for Sustainable Development of Coastal Areas through ICM Implementation.

Unit II: ICM Program Development and Implementation

An ICM program involves a large number of diverse projects, each with a specific objective and different timeframe. The management of these projects requires effective coordination and integration to facilitate a logical, sequential, and synergistic strengthening of the program as it develops. Thus, a learner can better appreciate the process of ICM program development and implementation if it is operationalized through a six-stage cycle, referred to as the ICM cycle.

The overview of the cycle (Module 4) and the in-depth discussions of the individual stages (Modules 5-10) that followed provide the participants an understanding and appreciation of the process-driven and holistic nature of the cycle as well as the requirements under each stage.

Unit III: The ICM Code

Unit III discusses the following: (1) ICM Code based on the Framework for the Sustainable Development of Coastal Areas (SDCA) through ICM Implementation; and (2) Indicators of good practice that may serve as a guide for ICM practitioners in developing and enhancing their ICM programs.

Exercises on conducting an initial assessment of an ICM program and/or related environmental programs give the participants an opportunity for hands-on analysis of the status, strengths, and weaknesses of existing programs. This will help participants plan and develop a comprehensive ICM program.

Unit IV: Field Visit

Unit IV allows the participants to observe the practical application of the concepts, principles, and framework discussed in the previous modules. It provides the participants an opportunity to interact with and gain first-hand information from ICM program implementers and to observe the ground-level processes and activities involved in the implementation of ICM governance systems and sustainable development programs.

Unit V: Workshop on the Preparation for ICM Program Development

Unit V consists of workshops to prepare the participants for initiating the ICM Program Development.

A workshop on establishing the management mechanism for an ICM program will give the participants the opportunity to apply their learning from previous modules and identify the gaps and challenges in establishing said management mechanism.

Another workshop on establishing the scope and management boundary of and developing the road map for an ICM program will enable the participants to apply new learning, review ICM activities undertaken, and appreciate the need to systematize the development and implementation of ICM program activities.

Course Timetable

Day	Unit	Module		Duration
		Registration and Opening Program		2 hours
1	Unit I: Concept, Principles and Elements of Integrated Coastal Management (ICM)			8 hours
		Module 1	Introduction to the Concept of ICM	3 hours
		Module 2	ICM Principles	2 hours
		Module 3	Framework for Sustainable Development of Coastal Areas through ICM Implementation	3 hours
2	Unit II: ICM Program Development and Implementation			9 hours
		Module 4	ICM Development and Implementation Cycle	2 hours
		Module 5	Stage 1: Preparing an ICM Program	2 hours
		Module 6	Stage 2: Initiating an ICM Program	1 hour
		Module 7	Stage 3: Developing Strategies and Action Plans	1 hour
		Module 8	Stage 4: Adopting an ICM Program	1 hour
		Module 9	Stage 5: Implementing and Managing an ICM Program	1 hour
		Module 10	Stage 6: The Next ICM Cycle: Refining and Consolidating	1 hour
3	Unit III: ICM Code			3 hours
		Module 11	Introduction to the ICM Code and Indicators of Good Practice	1 hour
		Module 12	Initial Assessment of an ICM Program	2 hours
4	Unit IV: Field Visit	**Module 13**	Visit to an ICM Site	8 hours
5	Unit V: Workshop on the Preparation for ICM Program Development			7 hours
		Review of the Preparation Stage of the ICM Cycle and Gap Identification		1 hour
		Module 14	Workshop on Establishing the Management Mechanism for an ICM Program	3 hours
		Module 15	Workshop on Developing the ICM Program Work Plan and Budget	3 hours
	Closing Program	Course evaluation and closing ceremony		1 hour
				38 hours

Course Development Team

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Course Administrative Guide

General Introduction

This Model Course on Understanding Integrated Coastal Management (ICM) is developed and designed to be conducted as an intensive, five-day course, with approximately half of the course time in the form of 17 Learning Activities. The course is divided into five units as follows:

Unit I:	Concept, Principles and Elements of Integrated Coastal Management
Unit II:	ICM Program Development and Implementation
Unit III:	The ICM Code
Unit III:	Field Visit
Unit V:	Workshop on Preparation for ICM Program Development

Course Staff

It is recommended that a course director be designated, preferably one with practical experience in ICM and in teaching. Local staff should be assigned to assist the course director in the administrative activities related to the course implementation.

The roles of the course director and lecturers are outlined as follows:

Course Director

- Organization, administration, and logistics
- Identification of the course lecturers
- Course facilitation
- Overall instructional responsibility
- Review and modification of course content
- Provision of assistance to the instructors and participants
- Ensuring that the course goals and objectives are achieved
- Course evaluation
- Liaison with the concerned offices/resource persons for field visits

Lecturers

- Prepare and deliver the presentation/s
- Answer any questions
- Assist the participants in attaining the knowledge and skills required in the course
- Appraise, correct, and instruct the participants
- Plan and execute the learning activities
- Check the availability of materials required for the learning activities

Lecturers' Qualification

Lecturers for this course should have practical experience in developing and implementing an ICM program. They should also possess adequate pedagogical and presentation skills. In planning the course implementation, the course organizers must ensure that these skills are available among the two or three lecturers required to run the course.

Subject matter experts or specialists, for instance, in legislation, sustainable financing, or communication planning, may be called upon if necessary for certain modules.

Course Administration

Schedule

This course is designed as a continuous five-day intensive training program. One day is allotted for field visits. Two to three evening sessions may be required for tutorials and assignments. A social event is recommended for the participants to get to know each other.

Training Materials

All materials should be available in advance. The participants' manual should be printed and distributed in advance to enable participants to do the necessary preparations.

Part of the participants' manual and the lecturers' kit consists of the following materials:

Boxes

- Box 1.1: Examples of Coastal Multiple-use Conflicts
- Box 2.1: Example of Adaptive Management in Bataan, Philippines
- Box 2.2: Example of Spatial Scaling up in Manila Bay and Bohai Sea
- Box 7.1: The Private Sector's Role in the Environmental Management in the Province of Bataan, Philippines
- Box 9.1: Institutionalizing ICM in Xiamen (PR China)
- Box 9.2: Institutionalizing ICM in Batangas Province (Philippines)
- Box 9.3: Transformation of Coordinating Mechanisms at the Local Level
- Box 9.4: City and Municipal Ordinances (Batangas, Philippines)
- Box 10.1: Basic Requirements of ICM and ISOs
- Box 10.2: Examples of Adaptive Management in Xiamen and Bataan
- Box 10.3: ICM as a Policy Framework for Sustainable Development
- Box 13.1: Overview and Focus Areas in the Batangas ICM Program
- Box 13.2: Overview and Focus Areas in the Bataan ICM Program
- Box 13.3: Overview and Focus Areas in the Xiamen ICM Program

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- Figure 1.2: Multiple Uses of Land and Sea Commonly Seen in Coastal Areas in the East Asian Seas Region
- Figure 1.3: Categories of Ecosystem Services
- Figure 1.4: PEMSEA Program — From Demonstration to Replication
- Figure 1.5: ICM Scaling up in the Philippines
- Figure 1.6: ICM Initiatives in Thailand, Vietnam and Indonesia
- Figure 2.1: Pillars of Sustainable Development
- Figure 2.2: Managing the Coastal Areas' Three Subsystems
- Figure 2.3: The Adaptive Management Process
- Figure 2.4: The Horizontal (intersectoral) and Vertical (hierarchical) Dimensions of Integration in ICM
- Figure 2.5: The "I" (sectoral) and "T" (integrated) Approach in Coastal Management
- Figure 2.6: The Guimaras Sustainable Development Council
- Figure 3.1: Framework for the Sustainable Development of Coastal Areas through ICM Implementation
- Figure 4.1: The ICM Development and Implementation Cycle
- Figure 5.1: The Batangas Bay Region Environmental Protection Council (BBREPC)
- Figure 5.2: Initial Xiamen Integrated Management Coordinating Mechanism
- Figure 5.3: Current Xiamen Integrated Management Coordinating Mechanism

- Figure 5.4: Three-tiered multi-sectoral organizational structure for ICM implementation in Batangas Province
- Figure 5.5: The Management Boundary of the Chonburi ICM Project
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- Figure 6.1: The Categories of Data in IIMS and Applications to Support Planning and Decisionmaking in the Marine and Coastal
- Figure 6.2: The Tiered Approach in Risk Assessment/Risk Management Planning and Decisionmaking in the Marine and Coastal
- Figure 7.1: Typical Components of a Coastal Strategy and CSIP
- Figure 7.2: Xiamen Coastal Use Zoning Scheme
- Figure 7.3: Process of Developing the Coastal Use Zoning Plan of Danang (Vietnam)
- Figure 7.4: Integrated Environmental Monitoring Program in Batangas (Philippines)
- Figure 10.1: Application of Adaptive Management in ICM
- Figure 10.2: Replication of ICM Efforts in Batangas Bay region
- Figure 11.1: Model of a Process-based Quality Management System (ISO 9001: 2008)
- Figure 11.2: ICM Development and Implementation Process and the ICM Code Requirements
- Figure 11.3: Environmental Management System Model for ISO 14001: 2004

Handouts

- Handout 2.1: Manila Bay Coastal Strategy
- Handout 2.2: Bohai Sea Sustainable Development Strategy
- Handout 5.1: Cavite ICM Program Work Plan
- Handout 5.2: Bataan ICM Program Work Plan
- Handout 6.1: SOC Reporting Template
- Handout 6.2: State of the Coasts of Batangas Province
- Handout 6.3: Guide for Establishing IIMS
- Handout 8.1: Copy of Danang Coastal Strategy Declaration
- Handout 11.1: ICM Code of Good Practice
- Handout 11.2: Sample Procedure
- Handout 12.1: ICM Assessment Tool

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- Table 1.1: Important Events, Projects, and Laws in the Evolution of ICM in the Philippines
- Table 3.1. National Coastal and Ocean Policies, Strategies and Action Plans
- Table 3.2. Incorporating Public Education Programs into the ICM Process
- Table 4.1: Keys Elements of ICM Policymaking and Management Framework
- Table 5.1: Examples of ICM Performance Indicators for PEMSEA ICM sites
- Table 7.1: Marine User Fee System in Xiamen (fees in RMB)
- Table 7.2: Functional zones defined under the proposed Sihanoukville Coastal Use Zoning Scheme
- Table 8.1: Budget Allocation for ICM in Batangas.
- Table 9.1: Development of Legal Instruments for the Marine Environment in Xiamen.

Videos

- Video 1: Melasti: A Festival of Hope
- Video 2: Future of Our Coasts
- Video 3: Monsoon Tales
- Optional Videos: Bigkis Bataan Video, The Xiamen Story

Case Studies

Chua, T.E., L.M. Chou, G. Jacinto, S.A. Ross and D. Bonga. (Editors). 2018. *Local Solutions to Global Sustainable Agenda: Case Studies in Integrated Coastal Management in the East Asian Seas Region*. Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and Coastal Management Center (CMC), Quezon City, Philippines.

- Link: http://pemsea.org/publications/case-studies

Logistics

Logistics (classroom, sound system, multimedia projector, audiovisual aids, teaching aids, writing pads and pens) must be arranged in advance and verified by the course director upon arrival.

Room assignments, lodging requirements and transport must be arranged in advance as well.

References

The course utilizes the document below as main reference:

Chua, T.-E. 2006. *Dynamics of integrated coastal management: Practical applications in the sustainable coastal development in East Asia.* 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), Quezon City, Philippines. 468 pp.

Unit I

Concepts, Principles, and Elements of Integrated Coastal Management

Unit I is an overview of the importance and value of coastal areas, with focus in East Asia, and the urgency of adopting an integrated management approach over the traditional sectoral approaches to effectively and efficiently sustain the development of these areas. It consists of three modules: (1) Introduction to the Concept of ICM; (2) ICM Principles; and (3) Framework for Sustainable Development of Coastal Areas through ICM implementation.

Module 1

Introduction to the Concept of ICM

Description

This module discusses the importance and value of coastal areas, the rationale for adopting an integrated approach to coastal management for sustainable development (i.e., the promotion of livelihood, economic growth, and environmental security), and the ICM initiatives with special reference to efforts done in East Asia.

Duration: **3 hours**

Material

- **Video**: Melasti: A Festival of Hope

Content	Guide

Learning Outcomes

At the end of this module, the participants will be able to do the following:

1. Discuss the value of coastal areas
2. Discuss the impacts of human activities on the coastal zone/areas
3. Discuss the nature and scope of ICM as distinct from single-sector coastal and/or marine management approach
4. Cite some coastal management initiatives and efforts in their own country or local area and their advantages as well as constraints.

Greet the participants and present the module objectives. Try to use a medium that is more permanent like Manila paper, which can remain posted on a wall throughout the module presentation. This will remind everybody of the module's focus.

Discussion

The discussion is divided into six main parts:

1. Definition of the coastal area
2. The value of coastal areas
3. Causes of environmental problems in coastal areas
4. ICM and its benefits
5. Limitations to the success of ICM
6. ICM initiatives in the East Asian seas region

Give the participants an outline of the module so they know how the discussion will flow. You may use visuals to aid your discussion but make sure you do not go beyond the scope prescribed in the module.

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What is a coastal area?

A coastal area is an entity of land and water that is affected by the biological and physical processes of both the sea and the land and defined broadly for the purpose of managing the use of natural resources (GESAMP, 2001).
While the boundary limits of the coastal area/zone need to be defined and delineated for management purposes, there are no set standards for delineating such boundaries and definitions differ from country to country. In the Philippines, for instance, the coastal area/zone is defined as *"a band of dry land and adjacent ocean space, water, and submerged land in which terrestrial processes and uses directly affect oceanic processes and uses, and vice versa; its geographic extent may include areas within a landmark limit of one kilometer from the shoreline at high tide to include mangrove swamps, brackish water ponds, nipa swamps, estuarine rivers, sandy beaches, and other areas within a seaward limit of 200-m isobath to include coral reefs, algal flats, seagrass beds, and other soft-bottom areas" (Republic Act 8550).*

The 2007 Law Concerning Management of Coastal Zones and Small Islands of Indonesia defines their coastal waters as a *"maritime area bordering land area up to 12 (twelve) nautical miles measured from the coastline, coastal waters connects the coasts and islands, estuary, bay, shallow waters, brackish waters and lagoon."*

In Thailand, the Ministerial Regulations for the Implementation of the Enhancement and Conservation of National Environmental Quality Act of 1992 defines a coastal zone as *"the strip of land marked by the highest level of natural tides." The most recent version of the pending Promotion of Marine and Coastal Resources Management Bill defines the coastal zone as "including coasts, brackish water and the sea — which includes the sea bed extending to the continental shelf — and islands surrounded by the brackish water and/or the sea."*

The coastal zone in RO Korea has been defined in the Coastal Management Act of 1999 to include *"coastal seawater covering the area from the shoreline to the outer limit on national territorial sea; and coastal land including uninhabited islands, 500 meters inland from the shoreline, or one kilometer inland from the shoreline in the case of fishing harbors, ports and industrial complexes."*

Regardless of how the boundaries are set, however, a coastal zone can be defined functionally as *"the broad interface between land and water where production, consumption, and exchange processes occur at high rates of intensity. Ecologically, it is an area of dynamic biogeochemical activity but with limited capacity for supporting various forms of human use. Geographically, the landward boundary of the coastal zone is necessarily vague" (Ketchum, 1972).*

The interactions between the physical, chemical, and biological processes of the land, freshwater, saltwater, and the atmosphere create the coastal ecosystems that provide a continuous supply of goods and services **(Figure 1.1**). These ecosystems are linked with the socioeconomic systems to form resource systems. Resource systems take into account the interactions between the terrestrial environment, marine environments, and human activities. Human

Learning Activity 1

Put up a picture of a coastal and marine area. Ask the participants to identify the extent of the coastal zone - landward and seaward.

Allow time for a brief sharing, pointing out differences and similarities in each site/ country.

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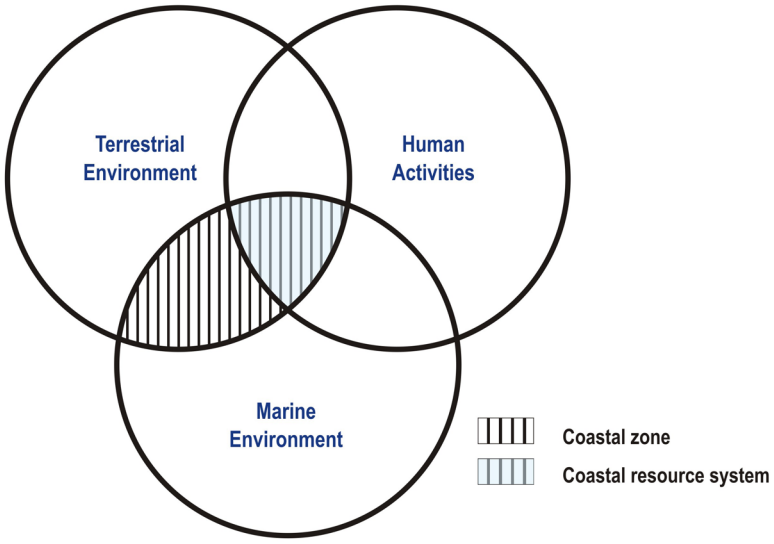
activities include the governing institutional and organizational arrangements. Thus, human activities are the third major force influencing the health and integrity of coastal zones.	Show the participants **Figure 1.1** Coastal zone and the coastal resource system.

Figure 1.1 The Coastal Zone and the Coastal Resource System
This diagram shows the interdependence of the terrestrial environment, marine environment, and human activities.



Source: Chua, 2006

What is the value of coastal areas?

The coastal area is home to various ecosystems such as the coral reefs, estuaries, mangroves, seagrass beds, and other wetlands (**Figure 1.2**) that provide numerous goods and services. The coastal and ocean areas provide as much as two-thirds of the ecosystems services that make up the Earth's natural capital (UNEP/GRID-Arendal, TEEB, 2012).

These ecosystems provide the following goods and services:

Coral reefs
- nursery ground and shelter for fish and associated organisms
- livelihood through fishery-related activities and ecotourism
- natural pharmaceuticals products
- physical barrier, i.e., provide shoreline defense by absorbing wave energy

Mangroves
- nursery and feeding grounds for commercially important species of fish and associated organisms
- shelter and breeding grounds for inshore and migratory species
- livelihood through fishery-related activities and ecotourism
- shoreline defense against floods and beach erosion
- pollutant "sink" by filtering certain types of waste that reach the sea
- carbon sink

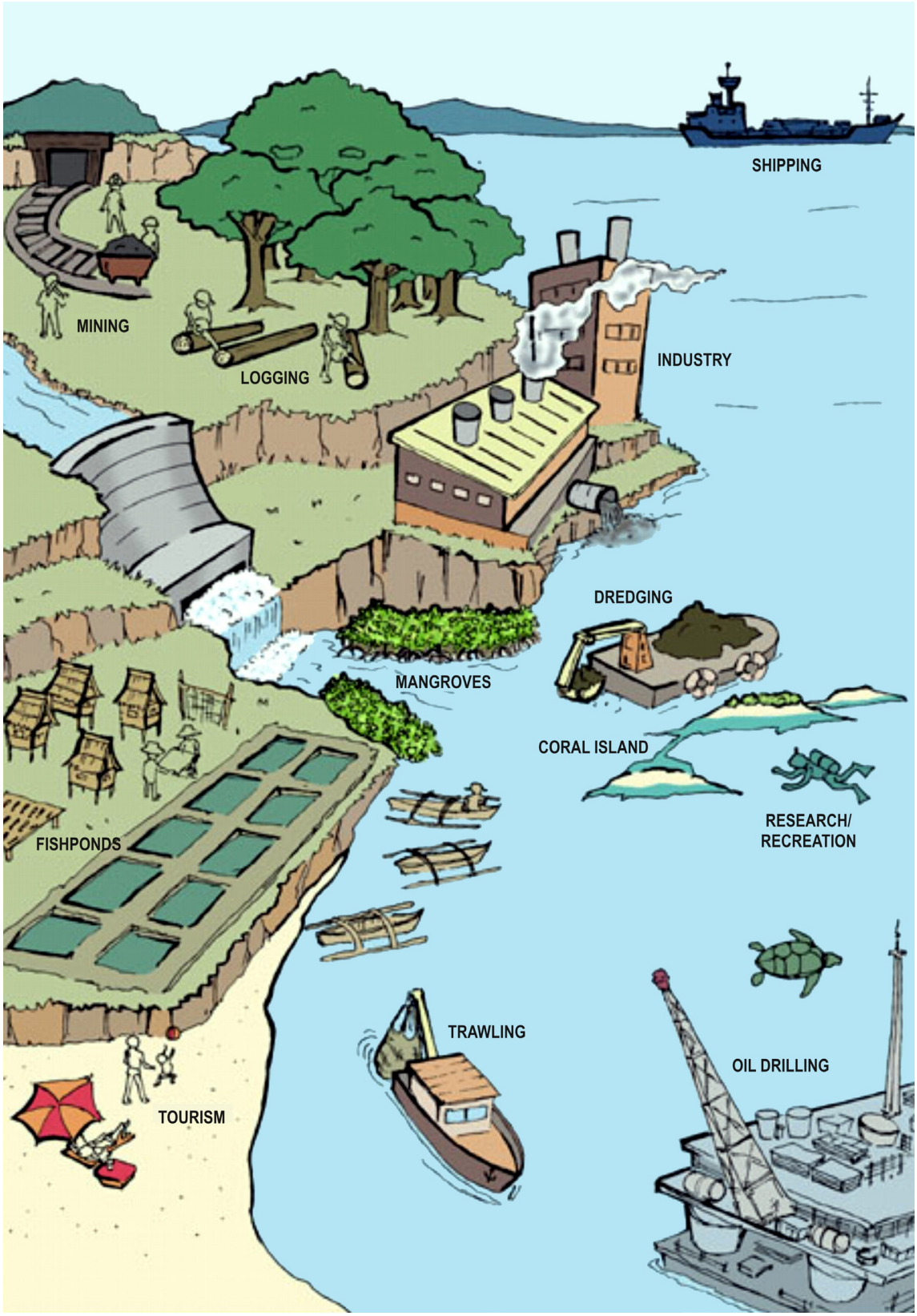
Learning Activity 2

To help set the tone for this topic, remind the participants of the importance of the seas and coastal areas to human life. This will help them put into proper perspective the importance of managing human behavior on the use of the coastal area.

Group the participants and ask each group to make a list of the value of their country's or local area's coastal area. Give them metacards (one value/metacard). After 10 minutes, ask each group to present their lists to the plenary. After all the groups have presented, process their lists by categorizing each value according to the following:

- Natural values (ecological, tourism, recreational)
- Historical and cultural
- Socio-economic
- Disaster risk reduction
- Settlement and Development
- Others

Figure 1.2 Multiple Uses of Land and Sea Common in the Coastal Areas of East Asia



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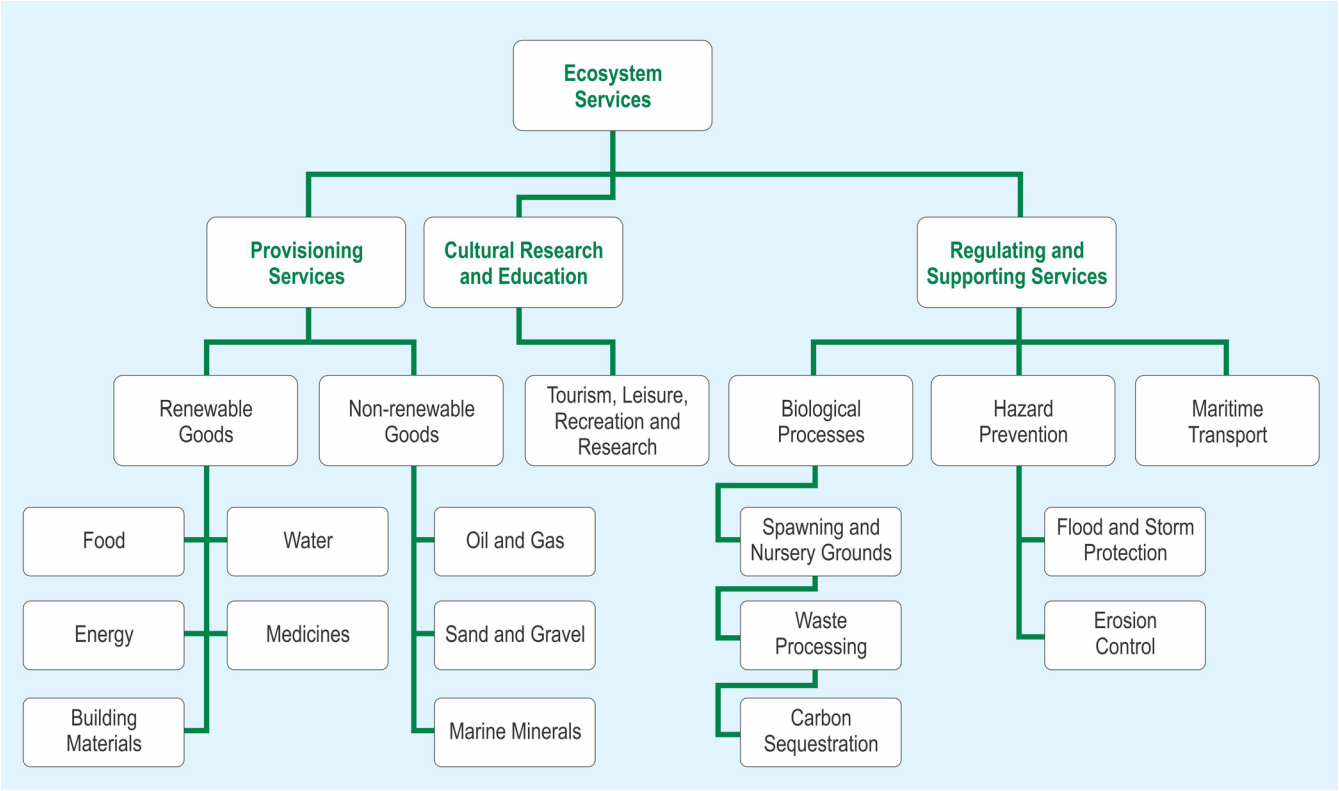
Seagrass beds • nursery ground, shelter, and food for fish, invertebrate, dugong, turtles, and seahorses • coast stabilization • fertilizer and fodder • pollutant sink ***Other wetlands*** • crucial shelter, food, and nutrition for a wide range of sedentary and migratory species, including a great number of rare, vulnerable, threatened, and endangered species ***Estuaries*** • dwelling and nursery grounds for birds, mammals, fish, and other wildlife • natural buffer between land and ocean • natural harbors and areas for ports and other infrastructure supporting transportation, industry, commerce, livelihood, and recreation.	Show the participants **Figure 1.2** Multiple Uses of Land and Sea Common in the Coastal Areas of East Asia.
These ecosystem services can be grouped in to four categories (**Figure 1.3**): 1. Provisioning services: products or goods such as water, fish, and timber; 2. Regulating services: ecosystem functions such as flood control and climate regulation	Show **Figure 1.3** Categories of Ecosystem Services

Figure 1.3 Categories of Ecosystem Services



Source: Chua, 2006

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3. Cultural services: nonmaterial benefits, such as recreational, aesthetic, and spiritual benefits
4. Supporting services: fundamental processes such as nutrient cycling and photosynthesis that support the three categories

In 2008, UNEP-Arendal and TEEB (2012) estimated that some 80 million tons of fish were caught, valued at more than US$ 80 billion. Worldwide, the activity created 35 million jobs which directly affected the livelihood and food security of more than 300 million people. The value of the services provided by near shore coral reefs in maintaining fisheries in the Philippines was estimated at about US$ 15,000–45,000 ha^{-1} yr^{-1}, allowing for sustainable fishing for local consumption and contributing about US$ 5,000–10,000 km-2 yr^{-1} in live fish export (White, et al., 2000). In Australia, the loss of 12,700 ha of seagrasses was associated with the loss of fishery production of about AU$ 235,000 (McArthur and Boland, 2006).

Estimates of the value of services provided by coastal biomes for coastal protection are significant. In Indian Ocean, the coastal protection provided by near shore coral reefs is valued at about US$ 174 ha^{-1} yr^{-1} based on the effects of the 1998 bleaching event on property values (Wilkinson, et al., 1999). In Thailand, the capitalized value for storm protection provided by mangroves is about US$ 8,966–10,821 per ha (Barbier, 2007).

In East Asia, the majority of countries have coastlines and large coastal areas that provide a continuous supply of goods (fish, oil, gas, minerals, salt, and construction materials) and services (shoreline protection, sustaining biodiversity, water quality maintenance, transportation, recreation, and tourism). If the estimated global value of goods and services sourced from different ecosystems averages US $33 trillion a year, then a substantial part of this figure must be contributed by East Asia, considering that 30 percent of the world's coral reefs, one-third of the world's mangroves, at least 20 of the 50 species of the world's seagrasses, and a wide range of environmentally and economically significant wetlands, estuaries, lagoons, bays, and gulfs are found in the region. Coral reefs in Southeast Asia alone generate an estimated value of US$ 112.5 billion a year.

The Seas of East Asia have vast living and nonliving resources. They contribute up to 40 million T of fish per year and produces 80 percent of the world's aquaculture products. They also provide the needed primary input for industrial development within and outside the region. These contribute to the development of maritime industries and livelihood to millions of coastal inhabitants.

Providing the natural setting conducive to port, shipping, maritime trade, primary industries, and coastal tourism, the coasts of East Asia are major social and economic development zones, contributing to about 40-60% of the GDP of the countries in the region. Much of the industrial developments in East Asia occur along the coast, particularly industries such as refineries, petrochemical manufacturing, food processing, and ship building and repair. Clearly, the seas and coastal areas facilitate much of the region's trade, commerce, and economic growth.

The economies in Asia in general are largely fueled by coastal and marine resources and services. The fisheries sector alone employs about 49 million fishers and 18 million fish farmers (FAO, 2014). As a strategic entry point for navigation and tourism, coastal areas are also rapidly urbanizing, with industrial

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zones, ports, and other tourist establishments being put up. Oil exploration, shipping industries, and other such activities are continually encouraging multinational corporations to invest and in the process, coastal areas are attracting more migrants and settlers.

Because they are very accessible, coastal areas have actually always been centers of human activity, where people live and derive their means of livelihood and recreation. People tend to aggregate in these narrow strips of land. The coastal area/zone represents 10 percent of the earth's surface but is inhabited by over 60 percent of the world's population that is dependent on the seas for nutrition, livelihood, minerals, medicine, and building materials. In East Asia alone, more than 1 billion people live on the coast. Already densely populated and highly urbanized, population growth and urbanization continues in these areas and at much larger scale and pace than that in inland areas.

Parallel to developments in the coastal areas are upland/upstream activities such as harvesting of timber and other forest products, minerals, and other resources. Such upstream activities in watershed areas also contribute to economic growth, but at the same time influence the ecosystem downstream.

What are the causes of environmental problems?

In their quests for socioeconomic development, people contribute to environmental and resource damages, but in return suffer from them. Rapid economic growth has been accompanied by deterioration in air, water, and soil quality; depletion of both renewable and non-renewable resources; and loss of habitats and endemic species. Air-, water-, and soil -related diseases affect human productive capacity. Habitat and resource degradation and loss of biodiversity affects resource productive capacity and intrinsic resiliency, which in turn affect income, food adequacy and security, health, natural defense against calamities, future potential resource use, and many other aspects of human well-being.

All these show that economic growth is short-lived if the environment and resources are not conserved due to the high costs of ecological and socioeconomic impacts. Moreover, certain sectors of the society suffer disproportionately from the loss of ecosystem values, in particular those relying on traditional resource-based activities for their livelihood, and those living in hazard-prone areas.

Institutional Failures

It is believed that the degradation of the environmental resource base is mainly due to institutional failures, such as the following:

a. Failure of the market system (e.g., pollution, overextraction of resources influential vested interests, inadequate property rights system)
b. Inappropriate and/or inconsistent application of government policies (e.g., inappropriate economic growth policies, weak regulatory and enforcement systems, concentration of growth in few urban centers)

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c. Information failure, including information for decisionmaking
d. Inadequate budgetary commitments and funding
e. Failure to develop skilled human resources through capacity building

However, while much of the damage has been caused by institutional failures, poverty and population growth are also adding pressures to the environment and natural resource.

Poverty

Having limited livelihood options, the poor usually turn to natural resources for subsistence and income supplement especially in times of acute economic stress. Moreover, they sometimes resort to eco-destructive means of subsistence, as when poor fishermen use illegal fishing methods to catch more fish, which causes damage to habitats that then causes further decline in fish yield. The poor have also limited access to land, credit, insurance, and capital markets, and are often forced to live on and subsist from fragile ecosystems. For instance, many landless farmers are forced to work on the hillsides and marginal areas, causing soil erosion that leads to lower agricultural productivity.

Population

Providing adequate food supply, clean air and water, and source of income for an increasing population exerts pressures on the environment and resource base. Rapid urbanization and unequal development in the rural areas fuel immigration, add stress to existing physical and social infrastructures, and compound the environmental problems.

Cumulative Causation

The three causes of resource and environmental problems — institutional failures, high population and poverty — pull in different directions, but feed upon one another. Together, they form cumulative causation loops whereby failure

Give some examples of multiple use conflicts. Some examples are provided in **Box 1.1**.

Fig 1.2 may again be referred to in discussing multiple use conflicts here.

Box 1.1 Examples of Coastal Multiple Use Conflicts

Port Expansion vs. Mariculture
Dalian Port borders the Northern Yellow Sea. Being one of the largest seaports in China, many development and economic activities take place here, including mariculture. Thus, there are various instances when one activity negatively affects another, thereby creating conflicts among the concerned coastal area stakeholders.

Dalian Port has shipping routes with 150 countries. In recent years, the number of legal cases filed against the port has increased, according to the Dalian Maritime Court, because of the damages to mariculture facilities and fishing gears caused by domestic and foreign ships navigating the shipping routes. The total amount of compensation for the damages claimed each year has increased from RMB 1.7 million in 1991 to RMB 14.2 million in 1997.

Fishing vs. Submarine Cables and Pipelines
The telecommunications industry and the offshore oil and gas development are growing industries. Thus, more submarine cables and pipelines are at risk of being damaged by fishing activities. There were about 31 submarine cable-breaking incidences attributed to outside forces such as anchoring by fishing vessels from 1994 to 2000. It was estimated that each repair or maintenance operation would need about 30 days with costs ranging from US$ 0.6 million to US$ 1.2 million. The Sino-U.S. cable-breaking event near Shanghai that was caused by a fishing vessel substantially interrupted telecommunications between the two countries for weeks. Breaking of submarine petroleum pipelines would cause not only economic losses but also ecosystem damages from the resulting oil spill pollution.

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to address one worsens the other, leading to a vicious cycle of environmental degradation. For example, institutional failure to implement positive and effective population control policies and failure to meet the needs of the resulting additional population lead to increased number of poor people who may inadvertently or deliberately create environmental risks for lack of subsistence options.

Addressing the environmental challenges therefore requires a holistic and integrated approach that considers all forces — social, economic, and political — and their interacting effects across multiple sectors and across multiple scales in time and space."

What is ICM and what are its benefits?

Integrated coastal management (ICM) is defined as a natural resource and environmental management framework that which employs an integrative, holistic approach and an interactive policymaking, planning, and implementation process in addressing the complex management issues in the coastal area. The process follows a certain cycle that will be discussed in succeeding modules.

ICM is a holistic approach that addresses both the individual behavior and institutional "rules of the game." In other words, it is not sufficient that individuals change; institutions should also reflect and reform its operations, and set up and enforce policies, agreements, laws, and other "social contracts" to regulate excessive behavior toward the coastal and marine environment. Government initiatives must therefore focus on reinforcing positive attitudes and "correcting" destructive practices.

Many coastal management issues cut across sectors. For instance, if not properly zoned, aquaculture areas may affect navigation routes and tourism. In the same manner, if coastal tourism is not properly managed, local industries and establishments that cater to tourists may be affected.

The conventional or sectoral management approach, which addresses these challenges in isolation, may not be sufficient in solving complex problems in the coastal areas.

The ICM approach offers the following:

1. An alternative and effective management system that recognizes the links between and among ecosystems and stakeholders
2. An emphasis to the interrelatedness and the dynamism of socioeconomic and political factors with respect to coastal and marine resources. This approach is situated within the broader framework of sustainable development of coastal areas.

Socioeconomic activities in the coastal areas of East Asia are conventionally managed by different line agencies. These line agencies are typically focused on different aspects of coastal and marine governance. For example, the Fisheries Department, which is typically placed under the Ministry of Agriculture, manages the fishing and aquaculture industries. On the other hand, the Marine Department, which is typically under the Ministry of Transport, controls shipping and navigation and sometimes combats oil and chemical spills from ships.

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The sectors directly or indirectly involved with coastal and marine governance include fisheries, aquaculture, mining, forestry, tourism, industry, trade, ports and harbors, navigation, legal, environment, public health, coast guard, navy, hydrography, weather, economic development, social affairs, security, interior, science and technology, and foreign affairs. Many of these agencies have overlapping responsibilities on coastal and marine governance. This comes as no surprise since experience has shown that most coastal management issues are not exclusive to one or two sectors. This is very clear in the various cases of multiple use conflicts. Thus, close coordination among these related agencies can dramatically improve their functional integration. This is a significant step toward the efficient governance of the coastal ecosystem.

This integration and coordination of the various coastal and marine management efforts is a major objective of the ICM approach.

ICM is the governance of human activities that affect the sustainable use of goods and services generated by the coastal and marine ecosystems through integrated planning and management.

ICM overcomes the weakness of the conventional sectoral management approach through the following:

1. ***Facilitating a better understanding of the uniqueness of the coastal resource system.*** By adopting an integrated management approach, ICM reminds the various stakeholders that different sectors are involved in ensuring the coastal areas' sustainability since all their activities affect the ecosystems within. In contrast, single-sector management often fails to consider the cross-sectoral impacts of the multiple uses of coastal resources.

2. ***Integrating ecological, social, and economic information.*** This ensures that the management strategies formulated are holistic, and therefore responsive to ecological, social, and economic issues. This optimizes the multiple uses of coastal resource systems.

3. ***Promoting interdisciplinary approaches and cross-sectoral cooperation and coordination to address complex development issues.*** Thus, conflicts and duplication of activities and management efforts by the various stakeholders are avoided, ensuring a more efficient and effective management system.

What limits the success of ICM?

However, the success of an ICM initiative depends on a number of factors:

1. ***Local capacity.*** ICM is most effective if it is implemented at the local level. Thus, the management capabilities of the local government should be strengthened.

2. ***Political commitment.*** Outcomes of short-term ICM initiatives are vulnerable to political changes. Thus, long-term political commitment is essential. Integration of ICM programs into long-term government planning and economic development programs is necessary.

Learning Activity 3

Before moving on to the discussion of the factors that limit ICM success, group the participants and ask them to list specific coastal problems, issues, or threats that are experienced in their country or local area. As before, give them metacards (one threat per metacard). After 10 minutes, ask them to post their metacards on the board.

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3. **Interagency cooperation.** Although interagency conflicts cannot be totally avoided, those causing unnecessary waste of resources and conflicting policies can be minimized through regular consultations and interactions among concerned agencies.

4. **Financing mechanisms.** ICM should work within the scope of government resources and build upon them by mobilizing resources from the private sector and other financing institutions. ICM should not be seen as an additional financial burden to society. The value it generates is reflected in how multiple use conflicts are reduced, how the use of coastal resource systems is optimized, and how investment opportunities are created to conserve and sustain the development of the coastal area's resource base.

5. **Local champions.** Local stakeholders who understand the objectives of ICM and are enthusiastic about ICM application could be mobilized to serve as the local champions. Their presence marks the beginning of local buy-ins.

6. **Human management.** This is the most difficult problem faced by ICM efforts. The quality of the coastal manager and staff can greatly influence the success of an ICM initiative. As ICM is basically the management of people, interpersonal skills often count more than technical capability.

Categorize the threats according to the following:

- Land-based
- Aquaculture/fisheries-based (e.g., destructive fishing and aquaculture practices
- Habitat destruction (e.g., overexploitation, habitat conversion)
- Endangered species and trade
- Pollution
- Climate change and sea level rise
- Socioeconomic issues (e.g., resource use conflicts)
- Governance and management issues

6. What are some of the ICM initiatives in the East Asian region?

ICM evolved from the practical need to manage the various economic activities in coastal areas. Such efforts began in the United States.

1965 – The San Francisco Bay Conservation and Development Commission was created.

1972 – The Coastal Zone Management Act of 1972 was promulgated. This landmark piece of legislation encourages coastal states throughout the United States to develop and implement coastal zone management plan.

Southeast Asia was exposed to the concept of coastal management soon after this. However, major regional efforts did not begin until 1985.

1985 – Six national coastal resources management subprojects in Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore, and Thailand were developed and implemented through a regional United States Agency for International Development (USAID) project. These ended in 1992.

1993 to 1999 A project financed by the Global Environment Facility (GEF), implemented by the United Nations Development Programme (UNDP) and executed by the International Maritime Organization (IMO) was participated in by 11 countries in the region. The project was designed to provide these countries with the long-term support they needed to prevent and manage marine pollution. This support would also make them self-reliant in managing pollution. Two pilot sites were set up to develop working models for ICM in the region — one in Batangas Bay (Philippines) and one in Xiamen (China).

Learning Activity 4

To better illustrate the effectiveness of ICM, show **Video 1** (Melasti: A Festival of Hope; 12 minutes), which illustrates how an ICM initiative helped to better handle a locale's coastal management issues.

Use **Table 1.1** on the evolution of ICM in the Philippines as reference for discussion on how ICM can evolve in one country. Key messages highlighted may include the following:

- Evolution of the concept of the coastal zone from an infinite source of marine goods to an area which harbor finite supply of goods
- Coastal zone ecosystems as provider of ecosystem services and not just source of goods
- Interdependence and interconnectedness of systems

Ask the participants to share the corresponding management initiatives implemented in their country or local area to solve the threats faced. Elicit their perceptions on the advantages and constraints experienced in the implementation of these management initiatives.

Table 1.1 Important Events, Projects, and Laws in the Evolution of ICM in the Philippines

Pre-Spanish	Villages controlled coastal resources, no organized state
1500s–1898	Spanish introduced and maintained state control over natural resources
1932	Fisheries Act gave most management responsibility to central government but allowed exclusive use of coastal waters by individuals for fish corrals, fishponds, and the like and introduced municipal boundaries for subsistence fisherfolks
1930–1960s	Resources considered unlimited in supply not requiring management
1946–1960s	Blast fishing became common after World War II
1960–1970s	Robust expansion and development in fisheries and aquaculture
1974	First municipal marine reserve established around Sumilon Island, Cebu
1975	Fisheries decree promoted optimal exploitation of fisheries under central control
1975	Forestry Code established the need to protect mangrove forests
1976	Environmental Impact System established
1976	National Mangrove Committee established
1976	Commercial fishing limited to areas beyond 7 km of the shoreline
1976–1981	Five-year assessment of coral reef resources by UP-Marine Science Center
1978	Coral gathering limited to scientific research
1978	Marine Parks Task Force created to recommend sites for marine parks
1978	The Philippine Extended Economic Zone established
1979	Coastal Zone Management Committee with 22 agencies formed
1979–1982	First integrated small-scale fishery study of San Miguel Bay showed overfishing
1981	Philippines became signatory to CITES
1983–1987	Government embarked on Expanded Fish Production Program
1984–1992	Central Visayas Regional Project began community-based ICM supported by World Bank
1985–1986	Marine Conservation and Development Program of Silliman University and USAID established Apo, Pamilacan, and Balicasag Islands as marine reserves
1986	*Muro-ami* and *Kayakas* fishing methods banned in Philippine waters
1986–1992	First bay-wide management program in Lingayen Gulf with multiple academic and government partners supported by USAID
1987	Bureau of Fisheries and Aquatic Resources moved from the Ministry of Natural Resources to the Department of Agriculture
1988	First National Marine Park established at Tubbataha Reefs, Sulu Sea
1988	San Salvador Island marine sanctuary in Zambales initiated by Haribon Foundation
1990–1997	Fishery Sector Program of DA-BFAR initiated bay-wide management by ADB
1991	Local Government Code devolved responsibilities to local governments
1991	Southeast Asian Fisheries Development Center launched project on Malalison Island for community-based fisheries management
1992	Philippine Council for Sustainable Development created
1992	Philippines became a signatory to Agenda 21

1992	National Integrated Protected Areas System (NIPAS) Act passed
1993	Coastal Environment Program (CEP) of DENR established
1994–2005	Regional Program on Partnerships in Environmental Management for the Seas of East Asia with projects in Batangas Bay and Manila Bay
1995	Fisheries and Aquatic Resources Management Councils authorized
1996–2004	Coastal Resource Management Project of DENR supported by USAID
1998	Fisheries Code reinforced the roles of local government in management
1998	First National Coastal Mayors conference held to discuss ICM issues
1998–2005	Fisheries Resource Management Project built on lessons of Fisheries Sector Program (FSP) for bay-wide coastal management supported by ADB and Japan
1999	May proclaimed as the Month of the Ocean in the Philippines
2000	DA and DENR signed joint Memorandum on implementation of Fisheries Code
2001	More than 100 municipalities and cities allocated budget for ICM
2001	Southern Mindanao Integrated Coastal Zone Project started
2002	Coastal and Marine Management Office replaced CEP in DENR
2003	Coastal Resource Management (CRM) Certification System for coastal municipalities and cities adopted; Inabanga, Bohol, and Hagonoy, Davao del Sur became first CRM-certified municipalities
2003–2004	National Coastal Management Policy reviewed at national level
2004	More than 20 supporting organizations (academic, NGO, and government) endorsed a standard system to monitoring and evaluating marine protected areas (MPAs) nationwide
2004	Fisheries Improved for Sustainable Harvest (FISH) Project initiated by USAID

Source: White, *et.al*., 2006

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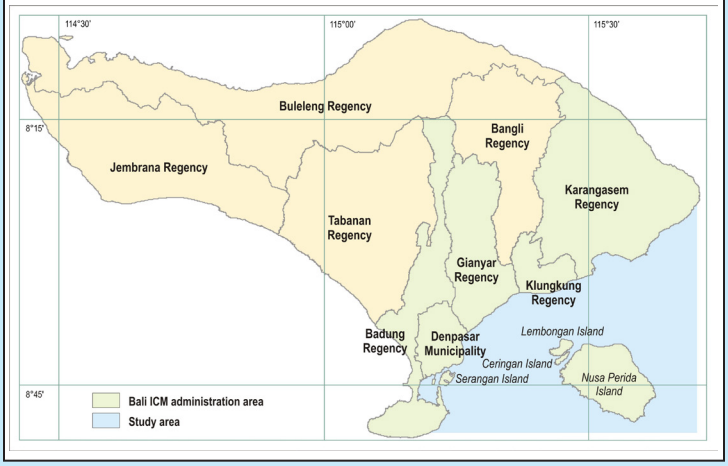
Worldwide, the 1993 roster of about 217 ICM initiatives had grown to almost 700 initiatives in the mid-2002s — a tripling of efforts in nine years. During this period, the efforts benefited from the increase in support from donors, multilateral lending agencies, and UN agencies.	.
Such global achievement was mirrored in East Asia where increased national efforts were observed and ICM was tested in different social systems.	
From 1999 to 2008, the program "Building Partnerships in Environmental Management for the Seas of East Asia" or PEMSEA was born. National ICM demonstration sites were set up in the region including those in Bali (Indonesia), Chonburi (Thailand), Danang (Vietnam), Klang (Malaysia), Nampo (DPR Korea), and Sihanoukville (Cambodia). In addition, 20 PEMSEA parallel sites were set up in PR China, Indonesia, Philippines, and Vietnam.	Show **Figure 1.4** PEMSEA Programme: From Demonstration to Replication.
To date, most countries in the region have started scaling up ICM implementation and continue to demonstrate success stories and actions on the ground.	Show **Figure 1.5 and 1.6** to showcase the ICM scaling up in the Philippines, Vietnam, Thailand, and Indonesia.
The ICM initiatives in the region contribute to the global implementation of international instruments for coastal protection that embody sustainable development principles.	

Figure 1.4 PEMSEA Programme — From Demonstration to Replication

Figure 1.5 ICM Scaling up in the Philippines

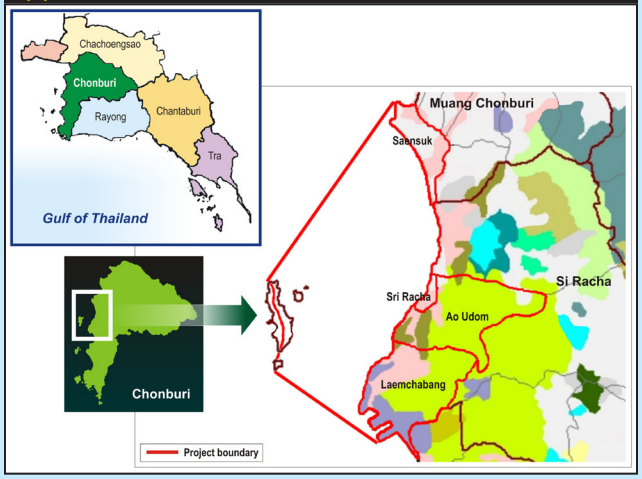
Figure 1.6 ICM Initiatives: (a) Indonesia (b) Vietnam (c) Thailand

(a) Bali, Indonesia



(b) Vietnam

(c) Chonburi, Thailand



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Among these international instruments are the following:

- United Nations Convention on the Law of the Seas (UNCLOS)
- Agenda 21
- UNEP's Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA)
- Convention on Biological Diversity's Jakarta Mandate on the Conservation and Sustainable Use of Marine and Coastal Biological Diversity
- United Nations Agreement on Straddling and Highly Migratory Fish Stocks
- Global Conference on Oceans, Coasts, and Islands
- Millennium Ecosystem Assessment which furthers the arrest of global degradation of ecosystems, including coastal and ocean ecosystems
- Manado Ocean Declaration
- Manila Declaration signed by 11 countries in 2009 which strengthens the implementation of ICM for sustainable development and climate change adaptation in the seas of East Asia

Based on all these efforts, a common framework for the Sustainable Development of Coastal Areas through ICM Implementation was developed. This framework will be discussed in **Module 3**.

Synthesis

Because coastal areas have resource systems that make them conducive to human survival and settlement, they are major socioeconomic development zones. This makes them susceptible to resource overexploitation and environmental degradation, which can seriously reduce the level of ecosystem goods and services they can normally generate.

To get more out of the coastal ecosystem for a longer time frame, the level of use and development of its resources must be kept within its capacity to generate these resources. This entails the careful management of all human activities that affect the ecosystem's integrity.

When the efforts by government, civil society, and private sector stakeholders are integrated and coordinated, the governance of the coastal and marine areas can be more effective and efficient. This is the main idea of the ICM approach. ICM overcomes the weaknesses of the conventional single-sector management approach because it reminds the various stakeholders that different sectors are involved in ensuring the coastal areas' sustainability since the activities of each sector affect the coastal ecosystem. ICM, unlike single-sector management, considers the cross-sectoral impacts of the multiple uses of coastal areas.

Before giving the synthesis, ask the participants this question: "What is your major learning from this module?" Get at least five responses and summarize the answers. This will more effectively pave the way for the formal synthesis.

Assessment

Participants should be able to describe a coastal resource system, the current issues and problems besetting the coastal environment, and the importance of managing human activities. They should also be able to discuss the advantages of ICM over the single-sector management approach.

Assess the participants' understanding of the module's content using the indicator specified in the assessment.

Refer to the list of module objectives you posed at the start of the module. Ask the participants if they feel that these objectives have been adequately accomplished. Be open to feedback. Entertain comments and suggestions on how to improve the module. You may be able to use these comments for the next module.

Module 2

ICM Principles

Description

This module highlights the sustainable development principles and discusses why ICM is considered as an essential tool in achieving sustainable development goals and objectives. Three fundamental ICM principles are introduced: adaptive management, integration and coordination, and ecosystem-based management.

Duration: **2 hours**

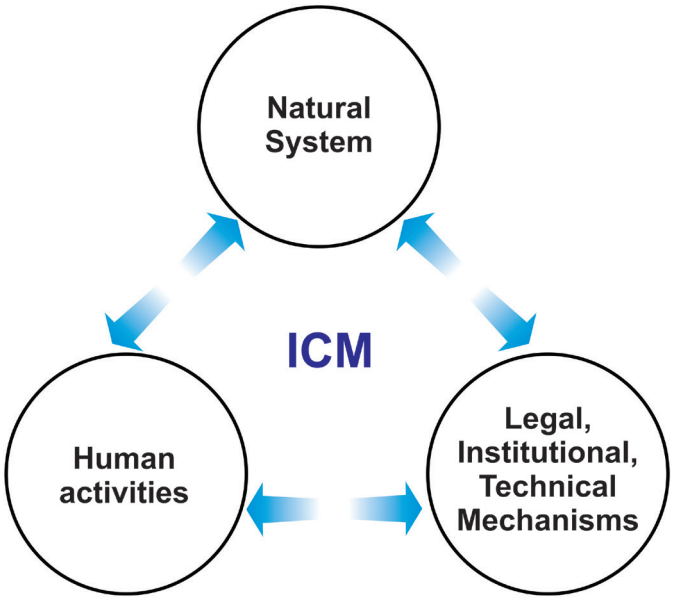
Materials

- **Handout 2.1** Manila Bay Coastal Strategy
- **Handout 2.2** Bohai Sea Sustainable Development Strategy

Content	Guide
Learning Outcomes At the end of this module, the participants will be able to do the following: 1. Explain why ICM is an essential tool to operationalize the concept of sustainable development 2. Discuss the role of adaptive management, integration and coordination, and ecosystem-based management principles in relation to ICM	As in the previous module, greet the participants and present the module objectives. Again, use a medium that shows the objectives more permanently and keep it posted on a wall throughout the module. This will remind everybody of the module's focus.
Review The previous module highlighted the following: 1. The integration and coordination of efforts by governments and other sectors engaged in coastal and marine management characterize the ICM approach 2. ICM recognizes the various stakeholders and multiple uses of the coastal and marine areas and realizes the importance of involving the different sectors in ensuring the sustainable use of the coastal areas.	Facilitate a brief review of the main concepts discussed in the previous module. Make the review interactive. Ask the participants to briefly explain the difference of ICM from the single-sector management approach.
Discussion The discussion is divided into two main parts: 1. Sustainable development 2. ICM as tool for sustainable development 3. Principles of ICM a. Adaptive management b. Integration and coordination c. Ecosystem-based management approach	Give the participants an outline of the module's discussion so that they know how the discussion will flow. Use visuals to aid your lecture-discussiont .
What is sustainable development? In 1987, the World Commission on Environment and Development (WCED) broadly defined sustainable development as "meeting the needs of the present without compromising the ability of the future generations to meet their own needs." The concept draws attention not only to the interdependence between the environment and economic activity, but also to a development model that takes societal welfare into account (**Figure 2.1**). Sustainable development aims to improve the quality of human life while protecting ecological integrity. In the context of coastal areas, sustainable development means the improvement of the quality of life of the coastal inhabitants while protecting the integrity of the coastal ecosystems, which is the main concern of ICM. To guide the various efforts on the sustainable development of the world's coastal areas and oceans, a number of global plans of action have been enshrined in conventions and/or international agreements: UN Summits: • Agenda 21 • the UN Millennium Development Goals (MDGs) • the UN Conference on Sustainable Development (SDGs)	Show **Figure 2.1** Pillars of Sustainable Development

Figure 2.1 Pillars of Sustainable Development

Figure 2.2 Managing the Coastal Areas' Three Subsystems



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Programme Specific Agreements:

- UN Convention on the Law of the Sea (UNCLOS)
- UN Framework Convention on Climate Change (UNFCCC)
- Biodiversity and marine protected areas management (CBD, Aichi Targets, Paris Agreement)
- Fisheries and sustainable livelihood (FAO Code of Conduct for Responsible Fisheries)
- Climate change and hazard management (UNFCCC, Hyogo Framework of Action, Sendai Framework)
- Pollution reduction (GPA)
- Water resources management (IWRM)

Why is ICM considered an essential tool in achieving sustainable development goals and objectives?

ICM provides the principles and guidelines to put into operation the concept of sustainable development in coastal areas and seas. Present ICM practice is tailored to fit the comprehensive approach to the management of coast and oceans advocated in Agenda 21 (Chapter 17), which should be *"integrated in content and anticipatory in ambit."* Coastal states are enjoined to undertake *"integrated management and sustainable development of coastal areas and the marine environment under their national jurisdiction."*

The issues that affect the sustainability of coastal environments are complicated. Often, these issues cross sectoral boundaries and are difficult to resolve in

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a single-sector management regime. ICM was developed to overcome the weaknesses of sectoral management approach.

As such, ICM endeavors to understand, monitor, and manage the processes between the three subsystems in a coastal area (**Figure 2.2**):

1. Natural system: encompasses all relevant non-human domains (i.e. natural resources, which could exist without the presence of man)
2. Human activities: or user functions, which represent the entire set of human interests in terms of the 'use' of the natural resources
3. Legal, institutional, and technical mechanisms: make available and allow the materialization of the user functions, which may have an intentional or unintentional effect on the natural system, and sometimes, directly or indirectly, on the other user functions as well, resulting in stresses and conflict

The knowledge about the three subsystems has been instrumental in informing the ICM practice. ICM has evolved and matured into understanding the practical need to plan and manage the various economic activities that occur in coastal areas, regulate human behavior, and coordinate policy management interventions.

ICM has been recognized as a doable and an effective approach by UN conferences and action plans, such as UNCED, WSSD, and UNCLOS. It had also been prescribed over the decades by international and UN organizations, including GEF, World Bank, UNDP, UNEP, UNIDO, FAO, and IUCN, among others.

Over the years, ICM has been used as a platform to implement the following:
- Biodiversity and marine protected areas management (CBD)
- Fisheries and sustainable livelihood (FAO Code of Conduct for Responsible Fisheries)
- Climate change and hazard management (UNFCCC, Hyogo Framework of Action)
- Pollution reduction (GPA)
- Integrated water resources management (IWRM)

What principles set ICM apart from a sectoral management framework?

The overall goal of ICM is to attain sustainable development in coastal areas and seas through integrated planning and management, and interagency and multi-sectoral collaboration, with the following specific aims:
- Resolve multiple resource conflicts
- Maintain the functional integrity of the ecosystems and the health of the environment
- Facilitate the progress of multi-sectoral development

To attain this goal, ICM is guided by three principles. These principles, outlined below, form the foundations of ICM practice and set ICM apart from other coastal management frameworks:

1. Adaptive management
2. Integration and coordination
3. Ecosystem-based management approach

Show **Figure 2.2**: Managing the Coastal Areas' Three Subsystems.

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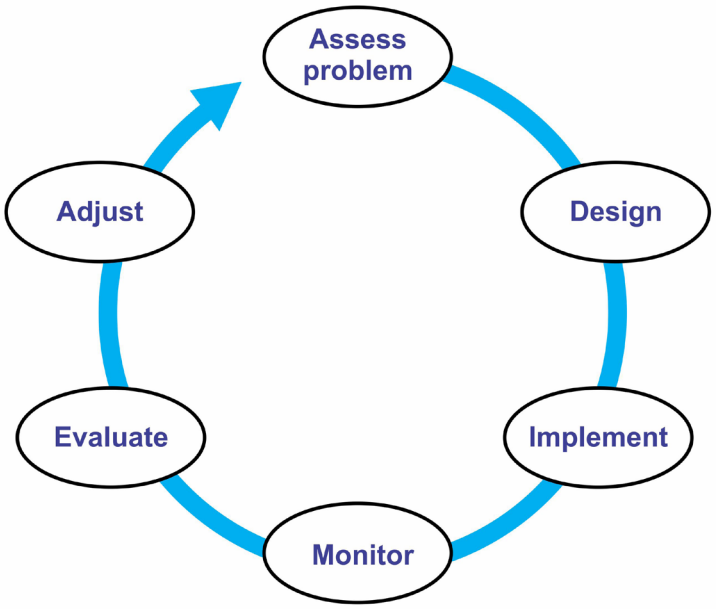
Adaptive Management	
The maxims "learning by doing," "practice makes perfect," and "learning from experience" sum up this fundamental ICM principle. Adaptive management is based on the premise that information and knowledge about resource systems and how to manage them are largely uncertain and incomplete. Thus, it adopts a purpose- and outcome-driven iterative process of planning, implementing, assessing, modifying, and/or re-doing (**Figure 2.3**). Under such a process, problems are framed, analyzed, and solved, ensuring that lessons learned from experience are applied, and the management practices are adapted accordingly. Applied throughout the ICM process, adaptive management therefore promotes learning and active reflection in individuals as well as continuous improvement in institutions and communities.	Show **Figure 2.3** . The Adaptive Management Process.
Adaptive management teaches how to adjust one's plan of action in response to prevailing situations, issues, and concerns. It emphasizes the need to be ready to make appropriate administrative or management adaptations in response to unforeseeable forces. These forces are usually ecological uncertainties (i.e., uncertainties on how natural resource systems function and respond to	Give the participants a situation that clearly illustrates the principle of adaptive management in ICM. An example is provided in **Box 2.1**.

Figure 2.3 The Adaptive Management Process



Box 2.1 Example of Adaptive Management in Bataan, Philippines

The ICM initiative in Bataan, Philippines experienced an almost one-year slowing down of activities because of a change in provincial leadership in 2004. Although the existing Project Management Office (PMO) and the Project Coordinating Committee (PCC) were not suspended and the other ICM activities continued, the new governor's support was lacking. The project responded to the leadership change by allowing the new governor to take his time in reviewing the project approach and operations, and the benefits it would provide to the province. The new governor was also invited to participate in a study tour to Xiamen ICM pilot site and in a meeting of the Regional Network of Local Governments Practicing ICM in Bali, Indonesia in April 2005. Adjustments were also made to include the priority concerns of the new governor in the ICM program of work. Finally, the new governor was convinced of the benefits of ICM. He became a champion of the ICM cause and an important leader of the regional network.

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management actions), and changing political and management conditions (i.e., policy changes and political interventions) that may hamper the otherwise smooth implementation of an ICM initiative. In most instances, it is best to reflect and act on the changes in public opinions and varying responses of stakeholders to management interventions. As such, the principle of adaptive management underscores the importance of knowledge management. Informed planning and decision-making depends on sound and adequate scientific and socioeconomic data and information (IOC, 2005).

Integration and Coordination

The functions of the principle of integration are to ensure the following: (a) the policies and management actions of relevant sectors within an ICM program are consistent with one another, (b) the policy and management reforms to facilitate policy and functional integration are based on scientific advice, and (c) the various intersectoral activities are closely coordinated and streamlined towards eventual scaling up of management practices.

There are three dimensions of integration that an ICM initiative should be concerned with: (a) System integration, (b) Functional integration, and (c) Policy integration.

System integration

System integration is concerned with the temporal and spatial dimensions of coastal resource systems. Temporal integration acknowledges and takes into account temporal cycles, such as the workings of bureaucracies (electoral and development planning) and businesses as well as ecological seasons. ICM management interventions must be balanced with the realities of these temporal cycles or else opportunities may be missed. On the other hand, spatial integration recognizes the interconnectivity of the land area, coastal area, and the ocean. The awareness that land-based activities affect coasts and oceans and vice-versa is important for the success of ICM.

System integration ensures that relevant management issues arising from the ecological, social, and economic aspects of the locale are adequately addressed by the ICM initiative. This means that the ICM manager should have spatial and temporal information on the locale's biophysical environment, socioeconomic features, and coastal economic activities. As was pointed out in the previous module, this ensures that the management strategies formulated are holistic, and therefore responsive to ecological, social, and economic issues.

Functional integration

Functional integration is concerned with the internal consistency among the various ICM management actions. This means that concerned line agencies should strive for collaboration and partnership to ensure that their management efforts do not duplicate, but complement each other instead. Establishing a coastal zoning scheme that allocates natural resources for specific uses is one effective form of functional integration. Such a scheme can define the types of activities permissible in each zone and the limits on the types of projects and programs that can be implemented, and identify the specific responsibilities of each line agency.

Content	Guide
Policy integration Policy integration ensures that national and local government policies and economic development plans are consistent with one another. Such integration guarantees complementarity among programs, projects, and activities. It also helps rationalize and coordinate the activities of public agencies.	
It is clear that policy and functional integration cuts across sectors and agencies (horizontal or intersectoral integration) (**Figure 2.4**). It also cuts across levels of governance (vertical or hierarchical integration). This must be emphasized as it is essential that local level efforts be reinforced by national level support in terms of policies and resources.	Show **Figure 2.4** The Horizontal (inter-sectoral) and Vertical (hierarchical) Dimensions of Integration in ICM.
Policy and functional integration in ICM can be further visualized as a "T" approach in which the vertical leg indicates the different sectors and the horizontal bar represents the link across each sector via a governance framework and participatory platform utilizing integrated planning and management processes (**Figure 2.5**). This is opposed to the "I" approach in which each sector operates independent of each other.	Show **Figure 2.5**. The "I" (sectoral) and "T" (integrated) Approach in Coastal Management.
The above mentioned three dimensions of integration cannot be achieved without coordination. Coordination is the operational means to achieve efficiency and cost-effectiveness of various policy and management interventions towards a set goal. This is done by avoiding duplications, streamlining activities, and sharing of expertise and resources. A coordinating mechanism may take the form of an interagency, multi-sectoral committee or council, with authority at the national or local levels (**Figure 2.6**).	Show **Figure 2.6** Guimaras Sustainable Development Council, to showcase an example.

Figure 2.4 The Horizontal (inter-sectoral) and Vertical (hierarchical) Dimensions of Integration in ICM

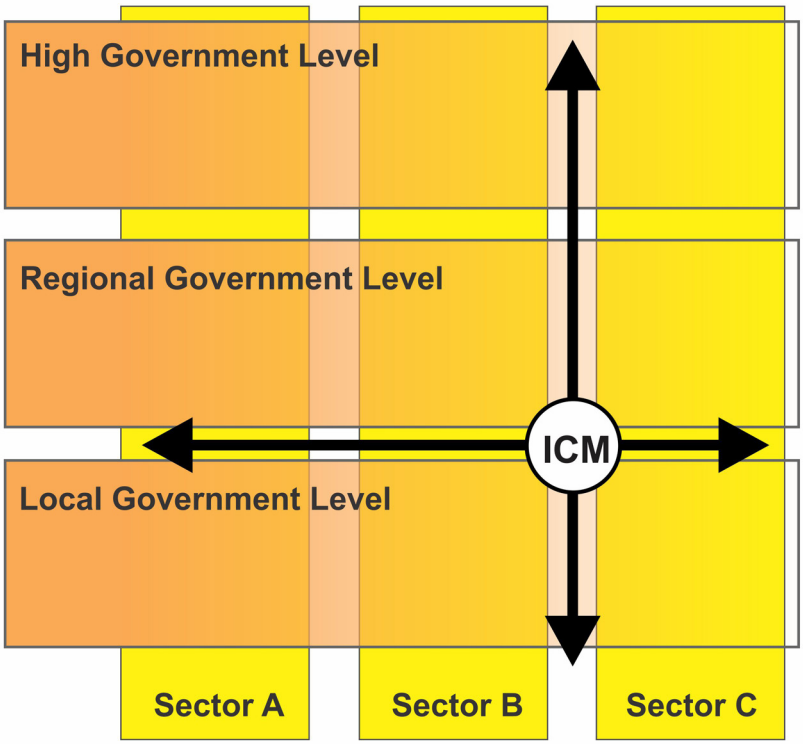


Figure 2.5 The "I" (sectoral) and "T" (integrated) Approach in Coastal Management

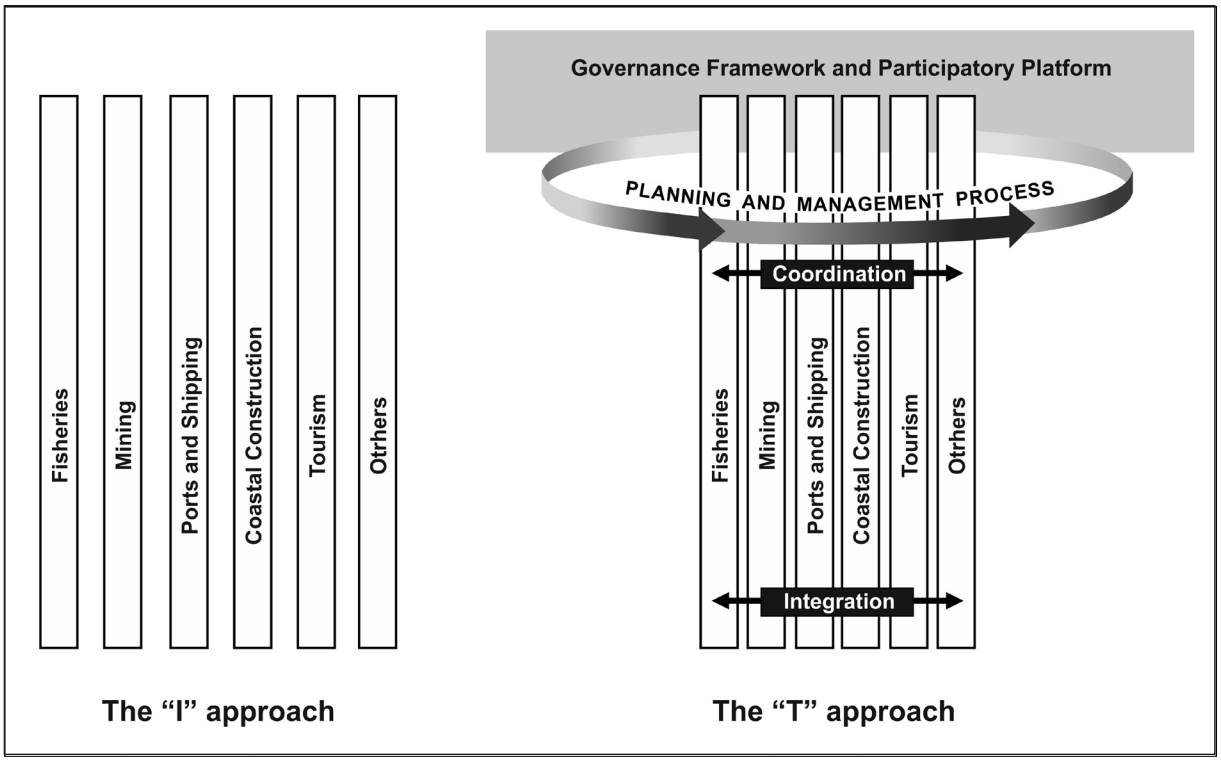
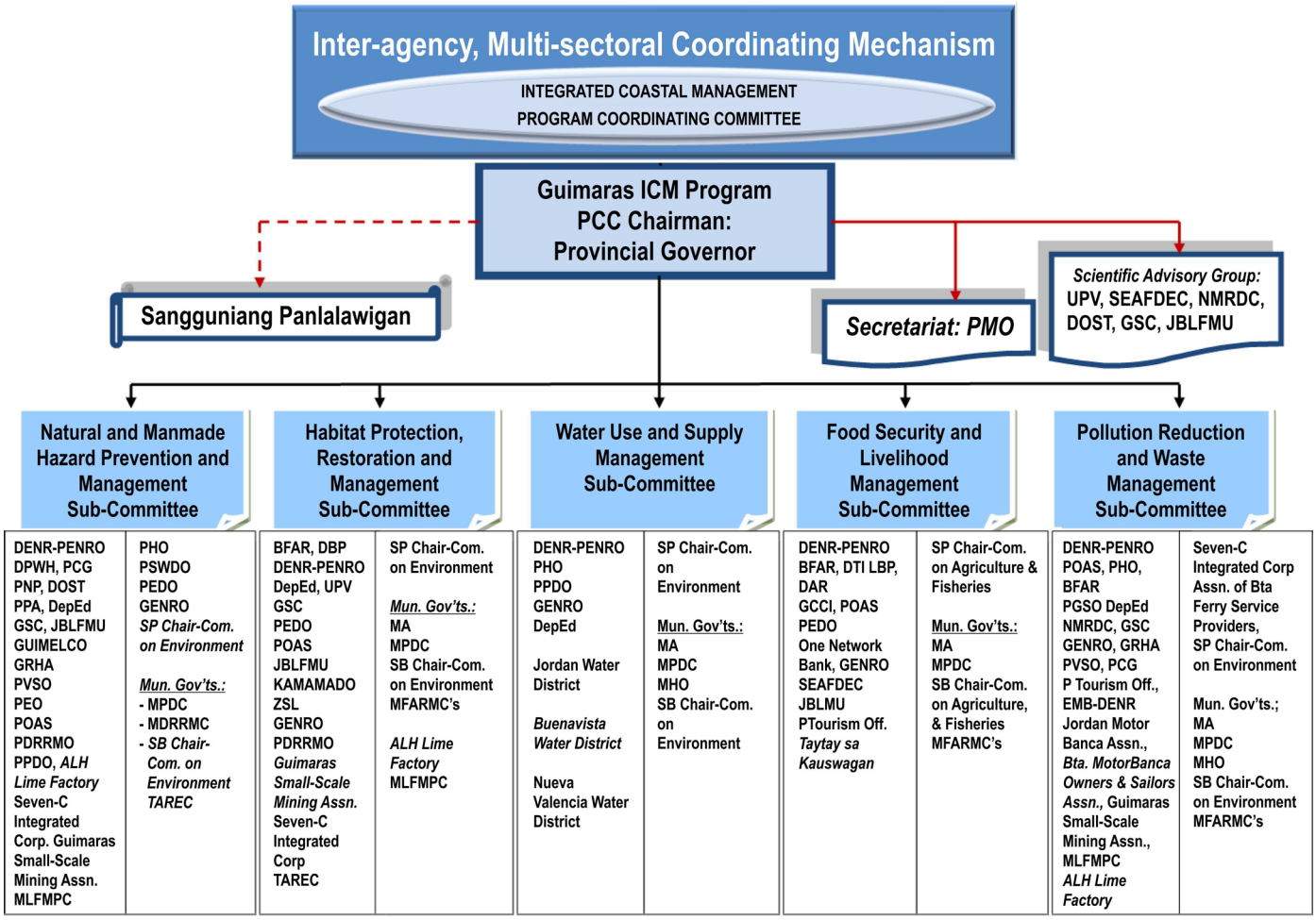


Figure 2.6 The Guimaras Sustainable Development Council



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Ecosystem-based management approach

This third ICM principle is focused on maintaining the integrity of ecosystems, which provide goods and services essential for human well-being. Ecosystem-based management is an integrated, science-based approach to managing the natural resources that aims to sustain the health, resilience, and diversity of the ecosystems while allowing for sustainable human use of the goods and services they provide.

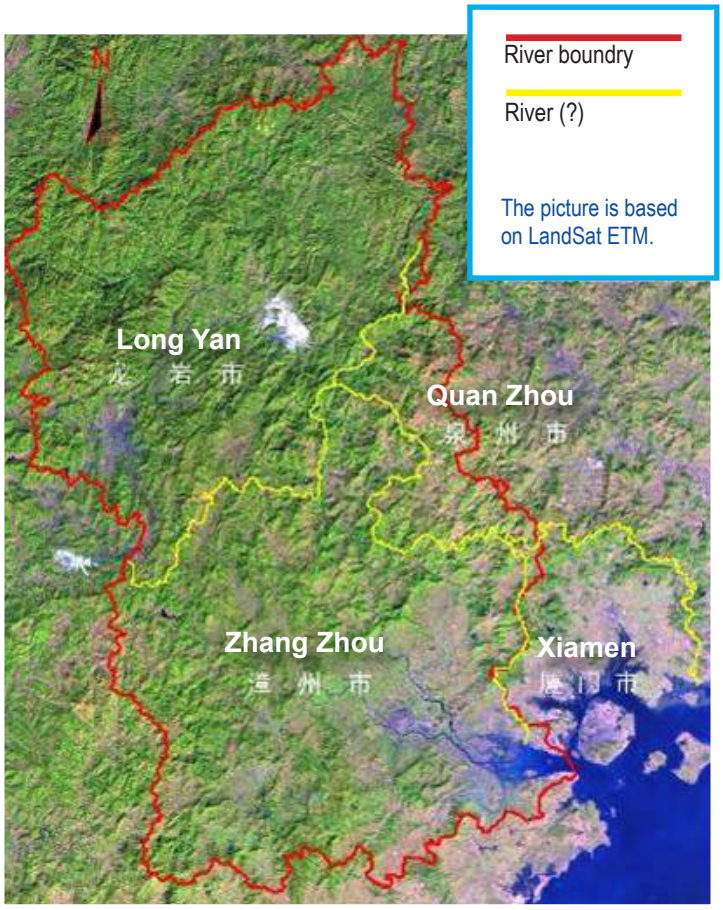
Box 2.2 Example of Spatial Scaling up in Manila Bay and Bohai Sea

The coastal strategies for Manila Bay (Philippines) and Bohai Sea (PR China) are examples of efforts to manage entire watershed-river-coastal seas systems. For instance, the Manila Bay Coastal Strategy addresses management issues arising from the multiple uses in the 17,000 km^2 watershed area (with 26 sub-catchments) and 1,800 km^2-bay area.

Similarly, the Bohai Sea Sustainable Development Strategy required the cooperation and collaboration of three coastal provinces and two coastal cities. Bohai Sea, the only inland sea in China, is drained by three major river systems (the Yellow, Hai, and Liao River systems). It has a watershed area of 1.4 million km^2.

Box 2.3 Integrated River Basin and Coastal Area Management Project - Jiulongjiang River and Xiamen Bay, China

- Second largest river in Fujian Province, China; predominantly agricultural watershed covering an area of 14,700 km^2
- More than 5 million residents from Xiamen, Zhang Zhou, and Long Yan City use Jiulong River as source for drinking water as well as for industrial and agricultural activities.
- The watershed contributes more than 25% GDP of Fujian Province



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The ecosystem-based approach maintains that effective ecosystem management entails managing the human interaction with the environment. This is particularly in light of the finding of the Millennium Ecosystem Assessment (2006) that people's rapidly growing demands for food, water, and other resources have caused abrupt and extensive degradation of ecosystem services, which has become a barrier to achieving the MDGs and sustainable development.	
The approach also facilitates ICM scaling up, both spatially and temporally. The environmental problems in a certain locale are often critically influenced by the interactions of the ecological, socioeconomic, and political factors in other locales; thus, the need to scale up and look at the "bigger picture.	Give examples of scaling up. Examples are provided in **Box 2.2** and **Box 2.3**. Provide copies of the Manila Bay Coastal Strategy and the Bohai Sea Sustainable Development Strategy.
Synthesis	
Sustainable development principles guide decision-making and management actions as well as provide the foundations for legislation, policies, programs, and projects. The sustainable development of coastal areas and oceans is a complex process; hence, it needs integrated and multidimensional solutions.	Quick assessment: A case study quick quiz can be given to the participants to analyze what ICM principles are as applied in specific ICM Coastal Strategy.
ICM operationalizes the concept of sustainable development. Unlike single-sector management, ICM considers the cross-sectoral impacts of multiple uses of the coastal areas. The governance of the coastal and marine areas can be more effective when the efforts of relevant agencies are integrated and coordinated.	
There are three fundamental ICM principles most important to coastal and ocean governance: adaptive management emphasizes the importance of adjusting strategies and approaches to suit changing conditions and uncertainties, integration and coordination emphasizes the importance of consistency and complementarity among management actions, and ecosystem-based management emphasizes the importance of preserving the integrity of the ecosystems. These principles form the foundations of ICM practice which set it apart from other coastal management frameworks.	
Assessment	
The participants should be able to explain why ICM is an essential tool to operationalize the concept of sustainable development. They should also be able to discuss the role of adaptive management, integration and coordination, and ecosystem-based management principles in ICM.	

Module 3

Framework for the Sustainable Development of Coastal Areas through ICM Implementation

Description

This module provides an overview of the Sustainable Development of Coastal Areas (SDCA) Framework through ICM implementation to enable participants to better understand and appreciate the major interactive dimensions and components of sustainable coastal development.

Duration: 3 hours

Content	Guide
Learning Outcomes At the end of this module, the participantswill be able to do the following: 1. Discuss the significance of the Framework for Sustainable Development of Coastal Areas through ICM Implementation 2. Explain the components of the Framework for the Sustainable Development of Coastal Areas	As in the previous modules, greet the participants and present the module objectives. Again, use a medium that shows the objectives more permanently and keep it posted on a wall throughout the module to remind everybody of the module's focus.

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Review

ICM operationalizes the concept of sustainable development.

The three fundamental principles of ICM are adaptive management, integration and coordination, and ecosystem-based management. Adaptive management emphasizes the importance of adjusting strategies and approaches to adapt to changing conditions and uncertainties; integration and coordination emphasize the importance of consistency and complementarity among management actions; and ecosystem-based management emphasizes the importance of preserving the integrity of ecosystems.

Facilitate a brief review of the main concepts discussed in the previous module. Make the review interactive. Ask the participants to briefly explain the fundamental principles that form the foundation of ICM.

Discussion

This module will elaborate on the SDCA framework and how it is applied to sustainable development of coastal areas.

The discussion is divided into three parts:

1. Introduction to the SDCA framework
2. Governance Elements of the SDCA Framework
3. Sustainable Development Aspects/Programs of the SDCA Framework

What is the SDCA Framework?

The SDCA Framework is a common framework for sustainable coastal development based on practical experiences in the application of ICM in the East Asian region. It covers a system of governance as well as several issue-specific management systems critical to achieving the overall goals of sustainable development. It is a useful guide for national and local governments to promote sustainable development initiatives and programs.

Give the participants an outline of the module's discussion so they know how the discussion will flow. Use visuals to aid your lecture-discussion.

Under the framework, a complete ICM program will also include the following (**Figure 3.1**):

1. The application of the ICM program development and implementation cycle to plan and execute the various essential activities under the governance components and strategic action programs

2. A State of the Coasts (SOC) reporting system to monitor existing conditions and response actions, measurable through process and impact indicators and targets

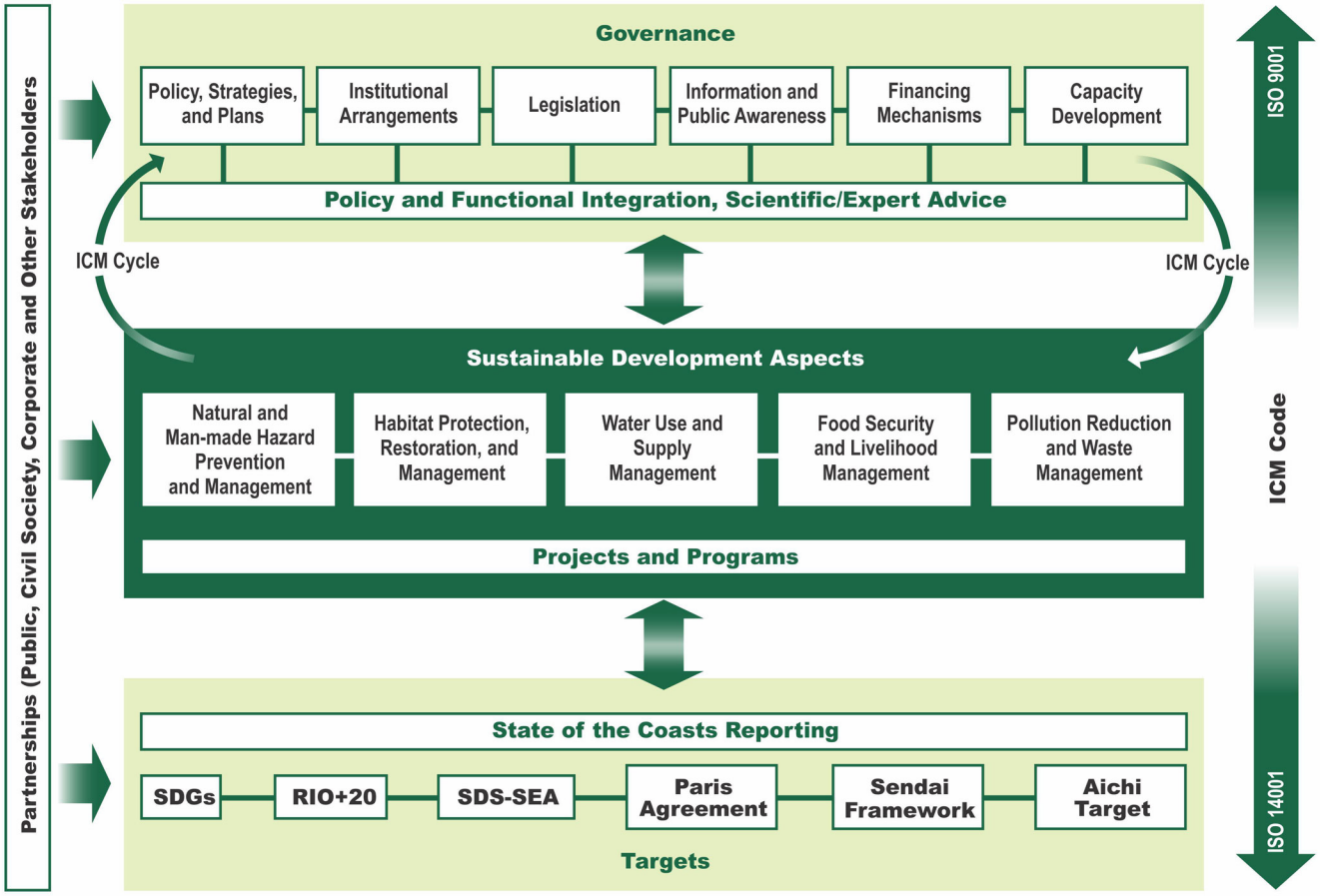
3. An ICM Code that adopts international standards (ISO) for quality management and sound environmental management

Each of these supporting components is further discussed in the latter part of the module .

Learning Activity 5

Group the participants into teams. Provide metacards of SDCA framework components and elements. Give them 30 minutes to discuss and categorize the terms into: governance elements, sustainable development aspects, and supporting principles and elements. Give each team 5 minutes to present the results of their discussion, adding them to highlight the rationale for their categorization.

Figure 3.1 Framework for Sustainable Development of Coastal Areas through ICM Implementation



Content	Guide
Governance Elements of the SDCA Framework Several elements are essential to the governance of coastal areas to ensure their sustainability: 1. Policy, Strategies, and Plans 2. Institutional Arrangements 3. Legislation 4. Information and Public Awareness 5. Sustainable Financing 6. Capacity Development These elements represent the various management actions, enabling mechanisms and program sustainability measures that are essential to the success of an ICM program. The governance component of the SDCA framework underscores the following: 1. Integration of policy and strategies in developing specific action plans to create a policy environment for financing, ecosystem protection, and capacity development	Show the participants the diagram of the Process-oriented Common Framework for the Sustainable Development of Coastal Areas through ICM Implementation (**Figure 3.1**). Highlight the major parts of the framework as you enumerate them.

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2. Promotion of institutional arrangements that facilitate interagency, multi-sectoral cooperation and collaboration
3. Development of appropriate legislations to ensure policy and functional integration and provide a legal basis for its enforcement
4. Development of appropriate financing mechanism to fund and sustain environmental management
5. Creation of an enabling environment for strengthening local coastal governance through capacity development
6. Implementation of public education and awareness programs to create an informed public and to help strengthen management interventions

Policies, Strategies, and Plans

In the context of ICM, policies set the ultimate objectives and direction on how to protect and manage the marine and coastal environment.

The usual driver for the development of coastal and marine policy comes from prescriptions from international agreements and agenda. These agreements are envisaged to manifest in national directions and legislations and finally, as actions on the ground.

Examples of international policy instruments that articulate policy directions or reforms to ensure the sustainability of coastal and marine environments are the following:

a. **Convention on the Law of the Sea (UNCLOS) of 1982. I**t is a comprehensive document that specifies the rights and obligations of states with regard to the seas or oceans.

b. **Agenda 21.** It is a program that lists 40 actions to promote global sustainable development and protect the oceans, seas, freshwater sources and coastal zones. Although it is not binding on its country or state parties, it has become very influential in the development of international as well as national environmental law.

c. **Sustainable Development Goals (SDGs)** – also known as the Global Goals, it consists of 17 Goals that build on the successes of the MDGs. Goal 14 (Life Under Water) focuses on marine life and the world's coasts and oceans.

As a result of the articulation of principles for the sustainable management of the world's coasts and oceans, regional initiatives became more focused.

For example, Baltic 21 was the first initiative in the Baltic to adopt common regional goals for sustainable development in response to Agenda 21. In the South Pacific, the Pacific Islands Regional Oceans Policy (PIROP) was endorsed at the World Summit on Sustainable Development (WSSD).

Likewise, the adoption of the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) by 12 East Asian nations in 2003 focused action on programs espousing the principles of Agenda 21, other international environmental instruments, and the WSSD. SDS-SEA guides the implementation of interventions on biodiversity, ecosystem function, fisheries, small islands, and cross-sectoral issues such as marine pollution.

You may inform the participants that the UNCLOS, Chapter 17 of Agenda 21, and the SDGs can be downloaded from the internet. These documents can help them to more clearly understand how these policy instruments set the direction on how countries or states should protect and manage the marine and coastal environment.

Table 3.1 National Coastal and Ocean Policies, Strategies and Action Plans

Cambodia	✓ Draft Environment Code (2018) ✓ Circular No. 1 on the Development of Coastal Areas of the Kingdom of Cambodia (February 2012) ✓ Shoreline Management Strategy (2008)
Indonesia	✓ Indonesian Ocean Policy (2017) ✓ National Maritime Law No. 32/2014
Japan	✓ Basic Ocean Law (2013) ✓ Basic Policy on Conservation and Management of Islands for Ocean Management (2009)
Lao PDR	✓ Water Law (2017) ✓ National Water Resource Strategy and Water Resources Action Plan implemented for the management of river basins
Philippines	✓ Philippine Development Plan 2017-2022 (2017) ✓ ICM Bill (Senate Bill No. 423 and House Bill 5672) undergoing review by the 17th Congress ✓ Executive Order 533 ICM as National Strategy to Sustainable Development of Coastal and Marine Environment (2006)
Singapore	✓ Lively and Livable Singapore: Strategies for Sustainable Growth (including ocean and coastal aspects) refreshed as SSB 2015 ✓ Integrated Urban Coastal Management (IUCM) 2009 ✓ National Biodiversity Strategy and Action Plan (2009) ✓ Maritime Singapore Green Initiative (2011)
Thailand	✓ Draft National Maritime Security Strategy ✓ National Act on Promotion of Marine and Coastal Resources Management (B.E. 2558/2015)
Timor-Leste	✓ National Oceans Policy (NOP) developed and to be reviewed
Vietnam	✓ Law on Natural Resources and Environment of Sea and Island (2015) ✓ ICM Circular (No. 49/2017/TT-BTNMT) approved by MONRE (2017)

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At the national level in East Asia, aside from the development of a National Agenda 21, countries like Cambodia, China, Indonesia, Japan, Philippines, RO Korea, Singapore, Thailand, and Vietnam had followed suit with the development and adoption of national coastal and ocean policies and strategies (**Table 3.1**).	
For example, in the Philippines, Executive Order 533 of 2006 adopted ICM as a national strategy for the sustainable development of coastal and marine environment. The Philippine Development Plan 2017-2022 (PDP) was approved by the National Economic and Development Authority (NEDA) Board on 20 February 2017. All components of the SDS-SEA Implementation Plan 2017-2022 are mainstreamed into the PDP. Japan, meanwhile, enacted a Basic Act on Ocean Policy in 2008 and revised it in 2013. As part of the implementation of the said Basic Act on Ocean Policy, the Headquarters for Ocean Policy was established in the Cabinet, comprising of different ocean related ministries and agencies. Indonesia adopted its National Ocean Policy in 2014, and Lao PDR's Water Law was approved by the National Assembly in May 2017. In Thailand, the National Act on Promotion of Marine and Coastal Resources Management was adopted in 2015 and the National Marine and Coastal Resource Strategy prepared.	
While policies set the direction for action, strategies and plans make such direction more concrete. In East Asia, where coastal governance is complicated by the multiplicity and high intensity of uses, heavy population pressure, and	Show **Table 3.1** National Coastal and Ocean Policies, Strategies, and Action Plans.

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conflicting political, organizational, and sectoral interests, the usual interim regulatory measures to address management issues have proven to be inadequate and in the long run, usually ineffective.

To counteract this problem, ICM managers and local/national leaders have come to realize that one of their initial objectives must be to bring stakeholders together for shared values, vision, and targets as guided by international and national prescriptions and best practices from ICM local initiatives. This usually takes the form of a Coastal Strategy (CS). A more detailed discussion on CS is given in **Module 6** (Initiating an ICM Program).

Institutional Arrangements

Show published coastal strategies (e.g., Coastal Strategy for the Southeastern Coast of Bali, The Bataan Coastal Strategy, The Chonburi Coastal Strategy, Coastal Strategy of Danang City, Coastal strategy of Nampho City, Democratic People's Republic of Korea, and Port Klang Coastal Strategy).

Management strategies concerning resource utilization, conservation, and protection can only be effective if they are implemented within an appropriate legal framework. Government involvement is therefore essential for ICM. ICM plans without the concurrence of the government are difficult to implement.

An ICM program is often challenged by existing institutional set ups. Moreover, there are diverse stakeholders involved, which at times have competing interests. It is therefore necessary to have genuine consultation processes to arrive at the most suitable institutional arrangement for a given political socioeconomic situation. An effective institutional arrangement is facilitated by the enactment of appropriate legislation.

A functional coordinating body or mechanism is essential in the implementation of an ICM program. Chua (2006) argues that because of the absence of a legitimate institutional homebase for ICM with its cross-cutting concerns, *"the establishment and operation of coordinating mechanisms represents a significant achievement in the history of managing transboundary environmental and natural resource concerns."*

The advantages of establishing and institutionalizing a functional coordinating mechanism are the following:

a. It harmonizes overlapping institutional responsibilities, as well as the competing interests of the various stakeholders.
b. It identifies the gaps in mandates and responsibilities and ensures that the policies and management interventions are integrated in a cohesive manner.
c. More specifically, it provides policy direction and coordinates interagency and multistakeholder involvement in implementing an ICM program.

Legislation

Legislation refers broadly to laws being passed by lawmaking bodies at appropriate levels of governance.

In the context of ICM, legislation involves developing and implementing national and local laws, which support new and existing policies that facilitate the effective implementation of an ICM program. Creating an adequate legal framework for an ICM program is a challenge because of the complex jurisdictional setting under which it operates (Cicin-Sain and Knecht, 1998).

Table 3.2 Incorporating Public Education Programs into the ICM Process

When to implement public education and communication campaigns		Examples of Information and Public Awareness Strategies
Preparing	Initial information drive: • Introduce ICM concepts and practice • Identify stakeholders • Organize consultative meetings	• Use of video materials on coastal and marine environment during consultative meetings as background materials on the benefits of ICM • Putting up posters around communities and venues where consultation will be done to initially orient people • Dissemination of flyers/materials to the general public about ICM (e.g., Policy Brief on Integrated Coastal Management, Revitalizing the Coasts and Oceans Program in the Philippines)
Initiating	Communication plan, public education, and communication programs: • Launch initial public awareness activities • Undertake stakeholder analysis • Consultative process for coastal strategy, environmental profile, initial risk assessment	• Public awareness campaigns that target the general public through billboards on marine/coastal environment, dissemination of flyers/brochures, and/or use of audiovisual (AV) materials to capture audience attention • Direct involvement of stakeholders in the development of coastal strategy, environmental profiling, and initial risk assessment
Developing	Consultation and feedback: • Implement specific public awareness activities • Promote action plan and coastal strategy • Facilitate participatory research on public perceptions, contingency valuations • Promote public-private commitment/investment	• Direct involvement/participation of relevant stakeholders in research activities • Publication and dissemination of research results (e.g., through policy briefs, brochures and/or website) • Presentation of results to stakeholders, particularly policymakers and private institutions during formal and informal discussions and meetings to gain support for addressing priority issues and concerns • "Popularization" of research results and priority issues (i.e., simplified and put into formats that can be used by the general public) and dissemination to the general public through AV materials and other media available in the site
Adopting	Facilitation of acceptance and adoption of Coastal Strategy Implementation Plan (CSIP)	• Publication and/or dissemination of CSIP • Adoption ceremony can be done through a program near the beach (if possible), culminating in a beach cleanup or any related activity
Implementing	Facilitation of acceptance and involvement in the implementation of the Coastal Strategy	Involving stakeholders in beach cleanups, mangrove rehabilitation, and recycling initiatives
Refining and Consolidating	Evaluation of public awareness and participation: • Modification and changes for the next cycle	Measurement of the success of the information and public awareness campaigns through surveys, interviews, and direct observation to adjust specific programs

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Appropriate legislation facilitates the introduction of change, highlights the significance of measures, and gives these measures relative permanence. In the context of an ICM program, it provides legitimacy to ICM action programs, becomes a basis for enforcing compliance, and serves as a guide for sustaining the initiatives.

The basic rule about legislation is that it is valid only within the scope of the powers of the lawmaking body that issued it. Thus, if a subnational lawmaking body wishes to enact a legislation, it must ensure that the legislation is within its mandated powers. In this regard, the law to be enacted should not violate or be in conflict with any existing laws at the national level.

Show an example of a national or local legislation that provides the legal framework for an ICM program.

Ask the participants to identify the key elements of the legislation.

Legislation plays an important part in the implementation of international conventions and other instruments. Ideally, the various instruments should be implemented through a national coastal and/or marine policy, which establishes a cross-sectoral framework. Such a policy would provide the guidance on the courses of action that the subnational or local governments have to take in managing their coastal and marine environments.

Information and Public Awareness

Creating a broad spectrum of support requires that stakeholders — from policymakers, planners, managers, to the public at large — understand and recognize the benefits of ICM. In this regard, effective information and public awareness campaigns are necessary to improve trust, confidence, and appreciation of the processes and importance of ICM. Such campaigns should be aimed at creating or reinforcing knowledge, influencing attitudes and behaviors, and refuting the myths and misconceptions on the immediate- and long-term benefits of ICM. An effective information, education, and communication (IEC) campaign draws attention to an issue, rallies the stakeholders to change attitude, influences policy-making and management decisions, and improves enforcement of policies and laws.

With increased awareness among stakeholders, they become in a better position to make informed choices and actions. Increased stakeholder appreciation and understanding of the benefits of ICM subsequently lead to a creation of a unified vision toward sustainable coastal and marine management. If this is achieved, a sustained process of information and public awareness can prompt immediate actions and increase demands for services to protect and manage coastal and marine environments. Prompted by strong public demands, local governments should respond to the needs articulated by their own constituents by providing the necessary governance mechanisms to implement ICM in their respective localities. The sustainability of ICM programs hinges on the ability of government institutions to promote local ownership and demonstrate accountability.

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From the foregoing, the importance of the information and public awareness campaigns to become part of the overall ICM cycle and be immediately implemented becomes clear. **Table 3.2** identifies how information and public awareness is situated in the process of ICM cycle. The ICM cycle will be discussed in detail in **Module 4**.

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Sustainable Financing Sustainable financing refers to securing sufficient, stable, long-term, and self-sustaining financial resources for protecting an environmental asset or resource. It not only involves identifying financing mechanisms from various sources, but, more importantly, it also entails allocating resources in a timely manner and in an appropriate form. This means financial sustainability is not possible without strong and effective institutions for resource management. An ICM program can be initiated within the limits of the available budgets of the national and local governments, although external or augmented budgetary contribution can facilitate and enhance ICM program development. ICM programs in East Asia tend to have a higher level of success when they are institutionalized and incorporated into the development plans of local governments because this ensures budget and human resource provisions to sustain the program, as evidenced by the experiences of Xiamen and Batangas. The challenge is for financing mechanisms to utilize the governance components, including limited public sources, to help leverage additional resources from the private sector and the stakeholders. Local governments can take action to complement foreign assistance flows by attracting and generating increased private sector resources. Additionally, understanding the nature of goods and services provided in the area will guide the resource planner on how they can be managed to generate revenue. Identifying all potential sources of finance, and their use and appropriate mix in relation to incidence of benefits and costs may provide greater flexibility and more innovative means of securing resources from public and private sources.	Start the discussion on sustainable financing with a question on how to make efforts on the ground sustainable beyond project funding life span. Solicit participants' experiences on schemes or techniques in ensuring that project funds are maintained or sustained.
Capacity Development Based on the definition by the United Nations Development Programme (UNDP), capacity development is *"the process through which individuals, organizations and societies obtain, strengthen, and maintain the capabilities to set and achieve their own development objectives over time."* Effective management of coastal and marine areas remains to be a challenging task for most coastal countries especially the developing countries. The lack of technical and management capabilities to plan and implement natural resource and environmental projects is a major obstacle to such endeavor. Coastal management in particular involves working with diverse levels of stakeholder groups and requires sound knowledge of environmental factors affecting coastal areas.	

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Different categories of stakeholders ranging from policymakers, government officials, the private sector, and community are involved in various stages of the ICM cycle covering a wide range of activities, such as the following:

a. creating public awareness
b. building planning, technical, and management capacities
c. strengthening interagency and multisector partnerships
d. developing or improving institutional and legal frameworks
e. formulating and implementing programs of actions

Enriching the knowledge and experience of stakeholders can contribute to the effectiveness and efficiency of ICM program implementation.

An ICM program needs to employ strategies aimed at strengthening human resources and institutional capacities, such as the following:

a. **Study visits to successful ICM sites.** This is a good way to bring about conceptual and perception change and obtain commitment among political leaders, coastal managers, responsible senior government officials, and other relevant stakeholders in accepting the ICM approach.

b. **Actual involvement in the process of ICM program development and implementation.** This enables stakeholders to physically experience the value of the ICM framework and processes and to learn planning and management skills through on-the-ground operation.

c. **Internship and fellowship program.** This is a strategic capacity development approach to build a strong team of young professionals with specific skills in environmental management and sustainable coastal development.

d. **Specialized training to support the technical skills requirement of ICM programs**

e. **Forming a network of ICM experts.** This is a strategic approach to enhance interdisciplinary collaboration in terms of knowledge sharing and information exchange.

Sustainable Development Aspects

The five major sustainable development (SD) aspects — hazard, habitat, water, food, and pollution — represent the common concerns of all local governments and communities in any given coastal area, irrespective of geographical location.

Strategic action programs have to be developed for each of these aspects, the effective implementation of which would rely on the following:

1. Existence of a clear set of objectives, reasonable targets, and actions that are supported by appropriate technologies and methods

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2. Enabling conditions are in place (i.e., the governance elements — policy, institutional arrangement, supporting laws, financing, stakeholder awareness and participation, capacity)

The ability to address these aspects of sustainable development, together with the appropriate integration of respective policy and functions of line agencies as well as the support of the stakeholders and the public, leads to many benefits. These include:

a. resolution of multiple use conflicts
b. improvement and preservation of environmental quality and biodiversity
c. effective response to climate change
d. conservation of water resources and effective water supply services
e. improvement of the standard and quality of living through eradication of poverty and improvement of food security measures

These aspects are discussed in more detail below.

Natural and man-made hazard prevention and management

Many countries have their own disaster management strategies or response systems, which are mostly coordinated at the national level. However, as experienced in many developing nations, response to natural or man-made disasters are usually much delayed and more often than not, poorly coordinated.

The 2006 oil spill incident in Guimaras Province (Philippines) reflected a delay in oil spill response and a complete chaos in interagency coordination, leaving the local government with no clear direction for remedial actions (CBS News, 2006; WWF-UK, 2006). An ICM program should support and guide the local government in the development of a comprehensive and integrated natural and man-made disaster response and management program so that it can pool available resources to address common threats irrespective of institutional mandates.

With the predicted temperature rise of between 1.8ºC and 4ºC and sea level rise of between 0.2 m and 0.6 m under global warming (IPCC, 2007), the local government should assess its level of vulnerability and undertake adaptive measures to increase social and ecosystem resilience. This should adequately prepare itself not only for the effects of global warming, but also for any natural or human-made disasters. This is a main objective of the ICM system —– to improve the capacity of the local government and its stakeholders to respond to such disasters. While coordination with the national authority is deemed necessary, local governments should take the initiative in preparing for such occurrences while maintaining close coordination with the concerned agencies.

Habitat protection, restoration and management

The local government unit (LGU) should also play a stronger role in the protection, restoration, and management of habitats and the preservation of cultural heritage within its administrative boundary. As part of the ICM program, local governments should develop a comprehensive and coordinated program on habitat management that integrates existing efforts on the issue such as the conservation of marine protected areas (MPAs), mangrove and seagrass replanting, and

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others. In countries where the central government plays a pivotal role in the management of MPAs or cultural heritage sites, local governments should work closely with the central government, particularly as they are the immediate beneficiary when these areas are better preserved.

Water use and supply management

With rapid coastal urbanization, freshwater shortage could have serious negative impacts on existing and new coastal cities in the region. The standard of water management in most urban cities in developing nations is far from desired level. Many countries in and outside the region do not have safe drinking water. Most people depend on bottled water for their daily needs. Groundwater extraction has been rampant in many countries in the region; where control by government has been made, the pricing is far lower than that of tap water, thus encouraging further extraction especially by the industries. Land subsidence often occurs and in some cases, saltwater intrusion has contaminated the freshwater aquifers and affected crop production.

Managing water use and supply as well as water resource quality has become an inseparable part of sustainable development. Water management must form a major consideration in town and country planning especially with the projected increase in urban population.

Food security and livelihood management

The coasts and oceans have served as the primary source of food and livelihood for the majority of the approximately 2 billion people living along the coasts of East Asia. Despite the rapid economic development in the region, such as in China and Vietnam where the GDP growth has been maintained at a fairly high level of about 10 percent per year, there are still a substantial number of people in the region earning only US$ 1/day. While the coastal population in most countries is relatively better off economically than its counterpart inland, there are still a substantial number of poor among the coastal population, including marginal fisherfolks who depend on subsistence fishing for their livelihood.

Fish is an important source of protein in the region, where per capita consumption of this food resource is among the highest in the world. The region contributes about 40 percent of the world's fish capture production and more than 80 percent of the world's aquaculture production. A large part of fish production is consumed locally. Fisheries and aquaculture therefore play a significant role in the region's food security.

As coastal areas become more urbanized, the role of fisheries diminishes due to competition for limited water space. Thus, the role of fisheries needs to be reassessed in urban versus rural areas. Fisheries-based livelihood may be displaced as a result of this urbanization and as such, it is essential to ensure that alternative livelihoods are in place. A comprehensive sustainable fisheries management plan needs to be developed following the FAO Code of Conduct for Responsible Fisheries (FAO, 1997). The plan should take into consideration the sustainable use of other marine living resources and the ecosystems that produce them.

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Pollution reduction and waste management

Pollution is one of the major challenges in coastal governance. Most of the pollutants come from land-based sources, including industries, households, and agriculture. A comparatively lesser amount come from ships and sea exploration and harvesting activities. Pollution of the coastal waters is rather serious in many nations of the world, particularly those in East Asia, because of the high human population. All local governments have to address such issues, among others, as sewage, solid waste, and hazardous wastes treatment and disposal; agricultural run-off; and introduction of exotic species. To a large extent, air pollution in coastal areas is closely related to fuel emissions from cars and industries and uncontrolled burning of wastes. Air and water quality management forms an important part of sustainable coastal city development; hence, a corresponding plan should be developed and adopted by local governments.

Most line agencies at the national or local levels are already doing some of the aspects described above. However, the strength of ICM lies in the coordination of the delivery of these programs such that they become mutually reinforcing and cost- effective. An ICM program should not be seen as competing with the line agencies or other programs for resources, but as one that can add value and even resources to enhance the work of these line agencies/programs. In essence, the role of ICM is to facilitate the integration of various line agencies in undertaking the key component programs.

Learning Activity 6

Ask the participants to list specific programs and projects implemented in their respective areas. Categorize them according the five major SD aspects. Identify the agencies implementing such programs and projects.

ICM Program Development and Implementation Cycle

The ICM program development and implementation cycle is a process that allows a stage-wise development of the policy direction and management interventions of an ICM program. A detailed discussion on the ICM Cycle is presented.

Ask a volunteer to present his/her output. During the discussion, highlight the role of ICM in coordinating the implementation of these programs/projects.

SOC Reporting

The SOC is an integrated and comprehensive approach that documents the current status of marine and coastal resources, including the policy and management interventions being undertaken in a given area to address environmental issues.

It serves as a scorecard with respect to meeting international and regional agreements. It is a tool that may help provide up-to-date baseline information pertaining to the demographic and socioeconomic conditions of a given coastal area (province/state/prefecture, regency/municipality, district/ county, villages). It also provides information on the outputs of activities related to the governance by the local authority, including the existence of coastal or ocean policy, sectoral policies, coordinating mechanism, relevant legislation, financing, public consultation processes, and capacity development efforts.

The SOC provides an opportunity for the local government to identify issues and concerns that need immediate action, the outputs and outcomes of which will be assessed during the next reporting cycle.

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The usefulness of the SOC lies on the fact that the information contained therein is cumulative over all phases and continuously enriched through each reporting cycle.

ICM Code

The ICM Code incorporates the essential management elements of two international standards in Environmental Management and Quality Management:ISO 14001:2004 and ISO 9001:2008. Through the ICM Code, local governments implementing ICM can strengthen their environmental management systems and quality management systems. The Code effectively transforms ICM from a loosely coordinated, poorly documented, and highly experience-dependent management approach to a process-oriented, well- documented, and institutionalized ICM system.

The ICM Code provides the standard in developing and implementing an ICM program by matching the requirements of the governance component of the program with the ISO 9001 quality management framework, and the requirements to plan, coordinate, implement, assess, and continually improve management programs that address the sustainable development aspects with the ISO 14001 environmental management framework.

The Code therefore enables local governments to develop and implement an ICM in accordance to standard planning and management frameworks and a set of procedures in streamlining and integrating policy, strategies, and resources for undertaking specific action programs.

The ICM Code also specifies the basic requirements of an ICM program and provides the basis for auditing and evaluating program progress.

Policy and Functional Integration

As discussed in the previous module, policy integration ensures that national and local government policies and economic development plans are consistent with one another.

On the other hand, functional integration is concerned with internal consistency among the various ICM management actions. This means that concerned agencies should strive for collaboration and partnership to ensure that their management efforts do not duplicate one another, but complement each other instead.

Partnerships

In the context of ICM, partnership is defined as a relationship between two or more entities to collectively undertake an activity or activities to achieve a common goal or vision, but that these entities are not bound by any legal agreements. Partnership would involve the government, private sector, academe, and people's organization, among others. A good partnership program is built upon the strength of each partner in terms of resources, expertise, and skills.

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Partnerships in ICM are often built on a common or shared vision as to the strategic use of the goods and services provided by the coastal and marine ecosystems. For these partnerships to be effective, the responsibilities of each partner must be clearly defined, including involvement in particular activities to ensure delivery of specific products. In this regard, each partner must accept that the outputs and commitments will be measured.

Scientific/Expert Advice

In ICM, decisions should be based on sound science. Scientific inputs are imperative to the ICM program's success, and the best way to obtain these needed scientific support and information is to involve research institutions and universities in the various activities of the program.

The best way to obtain the needed scientific support and information is to involve research institutions and universities in various ICM program activities. In 2015, the PEMSEA Network of Learning Centers (PNLC) was established to tap the leading universities and research institutions in providing technical support and training assistance as on the ground capacity development strategy.

Synthesis

After nearly four decades, ICM practice has grown and evolved to what it is today. However, to become more relevant, ICM practice still needs to incorporate mechanisms that can "complete" the process. Many inherent aspects of ICM practices, from governance to strategic action programme implementation, have to be standardized or codified so that outputs and outcomes can be more predictable and measurable. As such, monitoring and evaluation, which were inadequately addressed in past ICM practices, can be strengthened and the role of ICM in bringing about positive changes in coastal areas can be more clearly and quantitatively demonstrated. The SDCA Framework is envisioned to provide the reference for such changes. As coastal management is more and more streamlined and mainstreamed into the ICM practice by following the SDCA Framework, the possibility to achieve sustainable development at a faster rate becomes greater.

Assessment

Participants should be able to enumerate the components of the process-oriented common framework for sustainable development of coastal areas through ICM implementation and explain the importance of each element to an ICM initiative.

Facilitate a discussion-cum-assessment of the elements of the SDCA Framework. Identify an element and ask a participant to explain why he/she thinks it is important to the success of the ICM initiative.

After this, get feedback from the participants by asking them if they feel that the module objectives have been adequately accomplished.

Unit II

ICM Program Development and Implementation

Unit II will provide the participants with an overview of the ICM cycle (Module 4), followed by more in-depth discussions of the individual stages of the cycle (Modules 5–10). It will help the participants gain better understanding and appreciation of the process-driven and holistic nature of the cycle as well as the requirements for each stage.

The first stage of the ICM Cycle, the Preparing Stage, will be discussed in more depth not only to give the participants a general understanding of ICM but also to help them prepare for ICM program development. It is the intention of this unit to provide the participants with information and exercises to aid them in jumpstarting the development of ICM programs in their own areas, as well as in identifying gaps in the preparation of their ICM programs.

Module 4

ICM Development and Implementation Cycle

Description

This unit provides an overview of the ICM development and implementation cycle and its six stages: (1) preparation; (2) initiation; (3) development; (4) adoption; (5) implementation; and (6) refinement and consolidation.

The process-oriented nature of the cycle is highlighted, as well as the importance of linkages among the activities in its stages to effectively develop and implement an ICM program.

Duration: **2 hours**

Materials

- **Video 2** Future of Our Coasts
- **Video 3** Monsoon Tale
- **Optional video** The Xiamen Story
- **ICM Case Study** Xiamen: An ICM Journey
- **ICM Case Study** Securing the Future through ICM: The Case of the Batangas Bay Region

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Learning Outcomes

At the end of this module, the participants will be able to do the following:

1. Explain the factors that may determine or trigger the initiation of an ICM program
2. Enumerate the key stages in developing and implementing an ICM program
3. Analyze and identify the factors contributing to the success or effective implementation of an ICM program
4. Discuss potential barriers to ICM program development and implementation and how these can be minimized

Greet the participants and present the module objectives. Use a permanent visual for the objectives (e.g., manila paper posted on the wall). Also keep a copy of the SDCA Framework posted on the wall.

Remind the participants that at the end of the ICM training, they are expected to be already capable of planning and initiating an ICM program. Hence, as they go through the training, they should endeavor to relate to their local context and future ICM implementation the information they gain.

Review

An ICM program is designed to achieve a series of socioeconomic and ecological objectives toward the sustainable development of a given coastal area. Supportive policies and other governance elements, such as those expounded in Unit 1, would facilitate the management of the program and the attainment of its objectives.

The development and operationalization of such governance elements can be facilitated by following the ICM development and implementation cycle (hereafter referred to as ICM cycle), which provides a step-wise guide for the development of the policy direction and management options of an ICM program.

Refer to the SDCA Framework; highlight the relationship of its various elements to the ICM cycle.

Emphasize that the ICM cycle provides the process for developing or strengthening the essential governance elements identified in the SDCA Framework and for putting these elements into action.

Discussion

This module will cover the following topics:

1. Triggers for ICM development and implementation
2. Steps and considerations in initiating an ICM program
3. Key stages in developing and implementing an ICM program and the importance of linkages among the activities in these stages
4. Relationship between the ICM framework and the standard policymaking and management frameworks
5. Factors for the successful and effective implementation of the ICM program
6. Potential barriers to the success of an ICM program
7. The important role of the manager of an ICM program

Learning Activity 7

Begin by showing the video documentary: Future of Our Coasts (40 minutes) or Monsoon Tale (29 minutes). Advise the participants to note the rationale for the establishment of an ICM program in the area presented, how the program was planned and executed, and the factors that contributed to their successful implementation. References to the video will be made in this module and the succeeding modules, as appropriate.

After the video show, ask the participants to identify the factors that triggered the initiation of ICM programs in the given area. Provide guidance as necessary to elicit responses. Integrate in your lecture/ discussion the relevant points raised.

What factors usually trigger the need for an ICM Program?

The need for an ICM program can be triggered by arious factors external and internal to the program.

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In many developing countries, the external factor is usually the availability and provision of funding from outside sources. International declarations like the 1992 Rio Declaration of the United Nations Conference on Environment and Development (UNCED) can also catalyze programs for coastal development not only in developing, but developed countries as well.

Internal triggers, on the other hand, are mainly related to environmental problems (e.g., degradation, depletion of resources), accidents (e.g., disease outbreak, oil spills, red tide), and multiple use conflicts experienced by the community.

National or local policymakers can also initiate ICM when they are convinced that an ICM program can give socioeconomic and ecological benefits to their areas of governance. An ICM program can also be initiated if there is a national coastal policy or ICM legislation that mandates local governments to implement ICM programs, such as the Coastal Management Act of RO Korea (1999), the legislation concerning the Management of Coastal Areas and Small Islands of Indonesia (2007), and Japan's Basic Act on Ocean Policy (2007).

An ICM program is deemed necessary when one or more of the following conditions arise:

- Serious multiple use conflicts among various sectors
- Rapid rate of depletion of natural resources and degradation of coastal environment that threaten the functional integrity of the resource systems
- Presence of significant ecological habitats/ecosystems or other resource systems with high productive potential in terms of goods and services
- Government/national demand for protection of a marine reserve of archaeological or ecological/educational importance

Make the discussion interactive by posing questions to the participants, as appropriate. Keep the interactions upbeat but focused and brief, just sufficient to get the participants' attention and facilitate consideration of the subject. Provide examples as necessary to set off the discussion.

The case study publications on ICM development and implementation in Xiamen ("Xiamen: An ICM Journey") and in Batangas ("Securing the Future through ICM: The Case of the Batangas Bay Region") may be provided for the advance reading of the participants and for use as reference in the discussion in this and the subsequent modules.

Refer to the video in discussing the conditions that can trigger the need for an ICM program. Ask the participants which of these conditions are present in their respective areas, whether appropriate management actions have been taken, and if these actions have been effective.

What are the steps and considerations in initiating an ICM program?

In response to triggers, a local government which sees the need to develop and implement an ICM program in a particular area but has no capacity to do such should undertake the following:

1. Identify ongoing initiatives at the subnational and national levels, or at the regional level if no national ICM program is in place

2. Determine the process of developing and implementing an ICM program, preferably through visits to successful ICM sites

3. Consider linkage with appropriate ICM initiatives to avoid duplication of mistakes and wastage of financial resources. Typically, whether it is a national or foreign-supported initiative, ICM is implemented by central agencies responsible for environment and natural resources management at the local level.

At the regional level, PEMSEA facilitates technical advice and/or support to national governments in developing national ICM policies and programs, and to local governments in developing and implementing ICM programs at the local level.

Before proceeding with the presentation, ask the participants what they think are the steps needed and the considerations in initiating an ICM program. You can provide guide questions but as much as possible, let them come up with their own views. Integrate in your lecture the relevant points raised.

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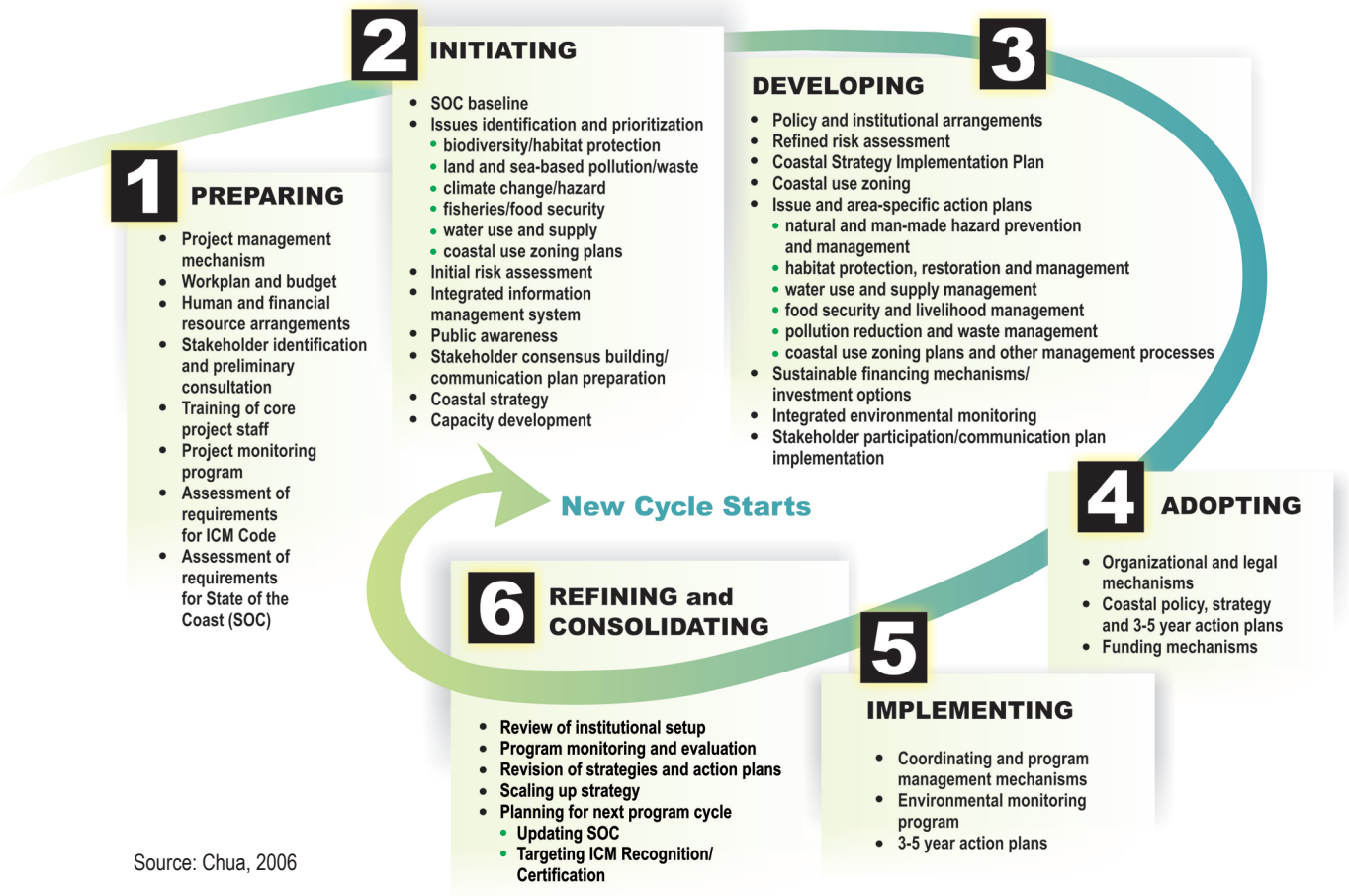
Xiamen (China) and Batangas (Philippines) are the first two areas supported by PEMSEA to serve as demonstration projects for ICM program development and implementation. Subsequent demonstration areas include Danang (Vietnam), Bali (Indonesia), Chonburi (Thailand), Sihanoukville (Cambodia), Nampho (DPR Korea), and Port Klang (Malaysia). These areas were established to test and demonstrate the implementation of the ICM framework and process in different geographic, administrative, and political settings. Best practices from these sites have been applied in replicating ICM in other coastal areas. PEMSEA continues to facilitate technical advice/support on ICM scaling up/replication.

What are the key stages in the development and implementation of an ICM program and what are the activities entailed in each stage?

Figure 4.1 presents the ICM cycle. This cycle is a set of easily understood processes that allows for an stage-wise development and management of an ICM program. The cycle has evolved from the actual experiences of PEMSEA in managing ICM efforts in East Asia and from experiences of other ICM efforts in different countries.

Show an enlarged **Figure 4.1** showing the ICM cycle. Keep this posted on the wall for easy reference during the discussion and recall by participants.

Figure 4.1 The ICM Development and Implementation Cycle. The cycle provides a systematic, procedural, and iterative approach in identifying and prioritizing environmental concerns and in planning, approving, implementing, and monitoring cost-effective policy and management interventions.



Source: Chua, 2006

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The six basic stages in the ICM cycle are the following: 1. Preparation 2. Initiation 3. Development 4. Adoption 5. Implementation 6. Refinement and consolidation The ICM cycle presents the essential activities and/or outputs that need to be conducted/completed before moving on to the next (e.g., coastal profiling/SOC baseline before risk assessment) activity. Some of the activities cut across all stages and may need to continue throughout the process (e.g., public awareness, capacity building, stakeholder consultation and participation, monitoring and evaluation). Each stage will be discussed only briefly in this module since each will be discussed at greater depth in the succeeding modules.	Begin by emphasizing that this is only an introductory module to the ICM cycle. Each stage will be discussed in greater depth in the succeeding six modules. Presentation of the entire cycle and the six stages at this point mainly aims to emphasize that ICM must be treated as a holistic system, starting from planning to actual implementation and monitoring of activities, that provides a process for the development and strengthening of the elements of the SDCA Framework.
Stage 1: Preparing The Preparing Stage sets in place a program management mechanism that is hinged on interagency, cross-sectoral, and multidisciplinary coordination, integration, and resource sharing. It also involves the preparation of a program work plan and budget, arrangement of human and financial resources, training on ICM of core staff to effectively implement the program, and establishment of a project monitoring and evaluation (M&E) system to monitor and measure progress and achievements. It highlights the importance of stakeholder participation throughout the entire ICM process. Preparation of the SOC report is needed for the establishment of baseline conditions, identification of issues and corresponding management actions, as well as for the monitoring and assessment of progress in achieving sustainable development targets at various levels. Application of the ICM Code, a voluntary standard for ICM recognition/certification, can promote improvement of the M&E system, and encourage local governments to further strengthen their ICM programs. The requirements for SOC reporting and the potential application of the ICM Code on a given area should be assessed as part of the Preparing Stage.	Emphasize the importance of careful and sufficient planning in the development of an ICM program, or any other program for that matter. Planning should consider existing information on best practices and lessons learned from other areas to avoid duplication of mistakes. Effective planning should facilitate the monitoring and assessment of the progress of the program. Stakeholder involvement should be established from the beginning. This will set an atmosphere of cooperation and ownership of the program.
Stage 2: Initiating In the Initiating Stage, it is essential to identify and prioritize through a vulnerability and risk assessment the environmental issues and concerns that require management intervention. An integrated information management system (IIMS) can also be set up at this stage to store relevant technical and management data and information for easy retrieval and sharing among participating agencies/ institutions. The preparation of a CS based on consultations provides stakeholders with a common vision and long-term framework of actions in developing and managing their shared coastal area. It is also essential at this stage to exert increased effort to enhance public awareness on identified priority coastal management issues and the goods and services arising from the coastal ecosystems.	Highlight that the focus of the Initiation stage is to identify and prioritize environmental concerns and identify priority actions to address these concerns. This is essential particularly in view of the typically limited budget allocations for environmental management. Outputs from this stage will be important input to the succeeding activities in the following stages.

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Stage 3: Developing The Developing Stage contributes to setting in place the major components of the governance system described in **Module 3** (i.e., CS implementation plan, policy and institutional arrangements, information and public awareness, financing mechanisms and capacity development) and to addressing the essential aspects of sustainable development identified in the SDCA Framework through the development of issue- and area-specific action plans.	Following the setting up of the project coordinating and monitoring mechanism and identifying priority concerns and actions in the earlier stages, the focus of this stage is to develop or strengthen the governance mechanisms that are necessary to address the identified environmental concerns. Refer to the SDCA Framework to show that the plans/arrangements/ mechanisms being developed are the key governance elements of this framework. Point out that the prioritized activities in the CSIP correspond to the strategic action programs of the framework. Mention that stakeholder participation and use of scientific information are integral aspects of the SDCA Framework, and point out how these are integrated within the ICM cycle.
Stage 4: Adopting What is crucial at this stage is for the local government authority to adopt the strategic environmental management plans (SEMP) /CS/CSIP, institutional and legal arrangements, and financing mechanisms for sustainable ICM program implementation. Adoption of the above plans and arrangements by the local government guarantees the following: a. Integration of the plans into the development planning framework of the local government b. Allocation of budget c. Harmonization of efforts d. Institutionalization of coordinating arrangements for the implementation of the action plans. The involvement of the public in the adoption process such as participation in consultations during the passing of local ordinances is also important.	Emphasize that the plans, arrangements, and mechanisms developed in the earlier stages are meant to be implemented and should not remain as plans. Implementation requires resources and commitment. As such, adoption of these plans by the local government and its partners/collaborators is critical.
Stage 5: Implementing This stage involves the implementation of the SEMP/CSIP and of the institutional/ legal arrangements and financial mechanisms. Here, the ICM program moves from the project development phase to project implementation. Integration of project management arrangements into the local government institutional structure through appropriate legislative procedures is done at this stage. In particular, integration of the action plans into local development plans and institutionalization of the coordinating mechanism are critical.	

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If full implementation of the plans, arrangements, and mechanisms is not yet possible, implementation can be phased depending on the available capacity and resources. What is important is to initiate the implementation to the extent possible and test their effectiveness. Initial implementation of selected action programs identified in the SEMP/CSIP may focus on activities that can provide immediate results.

As the ICM cycle is an iterative process of improvement, it is important at this stage to take stock of the progress, achievements, and challenges of the program and based on these, improve program implementation focus and approaches.

Stage 6: Refining and Consolidating

The CS and implementation plan/action plans, and the operational mechanisms (e.g., institutional set up, financial mechanism, human resources, and management capacity) may be refined and improved as a result of actual implementation and continuous feedback from stakeholders. The cyclical nature of ICM allows improvements in methodology, approaches, and actions as ICM practitioners gain experience and acquire technical expertise.

A practical and efficient M&E system, established at the onset (Stage 1), would facilitate the assessment of an ICM program's achievements and impacts, and therefore the refinement of the program's goals, approaches, and activities. Regular updating of the SOC report, the documentation process, and the M&E system would consolidate program achievements and impacts. These, in turn, would contribute to a more efficient planning and M&E of the next program cycle.

The timeframe required for developing and implementing an ICM program may vary depending on the geographical scope, severity of environmental issues, complexity of the management issues, and the institutional and financial capacity of the local government. In most instances, it may take several decades to attain the desired result. Five years, however, is sufficient to develop and implement the first ICM cycle. With experience, the project timeframe should reduce to 3–5 years, preferably coinciding with the planning cycle of the local government. A given ICM site may also need to go through several ICM cycles to realize its ultimate goal or vision.

The next program cycle begins when new action plans are formulated and implemented based on the experience and foundation established in the previous program. The new cycle should address the challenge of scaling up the ICM program with regard to the following contexts:

1. Geographic expansion of existing ICM program and/or replication of ICM in other coastal areas
2. Functional expansion of ICM with regard to management issues, including the linking of coastal management with watershed and river basin management
3. Temporal considerations as ICM needs to be integrated into the regular planning and development cycle of local governments

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How is the ICM framework related to the standard policymaking and management frameworks known to local governments? ICM embodies a framework that links the core elements of long-known policymaking and management frameworks (**Table 4.1**). The integrated policy and management elements in the ICM framework emphasize the need to flesh out the overarching policy direction of governance to achieve the sustainable development of coastal areas.	Emphasize that the ICM framework and process actually correspond to long- known policy and management frameworks. The core elements of the latter have been integrated and organized into the six core stages of the ICM cycle

Table 4.1 Key Elements of ICM Policymaking and Management Framework

Policymaking Framework	Management Framework	ICM Core Stages	Activities
Governance of sustainable development of coastal areas			
• Inception	**Inception**	**Preparing**	• Project management mechanism • Work plan and budget • Human and financial resource arrangements • Stakeholder consultation • Training of core staff
• Needs and issues analysis • Direction setting • Policy analysis • Policy formulation	**Strategic planning** Coastal Profile Coastal Strategy	**Initiating**	• Coastal profiling/SOC baseline • Issues identification and prioritization • Initial environmental risk assessment (ERA) • Stakeholder consensus-building • Public awareness raising
		Developing	• SOC • ERA • CS/CS/ SEMP • Issue- and area-specific action plans • Institutional arrangements • Financial options • Environmental monitoring • IIMS • Stakeholder participation
• Policy adoption • Policy implementation	**Implementation mechanisms** Institutional arrangement Legal framework Environmental monitoring Sustainable financing	**Adopting**	• Organizational and legal mechanisms • SEMP and action plans • Funding mechanisms
		Implementing	• Coordination and program management mechanisms • Environmental monitoring programs • Action plans
Policy monitoring and evaluation	**Monitoring and evaluation** ICM indicators ICM certification	**Monitoring and evaluation**	• Monitoring and evaluation • SOC
	Management review	**Refining and consolidation**	• Institutional setup • Revised strategies and action plans • Planning for the next program cycle

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The effective implementation of these governance elements is expected to accomplish the following:

1. Strengthen decision-making on coastal resource allocation and management
2. Put in place a system that balances the conservation and protection of coastal resources with economic development
3. Strengthen preparations for emergencies
4. Promote information dissemination, advocacy, awareness, and participation among the different stakeholders
5. Set up a system for monitoring and feedback

The ICM cycle allows coastal managers to address prioritized local and, ultimately, global environmental concerns in a holistic manner through the administration of appropriate policy and management interventions. Moreover, it provides the major planning, approval, implementing, and monitoring processes to ensure a long-term approach to implementing these interventions.

ICM is not a one-time exercise but a continuous planning and management process through successive program cycles to address unresolved as well as new issues arising from coastal development . It enables coastal managers to adopt new strategies and formulate new action plans as new prioritized environmental concerns evolve.

The PEMSEA ICM sites have shown the effectiveness of the ICM processes in the following:

1. resolving multiple use conflicts
2. improving environmental quality
3. promoting interagency cooperation
4. contributing to the attainment of international targets

By adopting a common management framework to develop and execute an ICM program, different ICM sites undertake a standard planning and implementation process following prescribed best practices.

This will contextualize the ICM core stages and their key elements/ activities within the recognized planning and management processes, and emphasize that ICM is not introducing a totally new way of doing things, but is providing a holistic framework for streamlining and strengthening the coastal management system. How to follow the ICM cycle effectively should be emphasized.

Learning Activity 8

To ensure that the ICM cycle is thoroughly understood, refer to the video presentation and let the participants identify the stages each coastal manager passed through in "orchestrating" the ICM program and their activities for each stage.

Let them recall what steps the coastal manager took at each stage to develop and implement an effective and sustainable ICM program. This will prepare them for the more in-depth discussions in the succeeding modules.

Keep **Figure 4.1** ICM cycle visible and relate their answers to the figure to facilitate understanding and recall.

Guide the participants to realize that a "generic" ICM cycle can be applicable to various locales (e.g., Xiamen and Batangas) with different environmental needs and socioeconomic-political situations.

What are the key factors to ensure the success of an ICM program?

1. Shared vision and strategy

A shared vision serves as a common platform for various stakeholders to work collectively in managing the coastal zone. A shared vision crafted by stakeholders themselves not only provides a mutual goal and impetus for concerted action, but also encourages greater participation in addressing identified priority risks and other major environmental and socioeconomic concerns in the coastal, adjacent watershed, and marine areas.

Begin the discussion again by asking the participants what they think were the factors that made the ICM program in the video effective. Then, affirm their answers by discussing the key success factors identified in this module.

Relate these factors to the key elements in the SDCA Framework.

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Guided by a shared vision, a CS developed through a process of stakeholder consultation builds partnership and strengthens commitment for the implementation of action programs. It promotes a strong sense of ownership and a good understanding of the needs and objectives of the action programs.

2. Local government commitment

The commitment and full involvement of the local government right from the earliest stages are very essential for the development and implementation of the ICM program. Some Southeast Asian countries (e.g., Indonesia, Philippines, and Thailand) have already devolved or decentralized many of the environmental and natural resources management functions to the local government. In situations where environmental and natural resources management is regulated through central agencies, the involvement of local officials must be sought as it is through their support and participation that a sense of ownership of the ICM program is develop, thereby ensuring the success and sustainability of the program.

3. Institutional arrangements

The failure to establish an institutional mechanism is one of the main reasons why ICM programs are not readily implemented although plans may have been developed.

An ICM program must have the following arrangements:

a. A legally constituted interagency or multi-sectoral coordinating and management body to oversee the development and implementation of ICM programs. Such a body is most effective when it consists of key officials of the local government and the stakeholders.

b. Operation and implementation of the ICM program should be set up within an administrative structure that facilitates interagency coordination. In some cases, the program may fall directly under the office of the mayor or governor; or under the agencies responsible for natural resources and environment management or for planning and development.

c. Notwithstanding the institutional arrangements, for ICM to be effective, it must be carried out in close association not only with the agency dealing with the environment and natural resources, but also with other policy and economic planning and management agencies.

4. Legislation

In order to facilitate the implementation of the ICM program, legal instruments that provide legitimacy to the program, support the implementation of various initiatives, and provide the basis for the participation of various institutions are essential.

At the local government level, provincial or municipal orders or ordinances are issued to support the establishment and subsequent institutionalization of the Project/Program Coordinating Committee (PCC) and Project/Program

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Management Office (PMO) and to facilitate the implementation of management interventions such as coastal use zoning, collection of environmental user fees, and prevention of polluting activities. Within their respective mandates, government agencies issue administrative orders, directives, and the like to facilitate the implementation of national and local laws that support sustainable coastal development.

As ICM introduces a new perspective of collaboration, integration, and partnerships different from that of the traditional sectoral approaches, legal instruments are valuable to facilitate the introduction and acceptance of change. In the context of ICM, conflicting and/or overlapping policies, laws, and mandates should be harmonized.

5. Availability of financial resources

The implementation and sustainability of an ICM program also depends on the availability of local resources. Lack of budget should not be used as an excuse for not implementing an ICM program. Since ICM builds on existing government and planning processes to offer an integrated coordinating framework, it could be implemented by building on and optimizing the existing human and financial resources of the local governments, agencies, and stakeholders in the area.

ICM can be implemented incrementally depending on the availability of resources as long as the process and approach are understood. Financial resources from the private sector can also be mobilized through public-private partnership arrangements.

Sustainable financing mechanism should be considered in the early phase of project initiation to allow ample time for strategizing the allocation of financial resources.

6. Public awareness

Maintaining an informed public is an effective way of ensuring stronger involvement by stakeholders, securing political and financial commitment from the government, and enhancing the moral responsibility of the business community that uses the resources in question. Public education must be a long-term and continuous activity within the ICM program.

7. Local capacity

Development of local capacity must be given high priority. From early on, local project staff and local government officials should be trained on how to plan and manage their own coastal resources rather than rely heavily on experts from national institutions or overseas. Capacity development is embedded throughout the process of ICM program development and implementation. Building a critical mass of professionals with appropriate management expertise and technical skills can facilitate ICM development, implementation, and scaling up.

8. Local ICM champion

Local leaders who are conscious of the environment and sustainable development are important allies in the initiation, development, and

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implementation of ICM programs. These leaders may be politicians, governors or mayors, heads of religious groups, business leaders, officers of government line agencies, or community leaders. There should be a deliberate effort to sustain their interest in the program and to mobilize their support to champion the cause.

9. Scientific support

Scientific support and advice are needed and should be integrated throughout the ICM cycle. This can be done by involving research institutions and experts in the activities of the ICM program and by developing the scientific capability of the local institutions to sustain the provision of scientific support. The real challenge is getting the decision-makers to value and use the technical information. Continuous involvement of these decision-makers in the planning phase of the ICM program allows for their appreciation of the importance of scientific support in sound environmental decision-making and management.

What are the potential barriers to ICM program development and implementation?

The absence of any of the key success factors described above may limit the viability and effectiveness of an ICM program. In addition, other factors such as political, sectoral, and personal interests may also influence ICM program initiation.

Ask the participants what they think are the factors that could hinder or limit ICM program development and implementation. Affirm their responses as you proceed with the discussion.

1. Political interference

Political rivalry between ruling and opposition parties, changes in local leadership and shift in political power, and personal interests of political leaders affect the choice of program area, legislation, institutional reform, financial obligations or even the continuation of existing ICM initiatives. ICM practitioners should be aware of the political climate they are working under, take full advantage of political opportunities, and effectively mobilize all positive elements to create a favorable political environment to move the ICM program forward.

2. Resistance from line agencies

Line agencies' fear of losing their traditional legal authority, mandates, and human and financial resources can create resistance to the concept and practice of ICM. Line agencies may be suspicious of outside intrusion into their jurisdictional boundaries. ICM practitioners should promote the value that coordination and integration add to the efforts of sectoral agencies. A coordinating mechanism with a strong and authoritative power base, such as the office of the mayor or governor, could facilitate cooperation among the line agencies. This is because this office can implement its normal functions and at the same time undertake cross-agency activities such as the implementation of zonation schemes, legislative proceedings, public hearings, and community mobilization. A relatively neutral agency such as an economic planning and development department or at least an environmental department may also be selected to lead the implementation process.

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3. Resistance from scientists

Many scientists have no practical experience in integrated environmental and natural resource management. They tend to turn the project into a research or survey program if they are asked to formulate the program. Moreover, many scientists do not consider themselves capable of doing management functions, and many have to learn how to interact and communicate with decision-makers, environmental managers, and other stakeholders. However, their involvement is essential in providing the scientific basis for management interventions, and therefore should always be sought.

4. Resistance from industries

Some polluting industries are resistant to ICM programs for fear of having to deal with strict environmental management control. This may result in their physical transfer to other sites or incurring of higher waste treatment costs. Such resistance should be expected and considered in program initiation.

ICM programs are relatively new to most developing countries; hence, not many people understand the program's concept, functions, and operational details. Needless to say, resistance to such programs is expected. It is thus important to identify in the initial site assessment possible areas of resistance and interference so that response strategies can be identified during the ICM program formulation.

What is the crucial role of the coastal manager in ICM program development and implementation?

The challenge to deal with the socioeconomic and political factors and institutional bureaucracies; coordinate and integrate human, technical, and financial resources; and direct the ICM program operation rests on the ICM manager.

An ICM manager is very much like the conductor of a symphony orchestra. The conductor's knowledge about various musical instruments, skills in using them, and experience in theater determine the ultimate quality of the symphony.

Similarly, a good coastal manager is guided by the essential sustainable development principles of ICM and his/her knowledge of and experience in using ICM tools and approaches at the various stages of the ICM cycle.

The quality of the performance of an ICM program thus depends not only on the capability of the team, but also largely on the personal flair and "intuition" of the coastal manager. The cycle offers the coastal manager a set of easily understood processes that will guide him/her in "orchestrating" the ICM program.

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Synthesis The implementation of an ICM program may be triggered by various factors external and internal to an area, such as donor support or global commitments, environmental problems and policy/management initiatives. Prior to initiating an ICM program, a site should be assessed to determine its suitability for ICM program implementation and its local government's willingness to commit human and financial resource for the program. The ICM cycle provides a step-wise guide to undertaking an ICM program through a six-stage cyclical process. The process has activities that are dynamically linked and aimed at enhancing the coordination, integration, and cost-effectiveness of many diverse projects. Key outcomes of the ICM process include the setting of key governance elements for sustainable development through environmental/ecological sustainability. Each iteration of the cycle leads to refinement and strengthening of the ICM program implementation. The success of ICM program development and implementation depends on local government commitment, shared vision and strategy, institutional arrangements, allocation of local resources, public awareness and participation, local capacity building, involvement of technical experts, and consistent support from an ICM "champion." From the outset, potential constraints to the initiation of the ICM program should be identified so these can be considered in formulating the program strategies and work plan. A knowledgeable and capable ICM manager is necessary in order to effectively coordinate the ICM program and integrate a wide range of actions to facilitate a logical and synergistic strengthening of the program as it develops. **Assessment** Participants should be able to understand and discuss the various stages of the ICM cycle and their application, and the factors contributing to the success and failure of ICM programs.	Close the discussion in this module by summarizing the six stages of the ICM cycle and their associated activities, and letting the participants identify which of the activities are essential and which can be undertaken later if there are budgetary constraints. Also, summarize the various factors facilitating and hindering the implementation of ICM programs. Emphasize that the ICM cycle stages will be discussed in more detail in the succeeding modules. Note: If not given yet, it may be timely now to provide the participants the case study of Xiamen and Batangas as reading materials, which they will use for the rest of the unit. The reading materials will complement the video in providing hard facts and data so the participants can better appreciate the "success" stories of these two ICM programs. Based on the lessons learned from these examples, it will be easier for them later to list the specific steps and activities that they will prepare for an ICM initiative in their country.

Module 5

Stage 1: Preparing an ICM Program

Description

This module discusses the basics of preparing an ICM program, including the conduct of a preliminary assessment to determine site conditions and needs. It highlights the need for a project management mechanism, government and private sector involvement and stakeholder consensus and participation in program planning, resource arrangements and capacity building. It also highlights the importance of a monitoring and evaluation (M&E) system throughout the ICM cycle. The module also emphasizes the importance of preparing the concerned project personnel as well as the key stakeholders to undertake such initiatives.

Duration: **2 hours**

Materials

- **Handout 4.1** Cavite ICM Program Work Plan
- **Handout 4.2** Bataan ICM Program Work Plan

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Learning Outcomes

At the end of this module, the participants will be able to do the following:

1. Outline the considerations for site assessment in preparation for the ICM program development
2. List the major activities and outputs in the preparing stage of the ICM cycle
3. Discuss the importance of and the activities involved in setting up a project management mechanism for implementing an ICM program
4. Explain the process of and considerations in determining the geographic scope of an ICM program
5. Discuss the importance of an IEC campaign/program
6. Discuss how stakeholder participation in ICM program development and implementation can be encouraged
7. Explain the process of program and budget development and approval by relevant authorities
8. Enumerate some training or capability building programs that can be conducted for the local staff and coastal managers
9. Discuss the importance and process of M&E for documenting progress and experiences, which shall serve as basis for the refinement and replication of the ICM program

Greet the participants and post the module objectives on a wall to make learning more focused.

Give the participants an outline of the module's discussion so they can follow along easier.

Post the figure of the ICM cycle (**Figure 4.1** of the previous module) on the wall. Highlight the Preparing Stage so the participants focus on this part and on the activities involved in this stage.

Review

Module 4 provided an overview of the stages and activities in the ICM cycle. This module discusses in more detail the first of this stage, the Preparing Stage.

Discussion

The discussion will cover key outputs and tasks in the Preparing Stage and is outlined as follows:

1. Summary of the outputs and tasks in the preparing stage of the ICM cycle
2. Conduct of an initial site assessment in order to determine baseline conditions and needs, and commitments for ICM development and implementation
3. Establishment of the ICM program coordinating mechanism consisting of the following:
   a. ICM PMO
   b. Interagency Coordinating Mechanism
   c. Technical Advisory Group
4. Development and approval of the project work plan and budget following these steps:
   a. Delineation of the ICM management boundary
   b. Preparation of the work plan and budget and arranging of human and financial resources
   c. Approval by relevant authorities
5. Facilitation of stakeholder participation
6. Capacity development and training of core staff
7. Establishment of a project M&E system / measurement of ICM program

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What are the expected outputs and tasks in the preparing stage of the ICM cycle?

This stage sets in place the following:

1. Project management mechanism
2. Work plan and budget, including human and financial resource arrangements
3. Stakeholder identification and preliminary consultation
4. Training of core project staff
5. Project M&E system/program

What is the importance of conducting an initial site assessment and what information does it generate?

In order to guide the preparations for ICM program development, an initial scoping of the proposed ICM site needs to be undertaken to determine the existing conditions in the area, as well as the capacities and commitments of the concerned local governments with respect to ICM development and implementation.

The site scoping should be conducted by a technical team in collaboration with the local government and relevant stakeholders. The scoping team should include skilled individuals with experience and capacity in ICM planning and development, as well as expertise in environmental and resource management, covering aspects relevant to the site including biodiversity conservation, habitat protection and restoration, sustainable fisheries, livelihood development, water supply use and conservation, pollution reduction, waste management, disaster risk reduction and management, and climate change adaptation.

The process of stakeholder consultation and site evaluation should generate the following information:

1. Geographic location of the proposed ICM area, including jurisdictional overlaps and issues, if any; and key demographic, socio-economic and ecological information relevant to ICM development and implementation
2. Existing governance mechanisms for managing the marine and coastal resources in the area, including institutional arrangements, policies, strategies and plans, relevant legislations, financial and human resources, capacity of local managers and staff, available technical/scientific support, and monitoring and reporting systems
3. Baseline information/data on priority issues/ aspects affecting the sustainable development of marine and coastal areas, and status of the relevant management programs
4. Major issues, strengths, weaknesses, opportunities, and threats regarding ICM project development and implementation
5. Initial recommendations on appropriate policy and management interventions
6. Possible areas of convergence or cooperation with other programs/projects and available resources
7. Commitment of the local government to ICM program development and implementation in terms of the allocation of human, financial, and material resources

Learning Activity 9

1. Ask the participants to identify the line agencies involved in the various aspects of marine and coastal management. List these on the board.

2. Ask if they think the existing sectoral arrangement is adequate for the effective and sustainable management of their coastal and marine areas. Let each of them take a stand (i.e., yes or no) through raising of hands or ask them individually.

3. Divide the participants into two groups, each representing the affirmative (Yes) and the negative (No) side. Give them 10 minutes to further discuss their responses. Provide facilitators for each group discussion.

   a. For those who said "No," ask them to provide reasons why they think the sectoral arrangement is not effective. Let them identify specific examples and provide recommendations to address issues related to the sectoral approach.

   b. For those who said "Yes," ask them to justify and provide advantages of the sectoral approach and give examples where this approach is effective.

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8. Appropriate implementing arrangements for ICM program development and implementation, and key participating institutions and stakeholders
9. Action plan for undertaking the major activities in the preparing stage of the ICM cycle

The results of the scoping process will provide critical inputs in the planning process, particularly in the delineation of activities to be undertaken at the site, the appropriate coordination and management mechanisms, and the necessary agreement/s among stakeholders in accordance with national laws and regulations.

PEMSEA has developed a scoping guide/ template that can be customized as needed according to site conditions.

What is the rationale for setting up a project management mechanism?

A great challenge of ICM is to maintain harmony among agencies, institutions, and sectors with respect to their coastal and ocean management responsibilities, activities, and interests; and to get them to work toward common objectives. This is very difficult as, oftentimes, separate government institutions are guided by different, and sometimes, contradictory mandates, laws, and agenda (e.g., environmental and resource preservation/protection vs. uses and exploitation). In most instances, various line agencies concerned with the environment, fisheries, forestry, tourism, planning, mining, and trade are all involved in various capacities in coastal management.

Since there is no legitimate "institutional home base" for ICM with a cross-agency coordinating function for coastal and ocean governance, ICM programs should be set up with an administrative structure that facilitates interagency and multi-sectoral coordination. Project management mechanism establishment involves identification of a key government office as PMO that will coordinate the formulation and implementation of the ICM program as well as the creation of high-level interagency, multi-sector coordinating mechanism. Through the setting up of the project management mechanism, key project staff can be identified and their working relationship with other government agencies and departments can be clarified.

ICM program coordination mechanism

Establishment of the interagency and multisectoral coordination mechanism for an ICM program involves the following activities:

a. Setting up a PMO
b. Identifying project staff
c. Establishing a multi-agency and cross-sectoral PCC
d. Preparing a project work plan and budget
e. Forming a technical working/advisory group
f. Clarifying working relationships with the local government

4. Provide 10 minutes each for group presentation and discussion.

   a. Let the affirmative group present first. Recognize that in some areas, the sectoral approach is considered to be effective. Cite Japan as an example, where line agencies are so efficient that the sectoral approach is thought to be working well and that there is no need for integration. Then ask them if there are any environmental issues in the areas mentioned (where sectoral approach is effective). Proceed to ask about possible causes, including those related to coastal governance and institutional arrangements. Going back to the example of Japan, point out that if existing arrangements are effective, why is there still a need to rehabilitate bodies of water that are suffering from pollution and degradation? If you are familiar with the areas mentioned by the participants, identify similar cases.

   b. Let the negative group present next. Note the points raised and relate them to any of the following issues: lack of technical capacity, lack of funds, and interagency conflicts due to overlapping/ conflicting policies and mandates.

   Ensure that the discussion does not get contentious. Remind participants that they are coming from different local contexts and are expected to have different experiences and judgments on the issue.

5. Proceed to explain recognized issues associated with the sectoral approach and the need for multiagency and cross-sectoral integration and coordination, as affirmed in various international fora and conventions, e.g., WSSD, UNFCCC.

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Since ICM is a tool for coastal governance and it is the government's responsibility to develop and execute policy and management interventions, ICM must operate within the government's structural framework. Developing an ICM project/program outside the framework of the local government will lead to difficulties in executing and sustaining program/project activities.

In the PEMSEA ICM sites, the ICM projects were developed and implemented by the municipal, provincial, city, or state governments. In Bataan, Cavite, and Batangas provinces in the Philippines, the projects were developed and implemented by the local governments together with the Department of Environment and Natural Resources (DENR) and/or private sector partners. In the case of Nampho, DPR Korea, ICM was developed and implemented directly under the supervision and involvement of the People's Committee, which is composed of heads of key line agencies and representatives of the populace.

ICM Program Management Office

To operate the ICM projects, PMOs are set up either in divisions/units of the local governments, or in line agencies responsible for natural resources and environment or for planning and development. More commonly, the designated offices provide
the necessary staff for the PMO. In some cases, the PMO is made up of staff seconded by various agencies. Examples are the following:

- When the Batangas Bay Demonstration Project in the Philippines was initiated in 2004, the Provincial Government provided office space and seconded staff from its planning department to constitute a skeletal PMO. This PMO coordinated the ICM development and implementation in the site in collaboration with a core interagency team and the Regional Programme Office of the Project on Marine Pollution in the East Asian Seas (MPP-EAS, the first phase of PEMSEA), which facilitated support from national and local government officials and technical experts to develop initial technical studies and ICM planning documents including SEMP. The lead agency role and hosting of the PMO was taken on by the Provincial Government – Environment and Natural Resources Office (PG-ENRO) of Batangas, which was established in 1995 as part of government decentralization under the Philippine Local Government Code. Following the adoption of the SEMP, legal and institutional mechanisms to translate this management plan into action were studied, which led to the establishment in 2006 of a multi-sectoral council, with the PG-ENRO as technical secretariat (**Figure 5.1**).

- In the Xiamen Demonstration Project which also started in 1994, the Marine Management Division (MMD) under the Municipal Science and Technology Commission was designated as the lead implementing agency of an interagency executive committee, which was composed of 22 local government agencies. This interagency committee concurrently served as the ICM PMO. Subsequent evolutions of the committee led to the reorganization of the MMD into the Marine Management Office (MMO) under the leadership of the Secretary General of Xiamen Municipality. Then, the MMO and the Fisheries Bureau were later merged into a new agency called the Xiamen Oceans and Fisheries Bureau (XOFB) to further improve the coordinating mechanism as the temporary project-based arrangements were transformed and institutionalized to ensure the continuity of ICM activities

6. Then, proceed to discuss the challenges/difficulties associated with an interagency and multi-sectoral coordination, and discuss why it is necessary that a neutral agency is designated as the lead agency. Let them identify examples of neutral agencies from the list they prepared and explain the advantages of having these agencies as lead agencies for the ICM program. If a neutral agency cannot be identified, let them identify other line agencies that can coordinate the ICM program and discuss the strength and weakness of such focal agency.

As examples of ICM program coordination mechanism and the relationship between the PCC and PMO, briefly present **Figures 5.1 and 5.2** to show the institutional arrangements in Batangas and Xiamen.

Emphasize the important role of the government in coordinating interagency and multi-sectoral collaboration.

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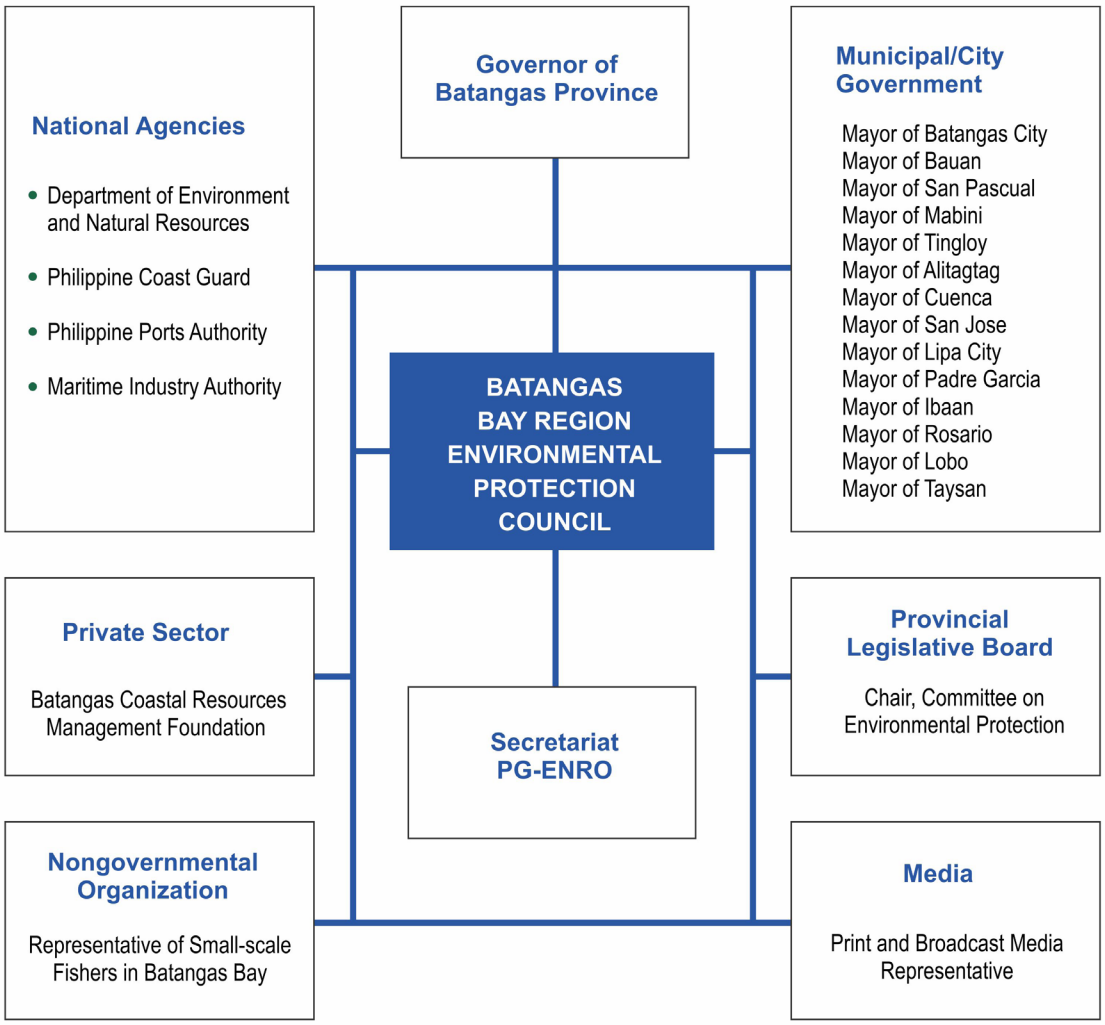
after the project. Within the XOFB, full-time personnel have been assigned to the Xiamen ICM PMO. **Figures 5.2 and 5.3** present the initial and current coordination mechanisms for ICM implementation in Xiamen.

- In the Bali ICM Project in Indonesia, a staff from the Ministry of Environment in Jakarta was assigned in Bali to support the PMO (the Provincial Environmental Impact Management Agency or BAPEDALDA) in the first two years of the project development and implementation, until local capacity and confidence for project implementation have been ensured. The PMO is still in the same office, which is now called the Environmental Agency of Bali Province (BLH).

- In the Sihanoukville ICM Project in Cambodia, the PMO was composed of five staff assigned by the Department of International Cooperation of the province (under the Ministry of Interior), with a technical working group that was composed of line agencies and various task teams. This arrangement has been maintained to the present.

Figure 5.1 The Batangas Bay Region Environmental Protection Council (BBREPC)



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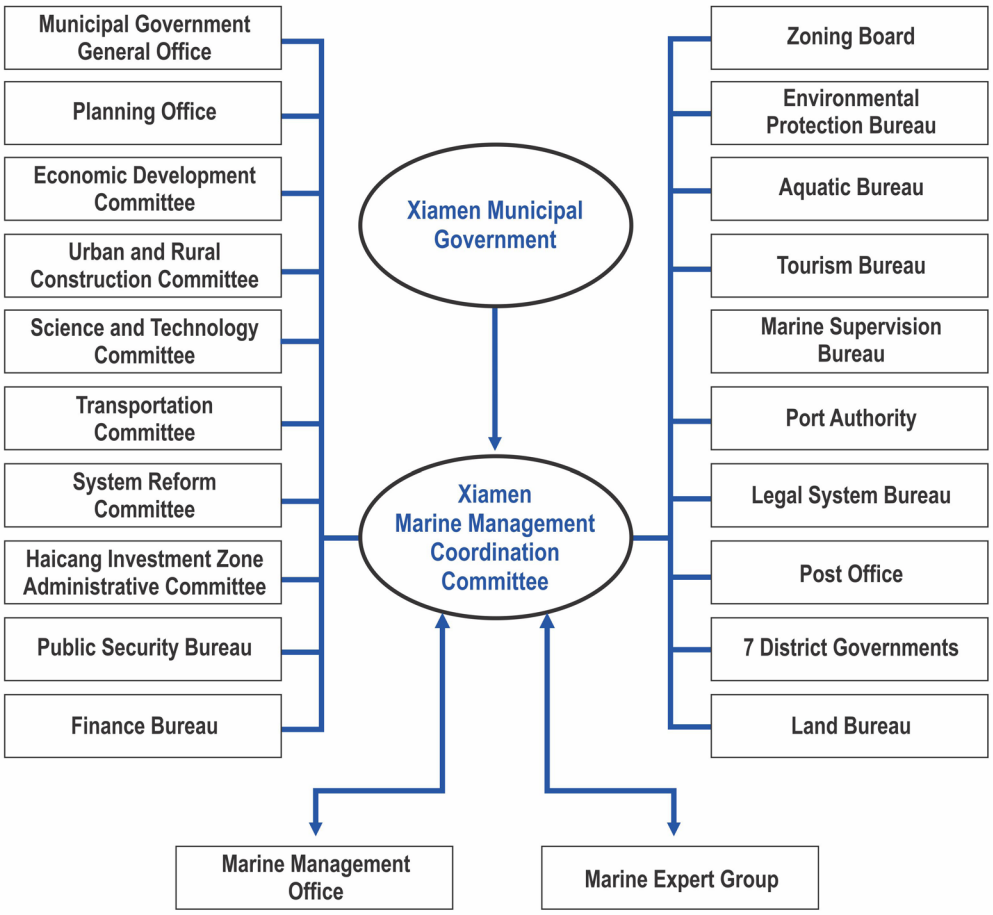
• In the Chonburi ICM Project in Thailand, which was initially composed of five local governments, one municipality (Sriracha) hosted the PMO. Sriracha and another municipality (Laem Chabang) initially provided one staff each to work with a hired project manager in coordinating the activities of the technical working groups under the guidance of the Mayor of Sriracha and the Governor of Chonburi Province, with support as necessary from the personnel of the provincial and local governments and line agencies. Following the adoption of the CS and the participation of more coastal local governments in ICM implementation, the PMO structure and composition was revised to have a PMO Director; sections responsible for planning, finance, technical information and services, and M&E; and a secretariat at Sriracha Municipality. When ICM implementation was scaled up to the entire province, the secretariat was moved to the office of the Chonburi Provincial Administrative Organization.	

Figure 5.2 Initial Xiamen Integrated Management Coordinating Mechanism



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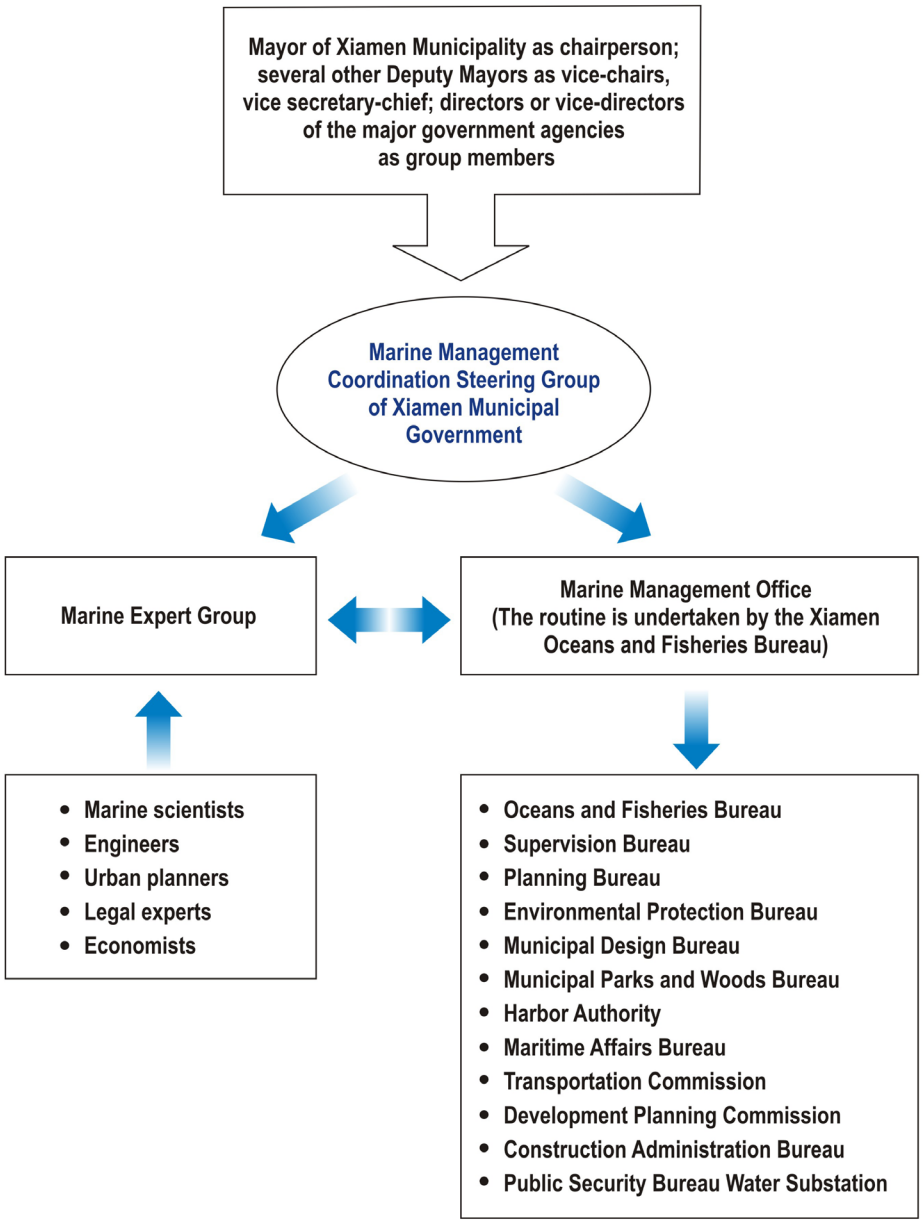
As mentioned in the previous module, the ICM manager or the ICM Program Director should have the necessary knowledge and technical and leadership skills to coordinate the ICM program implementation and the integration of various activities within the program. The ICM PMO Directors in selected PEMSEA sites are as follows:

- Head of PG-ENRO in Batangas
- Deputy Director General of the Xiamen Ocean and Fisheries Bureau of the Xiamen Municipal Government, P.R. China
- Director of the Department of Natural Resources and Environment in Danang City, Vietnam
- Head of BAPEDALDA (now BLH) in Bali Province, Indonesia

Figure 5.3 Current Xiamen Integrated Management Coordinating Mechanism



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- Vice Governor in-charge of environment-related matters in Sihanoukville, Cambodia
- Head of the Selangor Water Management Authority (LUAS) in Selangor, Malaysia.

In Chonburi, the Director of the ICM program is elected every two years from the mayors of the participating municipalities. This arrangement was selected considering the large number of local administrative units participating in the program, their strong interest and role in managing the coastal areas within their jurisdictions, and the ease of mobilizing local personnel to support the program. The provincial government, through the Office of the Governor and the Provincial Natural Resources and Environment Office, facilitates interagency and cross-sectoral collaboration at the provincial level.

Based on the video presentation and case study reports in the previous module, discuss the coordination mechanisms for the Xiamen and Batangas ICM programs, highlighting the process that these sites underwent to create such coordinating mechanisms.

Explain why these project mechanisms evolved. Pinpoint the transformation of structural and organizational relationships to come up with better arrangements.

In the Preparing Stage, the ICM program manager and staff undergo training on the ICM concept, principles, framework, and process as well as on project development and management to prepare them for the challenging task of facilitating the development and implementation of the ICM program in their area.

The PMO is set up immediately following ICM program approval to facilitate the following: (a) planning and approval process; (b) conduct of stakeholder consultation workshops; and (c) preparation of a program framework/work plan.

Alternatively, if the PMO could not be immediately set up, a planning team composed of representatives from identified key project participants may be organized to facilitate the stakeholder consultation and planning process. The PMO could be established building on this initial planning team.

Interagency and cross-sectoral coordinating committee

Because of the comprehensive coverage of the ICM program in terms of the issues to be addressed, corresponding actions to address these issues, and involvement of various government agencies and stakeholders, an interagency and cross-sectoral coordinating committee (i.e., PCC) is set up in order to harmonize overlapping responsibilities and integrate the actions of concerned institutions and organizations.

Since the PCC is expected to take the leadership role, it should ideally be composed of the heads or deputy heads of the participating local governments, agencies, and relevant stakeholder partners, and chaired by the mayor/governor or his/her deputy.

An administrative ordinance or an administrative order from the mayor or governor will be valuable in providing legitimacy to the operation of the PMO and PCC.

To ensure the sustainability of ICM implementation, the PCC and PMO may later be transformed into a more permanent mechanism such as the Batangas Bay Region Environmental Protection Council (BBREPC); Xiamen Integrated Management Coordinating Mechanism; Sustainable Development Council in

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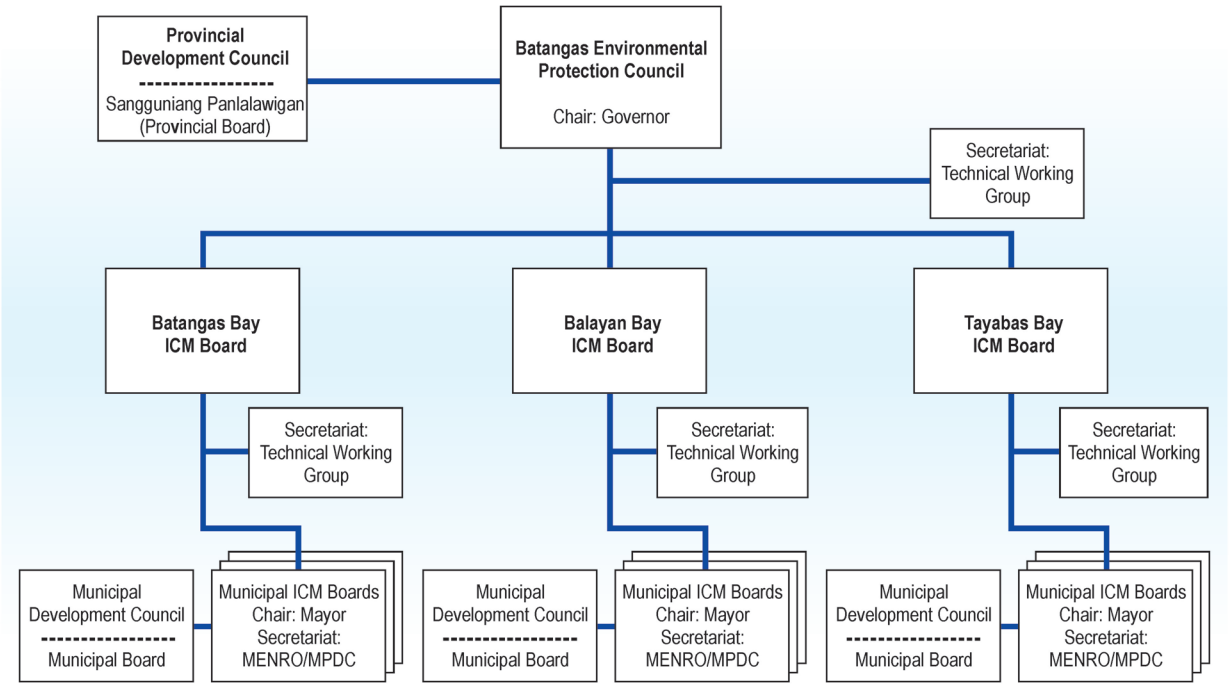
Danang, Vietnam; and Preah Sihanouk Coastal Management and Development Committee in Sihanoukville, Cambodia. The BBREPC (**Figure 5.1**) evolved from an initial multi-sectoral core team service as PCC (consisting of planning officers from the city and municipal governments; relevant provincial offices such as those involved in planning, agriculture, and health; local offices of the national agency for environment and natural resources; national port authority; coast guard; and a private sector group) into a legal and institutional mechanism to support the implementation of the SEMP for the Batangas Bay Region, following a careful study of various alternative structures which could adequately represent all stakeholders and ensure sustainability regardless of political transition. The BBREPC was created in 1996 by virtue of Provincial Ordinance 001 series of 1996. In Xiamen, an interagency executive committee composed of representatives from 22 local government agencies, such as planning, finance, marine affairs, land use, environment, fisheries, port operations, and tourism, was established to provide policy advice, review progress of activities, and provide recommendations on issues arising from the ICM project. Later on, it evolved into the Marine Management Coordination Committee (MMCC), a high level interagency committee headed by Xiamen's Executive Vice Mayor that is responsible for the coordination of and consultation on coastal development policies (**Figure 5.2**). In order to ensure the continuity of ICM initiatives, the MMCC, which was only a temporary body during the ICM project, was further transformed into a formal institution called the Marine Management Coordination Office (MMCO) directly under the supervision of the municipal government. The MMCO was then led by the Executive Vice Mayor.	Figures of ICM program coordination and management mechanisms in ICM parallel sites/scaling up sites such as Bataan, and Guimaras in the Philippines, Sukabumi Regency in Indonesia, etc. may be shown.

Figure 5.4 Three-tiered multisectoral organizational structure for ICM implementation in Batangas Province



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Now, the Mayor as the Executive Chairperson heads the Marine Management Coordination Steering Group, with the directors or vice-directors of major government agencies as members.

The coordination and management mechanisms of the ICM sites continue to evolve in response to various factors, including the need to streamline the arrangements for more effective implementation, changes in the administrative structure of the local government, emergence of new issues and concerns, and ICM scaling up, among others. **Figure 5.4** presents the current ICM coordination mechanism in Batangas Province in support of the replication in two other bays in the province of the ICM experience in Batangas Bay.

Local governments that established ICM programs at a much later time were able to learn from the experience of the ICM demonstration sites and able to established at the onset improved ICM coordination and management mechanisms that are appropriate for their local contexts and needs. They also continue to improve these ICM mechanisms over time to better support the needs of their respective ICM programs.

Scientific/technical advisory group

Decision-makers need scientific information to help them make sound policy and management decisions. Scientific support and advice are thus needed and should be an essential part of the entire ICM cycle. To obtain the needed scientific support and information, research institutions and universities should be involved in the activities of the ICM program. Below are examples of scientific support groups for ICM:

- In Xiamen, PR China, a Marine Experts Group (MEG) is included as part of the ICM institutional arrangements, thereby ensuring that multidisciplinary expertise is available to, and can be accessed by the local government.

Refer to the figure of the institutional arrangements in Xiamen and point out that the MEG is an integral component of the structure.

- In Danang, Vietnam, representatives from local and national research institutions and universities make up the Technical Working Group (TWG), which is tasked with providing scientific advice and support to the PCC. The TWG is also responsible for reviewing project outputs to ensure the scientific and technical quality of the reports. Individual task teams are organized to undertake specific technical tasks, such as the establishment of IIMS and conduct of ERA.

What are the considerations in developing the ICM program work plan and budget?

After setting up the coordination mechanism for the ICM program, the next steps are the delineation of the management boundary for the program, preparation of work plan and budget, and arrangement of available financial and other administrative resources to support the program.

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What is the appropriate geographical size and boundary of the program?

In preparing the ICM project work plan, it is important to first determine and get consensus on the management boundary of the ICM program. Ideally, the boundary should be tailored to cover an area that enables resolution of all the major coastal issues.

The ideal management boundary for an ICM program should include the entire watershed, including estuaries, river basins, and coastal areas. Operationally, however, it is advisable to initially design the ICM program for a much smaller area, usually within the administrative boundaries of a coastal municipality or province. These administrative boundaries become the operational boundaries within which the ICM program is established. ICM practices can later be extended and scaled up as experience and knowledge accumulate. For large provinces, ICM can be initiated in a specific pilot area (e.g., municipality/ies), then gradually expand to other areas, applying the approaches and best practices from the pilot site.

In Chonburi Province, Thailand, ICM was initiated in five municipalities covering 28 km of the 157-km provincial coastline and 129 km^2 of the 4,363 km^2 provincial area. The landward boundary included the administrative boundaries of the four land-based municipalities while the seaward boundary included all waters adjacent to the coastline of the four municipalities extending to the island municipality located approximately 15 km off the coast (**Figure 5.5**). At the end of the first ICM cycle in 2007, the ICM program already involved 24 local governments. With the addition of 2 local governments in 2008, the ICM finally covered the entire coastline of the province. In 2010, ICM implementation extended further to non-coastal local governments to cover the entire province of Chonburi.

In Bali, Indonesia, the ICM project was initially implemented in four coastal regencies and one coastal municipality in the southeastern coast of the province (**Figure 5.6**). By the end of the first ICM program cycle, the three remaining coastal regencies were already implementing ICM. At the start of the second ICM program cycle, the only non-coastal regency also joined the ICM implementation, completing the ICM coverage of the entire Bali Province.

The management boundary of the Xiamen ICM Project was also initially limited to the boundary of Xiamen City's administrative jurisdiction. The project's original objective was to address growing multiple resource use conflicts and marine pollution in Xiamen as a result of the city's industrialization and rapid growth. Recognition of transboundary issues within the watershed area that affects Xiamen and nearby municipalities provided an opportunity for functional scaling up. This scaling up was done through the development of a management framework for the Jiulong River (Jiulongjiang) estuary as part of the second ICM program cycle.

In Batangas, the ICM project was initially demonstrated in 1994–1999 in Batangas Bay, one of the three major bays in the province, covering a landward and seaward boundary that facilitates planning. The boundary was to be extended to the entire watershed area when the program is already better equipped to handle the larger management scope. In the second ICM program cycle (2000–2005), the ICM model demonstrated in Batangas Bay was replicated in the two other major bays, the Balayan Bay and Tayabas Bay. The third ICM program cycle (2006–2013) focused on the implementation of ICM Action Plans for the bays and strengthening of partnership development. Efforts are ongoing to further scale up ICM implementation to the Verde Island Passage in collaboration with other provinces

To start the discussion, pose this question to the participants: In developing and implementing an ICM program, should one cover the whole ecosystem at once or do it in an incremental approach?

Let the participants come up with a few point/ideas and acknowledge the relevance of the points raised.

Figure 5.5 The Management Boundary of the Chonburi ICM Project

The boundary initially covered 5 municipalities. Following the demonstration of the ICM framework and resulting benefits, ICM is now being implemented in 26 local administrative units (i.e., municipalities, cities, districts, sub-districts), covering the entire provincial coastline.

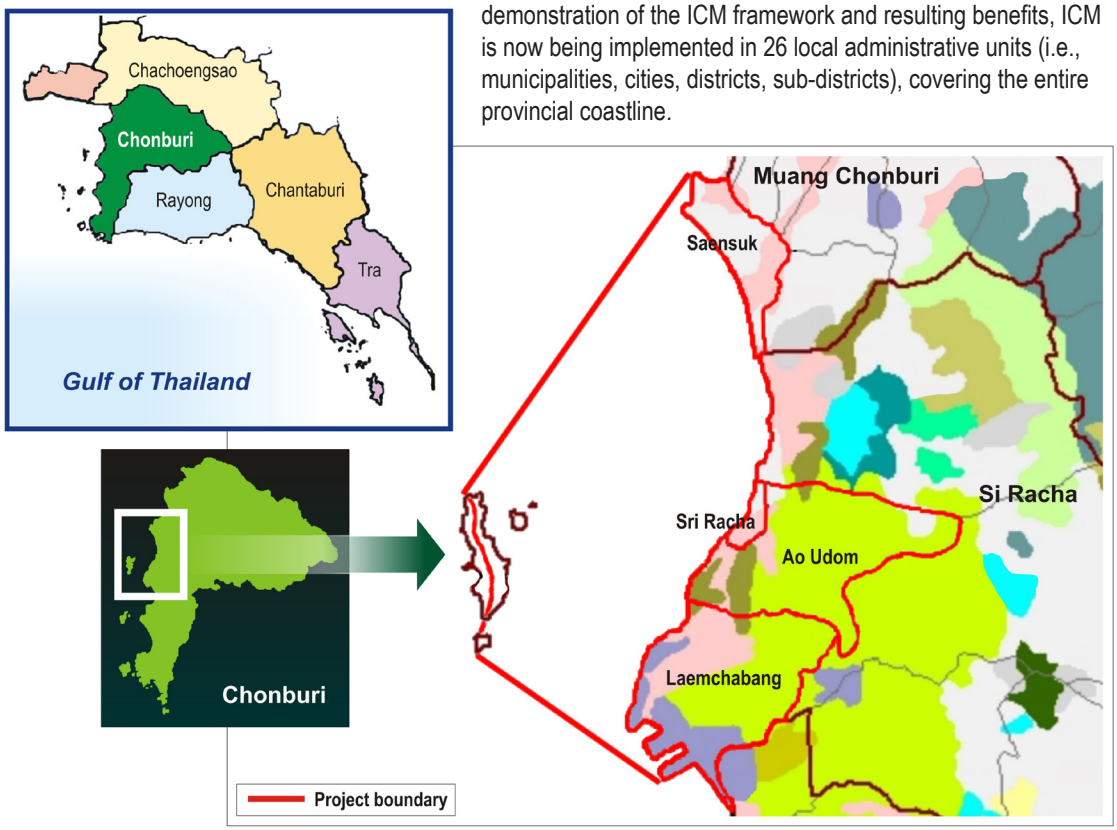

Figure 5.6 The Management Boundary of the Bali ICM Project

The boundary included four regencies and one city at the southeastern coast of the island. With the participation of the four other northern regencies, the ICM program now covers the entire province of Bali.

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surrounding the strait. The passage has been declared in 2006 by a team of marine conservationists as the "center of the center of marine shorefish biodiversity". It is essential to have the management boundary agreed on by all the participating local governments, line agencies, and stakeholders. This boundary should be specified in a formal agreement (e.g., memorandum of agreement or MOA) among the key ICM program participants. ***What are the elements of a work plan?*** The work plan should specify the key steps and approaches in developing and implementing an ICM program, the implementation schedule, lead and supporting implementers, and the human and financial resource requirements. This work plan should be prepared in consultation with all the relevant stakeholders and attached in a formal agreement, if necessary, to appropriately reflect the participating institutions'/organizations' commitments to the program. The final program work plan and budget should have the approval of the PCC and concerned stakeholders. (see **Handout 5.1**.)	Emphasize that each activity in the ICM cycle contributes to strengthening the various aspects of marine and coastal management and governance. However, the activities to be included in the work plan could be identified and prioritized depending on local conditions, issues that need to be addressed, relevant mechanisms and interventions already in place, and available financial and human resources. Provide an example of an ICM Program work plan (**Hand-out 5.1**).
How much funding is required? Will a local government be able to implement an ICM program without external support? The required budget is a challenging issue. There is a common misconception that ICM requires considerable resources. However, it should be understood that ICM is not introducing a new program of action totally separate from what the local governments and line agencies are already doing. Rather, it aims to establish an integrated coordinating framework that builds on the existing government planning and management processes for which local resources are available. Hence, ICM can be undertaken without going beyond the financial capacities of the local government and line agencies operating in the relevant areas. The level of activities, as well as the comprehensiveness, quality, and timing of the ICM project can be designed depending on the availability of resources. The PMO should be very clear on the level of funds that is available and develop the project work plan based on whatever funding could be secured, including from local government resources and support from local line agencies and other stakeholders. It is thus essential to secure linkages and support from the concerned parties and clarify the relationship of the proposed project activities with their respective mandates and tasks. This will enable them to appreciate that participating in an ICM program will not mean corresponding reduction in their budget, and that the proposed ICM activities can be integrated into their own fiscal plan and budget. To supplement available local resources, coastal managers should also explore other sources of support such as private-public sector partnerships, endowment	The work plan of Cavite specifies the activities for each stage of the ICM cycle and the corresponding budget from the local government. Funding from other sources is also specified. Note that some activities in the ICM cycle (e.g., risk assessment, integrated environmental monitoring) were not included in the work plan. This is because Cavite is one of the provinces surrounding Manila Bay, for which such activities have already been undertaken.

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funds for the environment, revolving funds as well as income generation from products and services.	
Who will be responsible for implementing the activities identified in the work plan?	Considering the wide range of activities entailed, the work plan for an ICM program may appear overwhelming particularly to the ICM manager and PMO personnel. Emphasize that these activities will not be implemented solely by the PMO. The role of the PMO is to coordinate the implementation of the activities by participating institutions/ organizations and/or multiagency, interdisciplinary and cross-sectoral task teams (e.g., preparation of baseline SOC and application of various technical tools).
Granted that funding has been worked out and approved, another crucial consideration is the availability of staff capacities for the planning, implementation, and management of the ICM program. The PMO will need to identify appropriate individuals, institutions, or task teams and work out arrangements (e.g., subcontracts, interagency working groups, or other means) so that activities can be undertaken as scheduled in the work plan. The work plan often specifies the lead and participating agencies/offices for each task. The primary role of the PMO is to coordinate the implementation and monitoring of performance, inputs and outputs, and impacts of ICM program activities.	
How can political commitment be secured? How can the ICM program move forward?	At this stage, it is not necessary to specify exactly who will be involved in undertaking each activity in the ICM cycle. This can be done as part of the preparation for the actual conduct of the activity. What is important at this stage is to determine if the technical expertise required is available locally (within the government units/ agencies and participating institutions/ organizations) or if assistance needs to be sought elsewhere. Such information will be relevant in planning the budget.
It must be stressed that many government officials and stakeholders will allocate government funds for ICM program implementation only if they are convinced of the program's potential economic and social benefits. Local governments can be made to commit funds for ICM by ensuring their active participation, not just in public awareness campaigns, but as key players in major ICM activities (e.g., public consultations on CS development, workshops, and study tours). The PMO will also need to embark on an information campaign to introduce and popularize the ICM program to the stakeholders and the general public. The campaign should focus on promoting the acceptance of the ICM program and work plan, and obtaining support in implementing the activities in the work plan. ICM initiatives at the local level should be undertaken with the knowledge of or support from relevant central agencies. This is because many of the policy and management decisions to be made must be in line with existing national policy, priorities and legislation. To maintain strong linkages and secure support from the various concerned line agencies, they should be involved strategically in workshops and activities throughout the ICM process.	
Who should approve the ICM program work plan and outputs?	
As the proposed ICM program is implemented at the local level, the approval of the local government authority is the primary target. Additionally, since an ICM program usually consists of activities that need to be coordinated by the coordinating office, as well as activities that are best implemented by the concerned line agencies or designated specialized institutions or other stakeholders, it is essential that the ICM program is also approved by the concerned line agencies and stakeholders. These agencies will need to integrate the proposed activities or action plans into their own fiscal plan and budget (see **Hand-out 5.2**). The approval of the ICM program by the government justifies and enhances the chance of line agencies getting budgetary approval, if not extra budgetary allocations.	Mention or show the first cycle work plan of Bataan (**Hand-out 5.2**) to highlight the participation of different levels of government as well as the private sector in the ICM program, and hence the need for their involvement in approving the work plan.

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It is therefore essential that the local government authority and concerned line agencies and stakeholders are involved right at the beginning of ICM program development.

The purpose of the PCC under the direct chairmanship of the mayor or governor is not only to ensure the coordinating role of the local government but also to facilitate the approval of the ICM program work plan and budget as well as the program outputs. The PCC is thus the most important mechanism a coastal manager would use to secure government approval and budgetary allocation.

The key persons in the approval process are therefore the chair of the PCC and the director of the PMO who should be able to strategize course of actions that will lead to speedy adoption of the program work plan and approval of the budget. Interest and involvement of local leaders in the ICM program may wane if it takes too long for the project to start. Where possible, the finance agency should also be kept informed and involved.

At this stage, the work plan and budget are reviewed and approved by the PMO Director and endorsed to the PCC for final approval.

How can stakeholder participation be facilitated?

Stakeholder participation is the key to coastal management. Although the public sector is the main player/stakeholder in coastal governance, other stakeholders should be involved and consulted throughout the ICM program, from development to actual implementation.

In the Preparing Stage of the ICM program, the focus of stakeholder consultations are the following:

a. Promote acceptance of the ICM concept and program, minimize resistance, and achieve consensus on approaches for program implementation

2. Build a sense of ownership, responsibility, and commitment for the ICM program. Stakeholders must be made to understand the ICM concepts, approach, framework, and processes that will be followed. They must also understand the ecological, social, and economic benefits to be derived from the program.

Inputs from stakeholders should be considered by concerned national and local personnel in preparing and refining the ICM work plan and in developing any formal arrangements specifying responsibilities in the project implementation.

An inception workshop participated in by representatives of all relevant stakeholder groups would be a useful approach to launch the ICM program. It serves as a venue for the following:

1. Gathering inputs and feedbacks from stakeholders concerning the management boundary for the program
2. Discussing issues to be addressed
3. Formulating strategies to be employed
4. Assessing the ways and means to resolve the identified issues
5. Identifying key approaches and activities in developing and implementing the program

To facilitate the conduct of the inception workshop, a proposed management boundary and draft ICM work program (prepared by the PMO or planning team) should be ready for discussion. These should consolidate the results of initial consultations undertaken with key stakeholders starting from the site assessment stage.

Table 5.1 Examples of ICM Performance Indicators for PEMSEA ICM Sites

ICM Components	Type of Indicators	Indicators
ICM Problem Identification	State Indicators	**State of the Coast (coastal profiling)** • Size and physical characteristics of the coastal area • Population size, distribution, education, and density • Percentage of population with water supply, sanitation services, electricity • Poverty indices (if applicable) • Ecosystems health: risk quotients of major ecosystems/ habitats • Level of urbanization/ classification • Land use patterns: percentage of land used for agriculture, aquaculture, forest covers, human settlement, industries, etc. • Percentage contribution of key economic activities to economic growth • Biodiversity: coastal and marine species inventory • Level of exploitation of natural resources • Types and levels of major pollutants • State of water quality for public health and for fish farming • National resource and environmental governance: institutional arrangement, legislations, legal and interagency conflicts • Inventory of institutions or skills available at local level for integrated planning and management • Existing mechanism(s) for resolving multiple use conflicts • Types and level of environmental investment
	Stress or Pressure Indicators	• Rates of increase, types and level of pollutants • Rates of water quality deterioration, habitat degradation; and resource exploitation • Nature, level, and rate of conversion of coastal habitats to other uses • Expansion of pollution hotspots • Level of environmental risk quotients for water quality and ecosystems • Types, nature, and number of potential development projects which might affect environmental quality
ICM Program Formulation	Process Indicators	• Site profiling undertaken • Problems identified and prioritized • Management boundary defined • Planning undertaken • Stakeholders consulted • Data/information analyzed • Public awareness created • Communication plan developed • Environmental risk assessment performed • Strategic management plan formulated • Issue/area-specific plan developed • Organizational arrangement proposed • Legal arrangement proposed • Financial arrangement for program implementation identified • Environmental monitoring program developed • Information management system established and operational • Core group of officials and stakeholders trained • Program monitoring, evaluation and reporting protocols developed

ICM Components	Type of Indicators	Indicators
ICM Program Implementation	Response Indicators	• Local level interagency, multisectoral coordinating mechanism operational • Coastal strategy/strategic environmental management plan implemented • Site specific/issue specific action plans implemented • Sea-use zoning scheme operational • Civil society group mobilized in planning and management • Communication plans implemented to inform stakeholders and public • Integrated environmental monitoring program implemented • Required legislation and administrative orders adopted and implemented • ICM program monitoring, evaluation, and reporting protocols implemented • Integrated information management system operational • Stress reduction targets set and measures undertaken
ICM Program Sustainability	Sustainability Indicators	• Perception and behavior changes among stakeholders occur • ICM mainstreamed into local/national training and education system • Sustainable financing systems in support of ICM program operationalized • Mainstreaming of ICM into national or subnational policy • Integration of ICM program into local government development program • Mechanisms for knowledge generation, sharing, and extension established and operational
ICM Program Impacts	Impact Indicators	**Environmental Impact** • Visual sign of improvement of environmental quality (water, sediment, biota, air quality) • Percentage of nutrient reduction • Percentage of degraded habitats restored • Area or length of coastline rehabilitated through shoreline management • Areas of ecosystems protected/preserved • Reduction of risks to ecosystem and public health **Economic Impact** • Increase in average household income • Increase in employment opportunities • Poverty reduced • Pollution damage cost reduced • Investment in environmental improvement increased • Investment in cleaner production technology increased **Social Impact** • Reduced incidence of multiple use conflicts • Reduced risks to public health associated with environment degradation such as waterborne diseases • Reduced seafood poisoning due to toxins/contaminants • A well-informed public • High environmental awareness • Increased transparency in governance

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Likewise, the inception workshop would enhance stakeholder interest in and potential contribution to the program.

The main questions usually raised by stakeholders in consultation workshops pertain to the workability of the ICM approaches in the given area and how these can be applied to solve local problems.

More focused workshops with specific stakeholders may be needed to discuss their participation in and commitment to the ICM program in greater detail. The workshop discussions lay the ground for developing the program framework particularly the work plan and budget.

What are the core capacities required in developing and implementing the ICM program? Who should be trained?

Capacity development must be given high priority as the success and failure of an ICM program heavily depends on local capacity and the skills and professional maturity of the local implementers.

In the Preparing Stage, it is essential to equip the participating local officials and personnel with sufficient knowledge and skills particularly on ICM concept, principles, framework and process, and the project design, operation and management. Various strategies can be employed, including visits to successful ICM sites and interaction with other areas implementing ICM programs, short-term trainings, and internships/fellowships. Ultimately, however, thorough understanding and skills can only be gained through actual engagement in program activities and participation in on-ground work.

Other stakeholders must also be trained to do their part in the ICM program. The capacity of other stakeholders to participate meaningfully in the ICM program should be enhanced by regularly informing them of the project developments and of the various opportunities for education and involvement.

To provide focus and direction to capacity-building efforts, available local capacity to implement the program work plan should first be assessed. To fill identified gaps, a plan that identifies potential capacity-building requirements, prospective trainees/targets, opportunities for capacity enhancement, and resources required should be developed.

What is the importance of measuring the performance of the ICM program and how is this measurement done?

Monitoring and evaluation is an integral component of ICM programs. It provides a means by which the progress and performance of the program can be assessed, and facilitates modification of activities which may not be achieving the desired results because of changing political, social, environmental, or economic conditions.

Emphasize that the M&E program should evaluate two aspects, namely:

1. progress relative to the work plan and budget
2. effectiveness of the program in achieving desired outcomes (this is where the SOC and performance indicators are relevant)

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The benefits of having a well-planned and well-conducted M&E program include the following:

1. Help managers optimize the use of resources
2. Streamline project activities
3. Improve the quality and impact of program outputs
4. Facilitate knowledge transfer and the replication of good ICM practices to other coastal areas

It also promotes accountability among the program implementers and concerned stakeholders.

An M&E program includes the formulation of a plan for monitoring and evaluation, delineation of performance indicators, determination of baseline conditions, application of the M&E schedule, and the use of the M&E results for the improvement of the program.

Who are responsible for M&E? What are the deliverables? What are the considerations in preparing an M&E plan?

In the Preparing Stage, responsibilities and organizational arrangements for M&E within the project management team are identified, and enhanced as necessary. Based on a clear understanding of the strategies, objectives, process, and intended outputs and outcomes of the ICM program, the questions to be answered by the M&E are clarified and performance indicators are developed. A time-bound implementation schedule is then developed, including the monitoring, evaluation, and reporting requirements.

The M&E schedule is prepared in accordance with the required technical and management reviews for the program, and the schedule of the local government and other stakeholders/partners. The schedule includes a regular M&E program to assess progress against the program's objectives, work plan, and budget (e.g., monthly or quarterly), as well as interim evaluations (e.g., annual, mid-term, terminal) to evaluate the effectiveness of strategies and approaches in achieving desired outcomes.

In the Initiating Stage, the baseline SOC for the project area is determined, considering the identified performance indicators and a prescribed structure. This will serve as the basis against which future changes will be compared. The SOC covers the social, economic, environmental, legal, policy, regulatory, and institutional conditions at the site, and any gaps in the information base and arrangements.

The requirements for the preparation of an SOC, including the human and technical resources (i.e., manpower and data/information), financial resources, and political commitment to initiate and follow on with the SOC reporting, are assessed during the Preparing Stage.

Emphasize the importance of having a baseline in M&E against which future changes could be compared. Hence, preparation of SOC, and subsequent updating, is important.

The structure of the SOC is based on the SDCA framework. Hence, it will be a useful tool to monitor progress on the development and implementation of each of the elements of the framework.

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What is the importance of ICM indicators in M&E?

Monitoring of the program and periodic evaluation of project performance against the identified indicators will be undertaken throughout all the stages of the ICM cycle.

In the Refining and Consolidating Stage, the results of the M&E, including the updated SOC, are used for assessing the achievements of the ICM program relative to its objectives, the outcomes of which are used as basis for refining project approaches and strategies. The relevance and effectiveness of the M&E system is also assessed.

Performance Indicators

Emphasize again that basically, M&E involves monitoring the progress of ICM implementation relative to the work program and budget, and determining the effectiveness in achieving (or working towards) the desired outcomes based on the specified performance indicators.

Performance indicators can be set and used effectively to monitor and evaluate the progress of an ICM program. Since the positive environmental, social, and economic impacts of ICM are usually not evident in the short term, it is important to develop a set of performance indicators that allows the measurement of achievements as the program, and its outcomes, evolve. Performance indicators are therefore developed for measuring achievements and changes in the following:

a. Processes of integrated coastal planning and management (Process indicators)
b. Ecological and socioeconomic status of the coastal area prior, during, and after the ICM implementation (State indicators)
c. Forces that influence the state of the environment and natural resource use (Pressure indicators)
d. Policy and management interventions undertaken (Response indicators)
e. Institutional and financial mechanism to ensure continuation of efforts (Sustainability indicators)
f. Ecological and socioeconomic changes resulting from ICM interventions (Impact indicators)

The development of ICM indicators should take into consideration the indicators already developed under Agenda 21, the UN MDGs, the WSSD Plan of Implementation and the UN 2030 Agenda on Sustainable Development Goals. Key performance indicators for ICM are illustrated in **Table 5**. The application of these indicators should be area-specific and tailored to local context.

Synthesis

Refer to the list of objectives posted. Ask the participants if they feel that these objectives have been adequately accomplished. Also ask if the objectives contributed to preparing the project personnel and stakeholders for undertaking an ICM program. Be open to feedback.

In the Preparing Stage of an ICM program, the following points need to be considered:

1. It is important to involve various levels of governments (national, provincial/ state, local) and stakeholders by providing them with roles in the ICM program that tie in with their existing functions in coastal management and by providing an interagency, multidisciplinary, and cross-sectoral project

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2. An ICM work plan not only outlines the activities and schedule for the ICM program but also specifies the commitments of partners with regard to human and financial resources; hence it should be prepared through adequate stakeholder consultation. 3. The success of an ICM program depends on the availability of local resources to support its development and implementation. In addition to allocating local resources, the government should also explore partnerships and other innovative financing schemes with the private sector. 4. A wide range of technical and managerial capacity is needed for the successful implementation of an ICM program. It is essential to develop local capacity for coastal governance, particularly when upgrading institutional capability to respond to local coastal management needs. Local academic and research institutions could also play a critical role. 5. M&E is an integral part of the ICM program and should be undertaken throughout the entire planning and management process. Requirements for SOC reporting should be considered in developing the M&E system. ***"Well begun is half done."*** This basically sums up the importance of the Preparing Stage of the ICM program development and implementation cycle. **Assessment** Participants should be able to discuss the major activities and considerations in the Preparing Stage of an ICM program, particularly in setting up the mechanisms for project coordination, stakeholder consultation and involvement, capacity building, and project M&E . They should also be able to explain how these can be carried out in their respective local areas, and to describe associated challenges and opportunities. Participants should be able to identify what planning features, steps, or activities have made ICM planning effective for Xiamen and Batangas.	Mention that some concepts like public awareness, stakeholder participation, capacity building, and M&E will be reiterated in the succeeding modules. The SOC will be elaborated further. But explain unclear concepts this early for them to see the continuity of the ICM cycle. You can also use their comments to improve discussions in the succeeding modules.

Module 6

Stage 2: Initiating an ICM Program

Description

This module provides an overview of the available technical tools that a local government can employ to systematically consolidate, manage, analyze, interpret, and use relevant information and data to support the main task in the initiating stage of the ICM cycle: the identification and prioritization of coastal and environmental management issues, strategies, and corresponding actions. Information and data requirements as well as the technical expertise needed in applying such tools are also described.

Duration: **2 hours**

Materials

- **Handout 5.1** SOC Reporting Template
- **Handout 5.2** State of the Coasts of Batangas Province
- **Handout 5.3** Guide for Establishing an IIMS
- **PEMSEA publications**
  Coastal Strategies of PEMSEA ICM sites; Environmental Risk Assessment: A Practical Guide for Tropical Ecosystems; published risk assessment documents of PEMSEA sites

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Learning Outcomes

At the end of the module, the participants will be able to do the following:

1. Discuss the outputs and tasks in the Initiating stage of the ICM cycle
2. Discuss the importance of identifying and prioritizing issues, and determining the strategies, actions, and tools that can be applied to address these issues
3. Discuss the focus of public awareness activities during the Initiating Stage and how these can be undertaken in a systematic manner
4. Identify the steps and requirements in applying the identified tools for priority setting and undertaking related activities

Greet the participants and post the module objectives on a wall. This will remind everybody of the module's focus.

Give the participants an outline of the module's discussion so they can follow along easier.

Post the ICM cycle (**Figure 4.1**) on the wall and highlight the Initiating Stage so that the participants focus on this part and on the activities involved in this stage.

Review

The previous module discussed the Preparing Stage of the ICM Cycle. This first stage sets in place a program management mechanism that is hinged on interagency, cross-sectoral, and multidisciplinary coordination, integration, and resource sharing. It also involves preparation of a program work plan and budget, arrangement of human and financial resources, training of ICM core staff and key stakeholders, and establishment of a project monitoring and evaluation system. It highlights the importance of stakeholder participation right from the initial stages and throughout the entire ICM process.

Discussion

This module presents the second stage of the ICM cycle — the Initiating Stage. The discussion will undertake the following:

1. Provide an introduction to the outputs and tasks of this stage of the ICM cycle
2. Discuss the importance of identifying and prioritizing issues at the start of an ICM program
3. Describe the various tools to facilitate scientific and systematic identification and prioritization of issues, such as the baseline SOC report, IIMS for marine and coastal environment, ERA, and CS.
4. Discuss the importance of stakeholder education and participation in this Initiating Stage

What are the outputs and tasks in the Initiating Stage of the ICM Cycle?

In the Initiating Stage, it is essential to identify and prioritize the environmental issues and concerns that require management intervention, and prepare the necessary policy, networking, and technical tools to address them. This stage sets a common direction to pave the way for the next stage and achieves consensus building by involving/engaging stakeholders into the cycle.

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The necessary tasks are as follows:

1. ***Identification of environmental and management concerns***
   Gathering information on the socioeconomic, cultural, political, religious, and ecological characteristics of a site provides baseline information for the ICM program. Such information is important to determine the types and level of policy and management interventions needed. Baseline information is best gathered through stakeholder consultations. A tool such as the SOC reporting system helps identify, systematize, and prioritize various environmental and management concerns.

2. ***Prioritization of environmental and management concerns***
   Priority ranking of environmental and management concerns is needed to identify those requiring immediate attention. An ERA using the gathered secondary information is a tool that can be used to address this need.

3. ***Setting up of an information management system***
   An IIMS can be set up at this stage to store relevant technical and management data and information for easy retrieval and information sharing among participating agencies/institutions.

4. ***Engaging stakeholders and increasing public awareness***
   Major efforts must be exerted to engage and consult the stakeholders and increase public awareness on identified priority coastal management issues and the goods and services arising from the coastal ecosystems. A communication plan needs to be developed to provide focus and direction to public awareness and stakeholder mobilization efforts. Participation of ICM and technical implementers in appropriate capacity development programs is essential.

5. ***Setting of a common vision and long-term framework of actions in developing and managing the coastal area***
   This activity provides stakeholders with a consensual vision and a common direction and framework of actions to guide the use, development, and management of the shared coastal area through the development of a CS. The information gathered earlier on, the identified and prioritized concerns, and the results of stakeholder consultations contribute to the preparation of the strategy.

Why is there a need to prioritize the issues and strategies at the Initiating Stage of an ICM program?

ICM is established on the understanding that no one sector, initiative, or program can address coastal and ocean management issues alone. Hence, there is a need for a comprehensive, coordinated, and integrated approach. However, ICM does not presume to provide the solution to all the problems and concerns in the coastal area. Coastal areas are diverse, requiring different types and levels of policy and management interventions. Further, the resources available for coastal management are usually limited.

What ICM does is to provide a framework and process that enables all those who have a stake in and concern for the coastal and marine areas to work together to

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prevent, minimize, and mitigate prioritized problems using a strategic and logical approach.

Hence, in developing a cost-effective ICM program, identifying priority issues and corresponding strategies and actions to address these issues is a logical first step. Priority setting, particularly in situations where resources are limited, should utilize available tools and techniques that will allow concerns to be weighed in a systematic and consistent manner.

What are the tools and methodologies that can be used in an ICM program for identifying priority issues and developing a shared vision?

For scientific and systematic identification and prioritization of environmental and management issues in an ICM program, the following tools can be applied:

1. SOC reporting system
2. IIMS
3. ERA
4. CS

SOC Reporting System

How does the SOC help in identifying environmental and management concerns?

The SOC report is a comprehensive and up-to-date documentation of the demographic, socioeconomic, cultural, political, religious, and environmental characteristics and status of a given area as well as the management actions taken in that area, providing baseline data for the ICM program.

It consolidates information from various sources, including secondary data from government agencies, research and academic institutions, nongovernmental organizations (NGOs), and the private sector, as well as those data stored in information management systems and published reports. The updated information can then be used to determine and prioritize pertinent issues that can be included in the ICM program. It also identifies critical data gaps that require further research and monitoring.

What are the requirements for SOC report preparation?

A local government needs to commit human and financial resources for the preparation of the SOC. Government commitment to and follow on with the SOC reporting is also important.

The PMO or a task team working with the PMO acts as the lead implementer and facilitates the collection of information and preparation of the report.

The SOC is best developed by involving the relevant stakeholders from national and local government agencies, academe, private sector, civil society, and NGOs. A reporting template has been developed to serve as a guide in collecting the right information for the SOC. The template includes indicators for each

Learning Activity 10

Provide the participants copies of the SOC reporting template (**Handout 6.1**) and the State of the Coasts of Batangas Province (**Handout 6.2**). Give them enough time to review the documents. (This can also be given as a take-home exercise so the participants have more time to review the documents).

Allow 15 minutes for a brief discussion among the participants.

Guide for the discussion:

1. Based on scope and coverage, compare any existing environmental assessments in their area with the SOC.
2. What are the current available sources of information?
3. Determine any perceived challenges in implementing the SOC reporting system.
4. Identify the requirements and key steps to implement the SOC.

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of the governance elements and the sustainable development aspects based on the SDCA Framework. It also reports on the trends occurring in the marine and coastal environment, the targets, and the management responses being undertaken. The template also identifies gaps in available information.

The process of developing the SOC baseline takes at least three months and involves multi-sectoral participation and coordination throughout.

Stages of SOC development:

1. **SOC Inception/Initiation**
   a. Organization and conduct of an inception workshop for the following purposes: (i) explaining the objectives and methodology employed in the SOC reporting system; (ii) reviewing the various parameters and indicators that are determined in the report; (iii) assessing the availability and accessibility of relevant data and information for inclusion in the report; and iv) determining the physical boundaries and baseline year that will be employed in the baseline/initial SOC report
   b. Establishing a multi-sectoral Technical Working Group (TWG) that will be responsible for the development of the SOC reporting system, assigning roles and responsibilities, and preparing an action plan for the preparation of the report. As deemed necessary, a local consultant may be engaged to provide technical support to the TWG in writing the SOC report.
2. **Data gathering, analysis, and validation**
   a. Data gathering using the SOC data template, including setting up of database.
   b. Analysis, synthesis, and interpretation of results
   c. Data validation, including conduct of data validation workshop and ground truthing of information
3. **SOC report preparation and dissemination**
   a. Summary, synthesis, interpretation of results and drafting of initial SOC report.
   b. Organization and conduct of stakeholders workshop to review the draft report
   c. Revision and refinement of the draft SOC report for submission to Local Chief Executives and the ICM Coordination Committee
   d. Publication of the SOC report and dissemination to Local Chief Executives, ICM managers and practitioners, and concerned stakeholders

The SOC report can serve as a basis for planning and adapting ICM programs in response to changing conditions.

Updating of the SOC report should be done on a regular basis in order to show progress and further needs in ICM implementation.

After the exercise, emphasize the following:

Part I provides the general basic information on demography, socioeconomic, and environmental status of the target area.

Part II presents the core indicators for SOC reporting and summarizes the targets and progress made in meeting these targets. This part of the SOC contains information meant for local policymakers and leaders of concerned agencies.

Part III contains specific details of the conditions, responses, and achievements made over the reporting period. This part is meant for coastal managers and other users.

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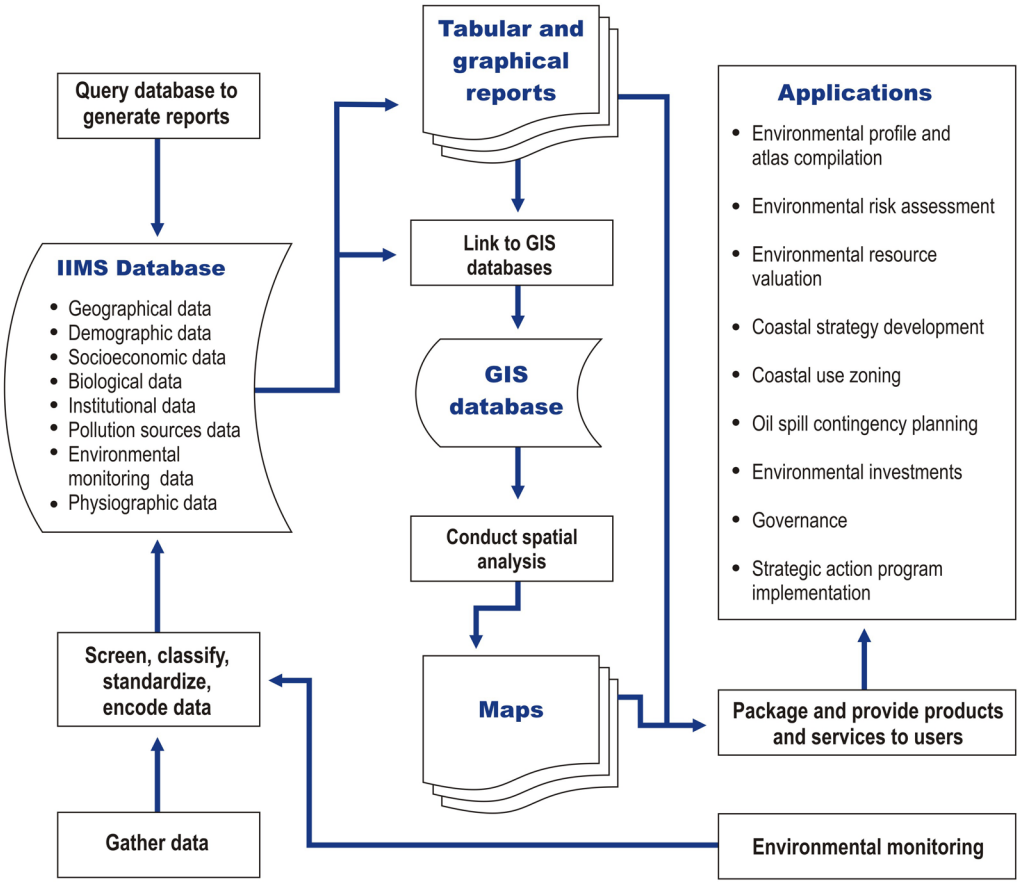
Integrated Information Management System **Why is an IIMS needed?** Information collected for the SOC and other relevant information on the marine and coastal area need to be organized and kept in a manner that will allow systematic recording and updating, and easy access by various users. This will facilitate the use of accurate, updated, and sufficient information to support the formulation of better policies and decisions for managing a given area. Oftentimes, however, data is collected, stored, analyzed, and used separately by different agencies/institutions in accordance with their own mandates and needs. There is limited sharing of information. As a result, information is not integrated and fully evaluated to present a comprehensive picture of the ecological and socioeconomic condition of a particular area. Efforts to collect information are sometimes duplicated, and resources are not used cost-effectively.	Refer to the Guide for Establishing IIMS for the description of data categories in IIMS. This document also provides guidance on data collection to avoid gathering of unnecessary data.

Figure 6.1 The Categories of Data in IIMS and Applications to Support Planning and Decision-making in the Marine and Coastal Areas

The IIMS integrates the management of information covering the ecological, biophysical, social, and economic aspects of an area. It facilitates sharing and access of information necessary to support planning and decision-making in the marine and coastal areas.



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In this light, PEMSEA has developed an IIMS for coastal and watershed areas that can serve as a "one-stop-shop" for data necessary for marine and coastal management (**Figure 6.1**).	
The IIMS can serve as the repository of information for the ICM program, beginning with baseline information and through all the subsequent updates. Since the IIMS was developed considering most of the ICM performance indicators, it can be used as an effective tool to assess trends in ecological and socioeconomic conditions, and determine the effectiveness of management interventions.	
IIMS has been designed to support the various applications in ICM programs, including the following: a. Environmental profile/SOC b. Compilation of baseline information or data c. Public awareness and civil society mobilization d. CS and implementation plan development e. ERA f. Gender analysis f. Coastal use zoning g. Environmental investments h. Environmental impact assessment i. Oil spill contingency planning j. Integrated environmental monitoring k. Environmental impact assessment l. Others	PEMSEA has developed the software and manual for establishing and maintaining the IIMS. It supports local capacity building for IIMS application by providing/ facilitating training for the following: (1) establishment of IIMS; (2) use of the query system and linkage with external software (e.g., GIS); and (3) information networking. PEMSEA also provides technical support for software troubleshooting and advice on the applications. Provide the participants with the Guide for Establishing IIMS (**Handout 6.3**).
What are the basic steps and requirements in establishing IIMS? The establishment of the IIMS basically involves the following: a. Assessment of existing capacities, including existing equipment and data/databases, and qualified personnel b. Procurement and installation of computers, softwares, and other accessories c. Training of concerned personnel d. Gathering, screening, collating, and encoding of available data e. Demonstrating IIMS applications by generating various reports	
Environmental Risk Assessment **How does an ERA help in identifying and prioritizing environmental issues?** An ERA is a systematic and scientific assessment of available information to identify and prioritize the issues that have higher likelihood to have negative impacts on human health and the ecosystems. ERA translates technical information into different levels of risks that are more useful for environmental managers and decision-makers. It integrates a wide range of technical information to identify the following : a. Priority environmental issues of concern b. Potentially important data gaps c. Areas of uncertainty that require further assessment	Show examples of risk assessment reports from PEMSEA sites, and share the processes undertaken by the sites in preparing the reports, which are as follows: 1) establishment of an interdisciplinary working group / task team; 2) conduct of a training workshop that generated a preliminary report; 3) further development of the report including peer review; 4) refinement of the report and presentation to the PCC; and 5) and publication of the report. Explain how the ERA process highlights priority risks, areas of low concern, as well as potentially important data gaps.

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Based on the results of the ERA, recommendations for policy and/or management interventions to address priority issues, or recommendations for further assessment are formulated. ERA provides accurate and timely scientific basis for rational and cost-effective management decisions and actions.

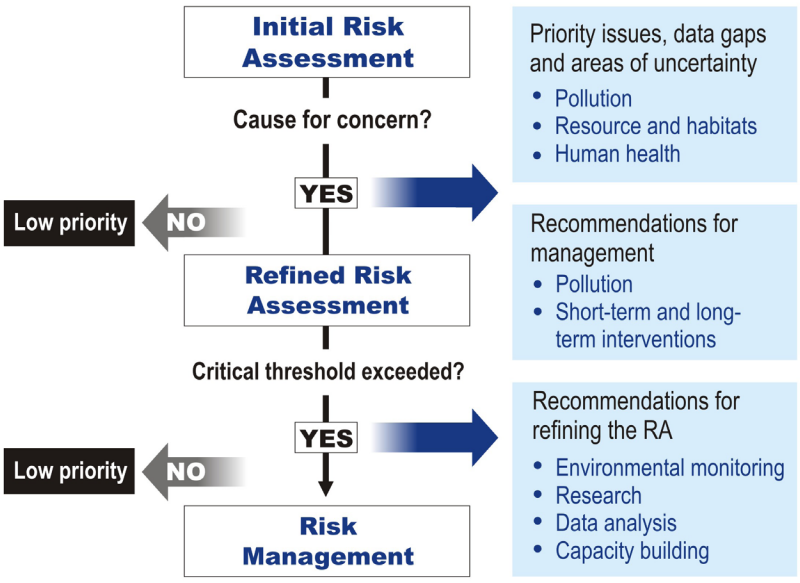
ERA also presents an alternative to the conventional management approach which is based on the measurement and stringent control of contaminant levels (or activities) without due consideration of impacts. Such an approach has been shown to have limited usefulness for protecting the ecosystem and human health. The application of ERA is in line with the global trend to move from chemical-based approaches to consideration of biological effects.

What is the approach to and the importance of conducting an ERA

PEMSEA applies a tiered approach when conducting an ERA (**Figure 6.1**). An initial risk assessment (IRA) is usually conducted first to provide a rapid appraisal of the environmental conditions based on the available secondary information. The IRA identifies priority environmental concerns as well as areas of lesser concern, ascertains which areas require immediate management interventions or further assessment, and highlights potentially important data gaps and/or sources of uncertainty in the assessment. This is followed by a refined risk assessment (RRA) in the identified areas of concern if more in-depth analysis becomes essential and/or additional data becomes available. This tiered approach makes it possible to at least carry out a preliminary risk assessment while some essential data for a more refined assessment are not yet available. It facilitates timely generation of scientific inputs for risk management, maximizing time and resources.

Figure 6.2 The Tiered Approach in Risk Assessment/Risk Management Planning and Decisionmaking in Marine and Coastal Areas

The tiered approach in risk assessment/risk management starts with a simplified initial risk assessment to identify the areas that require management actions and those that need further assessment



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By specifying the focus areas for management, risk assessment enables the strategic allocation of limited resources and prevents the pitfall of wasting resources on minor concerns. It is therefore a cost-effective tool that environmental managers can use to implement appropriate interventions that balance their mandate to protect the environment while allowing appropriate developments to take place.

The ERA process brings together environmental managers and scientific experts from various disciplines and affiliations to collectively perform the assessment. Thus, it provides an enabling environment for cooperation among participating individuals and institutions in future environmental management efforts.

As the output is only as good as the input, sound science and accurate information is vital for making a good and reliable risk assessment.

The ICM risk assessment process can also be extended as necessary to cover other natural and man-made hazards and climate change. Due to differing nature and potential impacts of hazards, the methods and requirements for data collection and risk analysis may differ for each hazard; thus, the participation of relevant specialists in the RA team to cover specific hazards may be required.

With regard to climate change concerns, vulnerability assessments (VA) are needed to identify specific adaptation options and to prioritize actions. VA for climate change not only takes into consideration the physical and environmental conditions that make people vulnerable to climate change effects but the social and economic factors as well. Various VA tools have been designed according to the framework suggested by the Intergovernmental Panel on Climate Change (IPCC) wherein VA is considered a function of three elements: (a) exposure to climate change effects, (b) sensitivity, and (c) adaptive capacity. Some of these tools, however, are data intensive and take some time to apply, limiting their application by local governments, which may not have undertaken considerable research, ecosystem and socioeconomic assessments.

To facilitate the conduct of VA and its use for developing and/or refining management interventions at the local level, the PEMSEA Resource Facility (PRF) is currently working with various specialists and institutions in the selection, adoption, or development of VA tools that have the following characteristics: (a) can provide a rapid evaluation at the local level of the vulnerabilities of the coastal ecosystem to the impacts of climate change; (b) can make use of commonly collected and available data to minimize additional costs for budget-deficient local governments; and (c) simple enough to be participatory.

Employing participatory approaches to VA can enhance local understanding of climate change issues and vulnerabilities, enhance local capacity to plan or refine existing management interventions, and promote acceptance of proposed management measures.

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Coastal Strategy **How does the CS help in systematically addressing priority environmental concerns?** CS development is an essential process in developing and implementing an ICM program. Developed through extensive consultations with the stakeholders, it presents a common long-term vision and a general framework for strategies and actions to ensure the sustainable development of a given coastal area. It also provides a framework for integrated planning and management, a process for involving stakeholders, and a platform for policy reforms on good governance. Moreover, it lays the foundation for interagency and multi-sector cooperation. It is drawn up to systematically address priority environmental concerns using information from the SOC report, ERA, and IIMS. Following are the key elements of a CS: a. A long-term vision for the coastal area b. A mission statement based on the desired outcomes of the stakeholders c. Strategies that specify the approaches to achieve the vision d. Objectives that are clear statements of the strategies and approaches required to achieve the Vision and Mission e. Action programs that define how the objectives will be accomplished **What are the basic approaches and requirements in developing a CS?** The development of a CS requires commitments for human and financial resources, and basically involves the following: a. Identifying and consolidating relevant information on the marine and coastal areas of the particular site b. Organizing a training workshop for concerned personnel/facilitators involved in the development of the strategy c. Undertaking a series of stakeholder consultations that will flesh out the stakeholders' views on the values of their coastal area; issues/concerns; desired changes; long-term vision; and the strategies, objectives, and action programs to achieve the shared vision d. Consolidating the results of the individual stakeholder consultations into a CS and conducting a site-wide integration workshop to achieve consensus on the strategy e. Finalizing and submitting the CS to the PCC for adoption 6. Organizing a workshop/public event to officially launch the adoption of the CS, culminating with the signing of a stakeholders' declaration	Show examples of CS of PEMSEA sites. Refer to the CS for examples as the discussion progresses. Show the stakeholder consultation process in the development of the Da Nang Coastal Strategy.

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Why is stakeholder involvement and participation essential in CS development?

CS is considered as a "people's strategy" because it reflects the common aspirations of the community at large. The process of stakeholder consultation is long and tedious but is crucial in forging a shared vision among the stakeholders on the present and future uses of the coastal resources.

Involvement of the local stakeholders accomplishes the following:

- Ownership of the CS
- Promotion of commitment and willingness to become active partners in future environmental management programs
- Collective development of appropriate and agreed upon programs o action that will cater to the interest of the majority

The development of the CS should not take too long in order to maintain the momentum and support generated through the consultation process. The concerned local government should act to move for the adoption of the strategy as soon as it is completed. A declaration ceremony will be useful to increase public awareness of the existence of the CS. It can also serve as a venue for sharing of experiences on the strategy's development and for the declaration by the local government and concerned stakeholders and partners of their commitment to its implementation.

The implementation plan for the CS will be discussed in the following module.

How can stakeholder support for the ICM program be obtained particularly at the Initiating Stage?

From the preceding discussions, it is seen that stakeholder participation is integral in all the activities in the Initiating Stage, and throughout the entire ICM program cycle.

In the Initiating Stage, the focus of public awareness campaigns is continued information dissemination about the ICM program to obtain support for the implementation of various activities specified in the work plan. In particular, stakeholders should be made more aware of the value of undertaking the activities, the importance of their contributions, and the benefits that their participation will bring to their institutions and themselves. The value of the ICM process and the specific activities that facilitate stakeholder participation in the planning and management of their coastal area are also emphasized.

A communication plan is developed at this stage to systematize the strategies for IEC campaigns and for stakeholder mobilization. The plan includes a process for monitoring and evaluation of public awareness and information campaigns.

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Synthesis

1. When initiating the ICM program, it is essential to identify and prioritize the environmental and coastal governance issues and concerns because each of these issues would need different types and levels of policy and management interventions.

2. The activities in initiating an ICM program are basically focused on identifying priority issues and corresponding strategies and actions to address such issues.

3. The analytical tools used to determine priority concerns include SOC reporting, ERA, IIMS, and CS.

4. Inputs from the SOC, ERA, and IIMS, and from an extensive consultation process feed into the development of a CS, which provides a general framework for long-term strategies and actions to address priority environmental and management concerns.

5. The applications of the above tools/methodologies require multidisciplinary expertise, stakeholder education and participation, and local capacity development.

6. A communication plan can provide focus and direction to various efforts in enhancing public awareness on the significance of the ICM program and in obtaining participation and support.

7. In addition to committing human and financial resources for the application of the above tools/methodologies, local governments should be committed to apply the outputs/results in other activities/tasks within the ICM program cycle.

Emphasize the importance of identifying priority environmental and coastal governance issues at the Initiating Stage of an ICM program, and summarize the applicable tools and methodologies within the ICM framework that aid in priority setting.

Highlight that the outputs in this stage are valuable inputs to the activities in the succeeding stages.

Assessment

The participants should be able to discuss the importance, benefits, and applications of the tools and methodologies presented, particularly in identifying the priority environmental and coastal governance issues to be addressed by an ICM program.

They should also be able to identify the types of expertise necessary to apply these tools and assess the potential application of these tools (and possible constraints) in their respective areas.

Module 7

Stage 3: Developing Strategies and Action Plans

Description

This module outlines the processes and requirements for developing an ICM program. It highlights the prioritization for implementation of the action programs identified in the CS and how a suite of tools are applied to support the development and subsequent implementation of issue- and area-specific action plans. This module also discusses the identification of options for institutional arrangements to ensure the sustainability of the ICM program.

Duration: 1 hour

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Learning Outcomes

At the end of the module, the participants will be able to do the following:

1. Discuss the outputs and tasks necessary in this stage of the ICM cycle
2. Outline the requirements in prioritizing action programs for the development of the CSIP or SEMP based on identified threats and opportunities
3. Discuss the role of coastal use zoning in addressing multiple use conflicts
4. Discuss the importance of establishing a cost-effective integrated environmental monitoring program (IEMP) to assess changes in the level of environmental risks
5. Discuss the importance of establishing sustainable financing mechanisms in ensuring the implementation of action plans
6. Discuss how the implementation of a communication plan increases awareness and stakeholders support
7. Explain how the development and establishment of the necessary institutional arrangements ensures program sustainability

Greet the participants and present the module objectives. Keep it visible throughout the module discussion to help make learning more focused.

Review

Activities under this stage are closely linked with the outputs from the Preparing and Initiating Stages.

Facilitate a brief review of what has been discussed in previous modules. Focus on what is relevant to this module's content.

Discussion

The discussion will cover the following topics:

1. Outputs and tasks of the Developing Stage of the ICM cycle
2. Prioritizing for implementation of the action programs identified in the CS
3. Developing issue- and area-specific action plans
4. Addressing multiple use conflicts through the development of coastal use zoning plan
5. Developing a long-term and integrated monitoring program to measure environmental changes
6. Identifying and establishing sustainable financing mechanisms to support action plan implementation
7. Sustaining stakeholders participation and support
8. Identifying options for institutional arrangements to sustain ICM implementation

Further clarify the participants' learning expectations by presenting the outline of the module's discussion. Use visuals to aid your lecture-discussion.

What are the outputs and tasks in the Developing Stage of the ICM Cycle?

The Developing Stage contributes to setting in place the governance component of the management framework discussed in **Module 2** (i.e., policy, strategies, and plans; institutional arrangements; information and public awareness; financing mechanisms; and capacity development) and to addressing the sustainable development aspects of this framework through the development of issue- and area-specific action plans.

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The outputs of this stage are as follows:

1. Development of a CSIP and priority action plans and programs based on the identified values, threats, and strategies in the CS and the results of the risk assessment
2. Establishment of an IEMP, taking into consideration the results of the risk assessment
3. Identifying options for the establishment of an appropriate institutional arrangements designed to transform the project coordinating mechanism established in the Preparation Stage into a more permanent structure
4. Establishment of sustainable financing mechanisms
5. Development of a coastal use zoning scheme

Why is it necessary to prioritize the action programs identified in the CS?

The CS represents a broad management framework that addresses the priority issues threatening the sustainable development of coastal areas. The stakeholders take active part in collectively developing appropriate and agreed upon programs of action that will meet the interest of the majority of them.

The strategic actions needed to implement the CS are outlined in the CSIP. The development of the CSIP is therefore an essential step toward the achievement of the shared vision and mission identified in the CS. It also ensures that ICM efforts will not only focus on planning but also on moving the plans toward adoption and implementation.

Since it is difficult to simultaneously implement all the activities identified in the CS due to constraints in funding and local capacity, a logical and practical approach is to concentrate on priority areas. The development of the CSIP/SEMP at the PEMSEA sites therefore involves a prioritization and programming process (**Figure 7.1**), which includes the following:

1. Reviewing and ranking the problem and opportunity areas identified in the CS. The ranking is based on priority risks identified during the ERA of the ICM site as well as on other pertinent information on political capacity, human health, ecosystems, and socioeconomic conditions of the stakeholders.

2. Prioritizing the strategies and action programs based on the said risk ranking. These strategies and action program should address the identified problems/opportunity areas.

3. Reviewing existing capacities for implementation with respect to the prioritized action programs. The review will identify which actions the local stakeholders can handle on their own and which actions may require assistance in terms of financial, technical, human resource, legal, and administrative capacities.

Learning Activity 11

Post the different steps of CSIP development on the board.

Either in groups or individualy, give the participants 10 minutes to design the process of developing the CSIP in a logical manner.

Ask one or two volunteers to present their work. Sum up the presentations.

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4. Defining the timetable for the implementation of the prioritized action program based on capacity ranking

5. Defining the budget and financing scheme. The implementation plan entails the provision of human, financial, and capital resources. An estimate of the required resources is determined for each action program as well as the total resource requirements in the short and medium term.

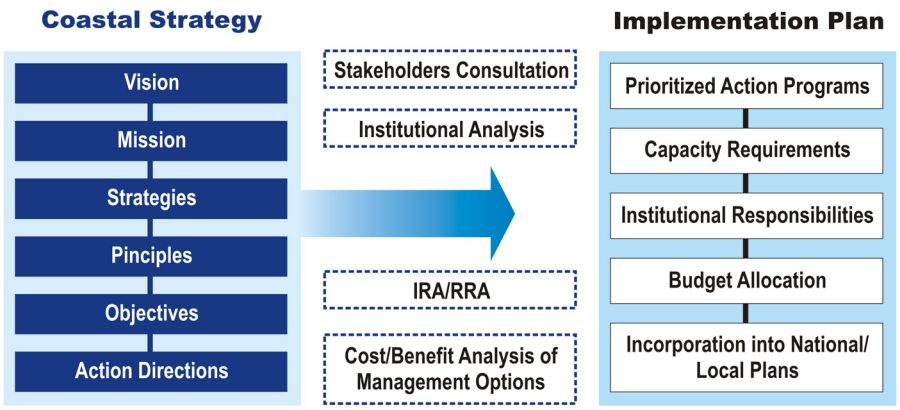
6. Defining measurable targets and expected impact for each priority problem/ opportunity area. The targets are expected to be met over the short and medium term and should be consistent with the desired outcomes and changes identified in the CS.

7. Defining the timetable for implementing the prioritized action programs. Existing activities and programs already undertaken or being undertaken at the national and local levels are identified to minimize duplication of efforts and maximize resources. **Module 8** (Adoption of an ICM Program) explains the importance of integrating the ICM policy, strategies, and action plans into the existing plans and programs of the local and national governments.

8. Development of a coordinating/monitoring mechanism. A systematic approach for monitoring includes designating a lead agency to coordinate and monitor the implementation of the plan, reviewing the current status of the action programs undertaken, monitoring progress in achieving the measurable targets and impacts, and allowing for timely adjustments of the plan.

Figure 7.1 Typical Components of CS and CSIP

The development of the implementation plan is based on the results of the technical, social, and economic evaluation of the impacts and on the urgency of issues.



Source: PEMSEA ICM Training Manual

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9. Conducting a series of consultations to review and finalize the CSIP. Through consultations with and involvement of the different levels of government authorities and agencies as well as major stakeholders, the prioritized strategies and action programs are refined. The consultation process also elicits support for the implementation of the plan, facilitate consensus building, and define sources of human and financial resources for the implementation activities.

10. Approval and adoption of the CSIP by the local government to ensure its incorporation into the broader developmental planning framework

What is the importance of issue- and area-specific action plans and what is entailed in the development and implementation of such plans?

Issue- and area-specific action plans put into operation the prioritized action programs in the CSIP as well as other plans and programs, including the coastal use zoning plan, communication plan, and the IEMP. The action plans specifically include the following:

1. Action steps or tasks to be accomplished
2. Roles and responsibilities of various agencies/sectors
3. Specific timeframe and budget to ensure that appropriate management interventions are put in place to address any of the local government's priority concerns. These concerns may fall under natural and man-made hazard prevention, habitat protection and restoration, water use and supply management, food security and livelihood management, reduction of pollution from sea- and land-based sources, and waste management.

Action plans need to be implemented by the relevant line agencies. For example, a sustainable coastal fishery action plan should be implemented by the Fisheries Department, while a beach management plan may be executed by the Department of Tourism. Waste management plans, on the other hand, should be led by the Environmental Protection Agency (EPA). These agencies should therefore be deeply involved in the preparation of the action plans. Without their involvement, it would be difficult to implement them even if the plans are well designed.

In general, line agencies are willing to be involved if they are fully convinced that the action plans can be funded and they can implement them. They should see the ICM initiative as offering them new opportunities to secure financial resources for undertaking the activities that fall under their mandates.

However, when a certain coastal area is managed for multiple uses involving several line agencies and multi-stakeholders, the PCC will have to play the coordinating role. Area-specific action plans can therefore be coordinated by a lead line agency or by a neutral agency.

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How does coastal use zoning address multiple use conflicts?

Addressing multiple use conflicts through the development of a coastal use zoning plan and its implementing arrangements is perhaps one of the most important actions identified in the CS.

Coastal use zoning or functional zonation allocates area utilization according to specific criteria, most notably ecological functions, traditional practices, and future development. It is designed to regulate economic activities in coastal areas in order to protect critical habitats. Coastal use zoning plan therefore provides the local governments with a regulatory tool for implementing the action programs identified in the CS.

Coastal use zoning has the following benefits:

1. Facilitates the implementation of marine and coastal area development plans according to stipulated policies and regulations
2. Provides scientific information to support decision-making, protect the coastal environment, direct coastal area development activities, assess and approve development projects, and plan for the rational utilization of coastal resources
3. Resolves conflicts arising from various development activities
4. Provides information for the implementation of an ICM program

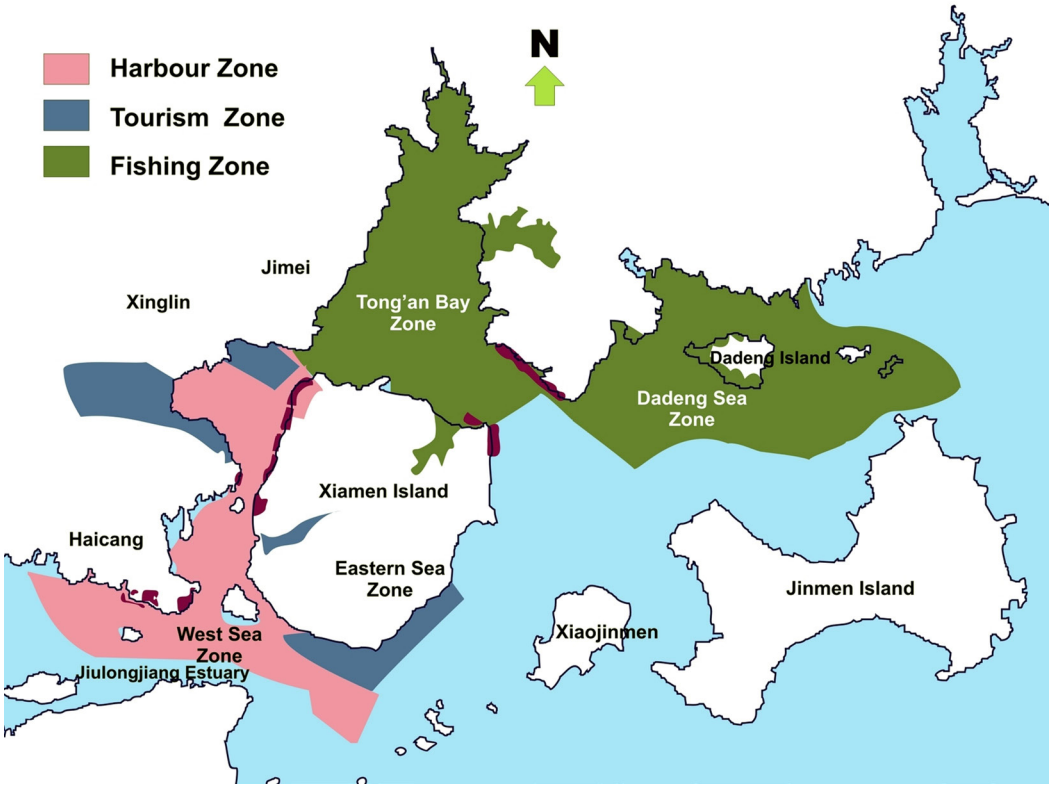
One of the most important action plans is the coastal use zoning plan to address multiple use conflicts. As an assignment, ask the participants to read the success story of Xiamen in developing and implementing its coastal use zoning scheme.

Provide copies of **Figures 7.2 and 7.3.** These figures will reinforce the participants' understanding on how the various area- and issue-specific concerns in the coastal areas can be addressed through the implementation of the coastal use zoning plan.

Provide additional examples from other sites, particularly Bataan (Philippines) and Sihanoukville (Cambodia), to show how these sites developed their integrated land and sea use zoning plans within their respective national and local contexts.

Figure 7.2 Xiamen Coastal Use Zoning Scheme

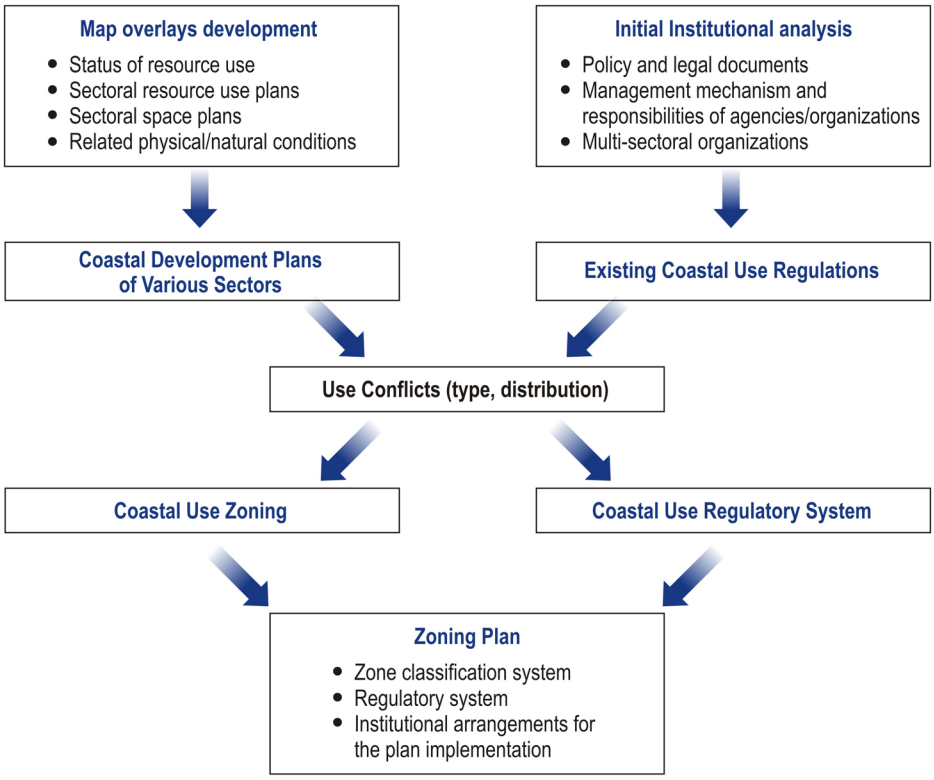
Adopted in 1997 through an administrative order, the coastal use zoning scheme of Xiamen was designed to promote rational development and utilization of marine resources and contribute to the resolution of multiple use conflicts.



Source: PEMSEA, 2006a.

Figure 7.3 Process of Developing the Coastal Use Zoning Plan of Danang (Vietnam)

Stakeholder consultation at various levels to review and validate the coastal use zoning plan is a key component of the process.



Source: Danang PC, 2005

Table 7.1 Marine User Fee System in Xiamen (fees in RMB)

Uses/Activities	Unit	West Sea			East Sea			Tong'an Bay			Dadeng Sea		
		I	II	III	I	II	III	I	II	III	I	II	III
Reclamation	RMB/m^2	30.00	45.00	60.00	30.00	37.50	45.00	7.50	15.00	22.50	1.50	2.25	3.00
Docking	RMB/m^2/year	0.30	0.75	1.50	0.75	1.50	2.25	0.25	0.45	0.75	0.15	0.30	0.40
Laying of underwater pipelines	RMB/m^2	5.00	4.50	3.00	7.50	5.00	3.00	4.00	3.00	2.50	3.00	2.50	1.50
Manufacture and maintenance of boats	RMB/m^2/year	0.45	0.75	1.50	1.50	3.00	4.50	0.45	0.75	1.50	0.25	0.40	0.45
Mining	RMB/m^2/year	1.50	0.75	0.45	4.50	3.00	1.50	1.50	0.75	0.45	0.45	0.40	0.25
Water sports	RMB/m^2/year	1.50	1.20	0.75	0.75	0.40	0.45	0.15	0.25	0.25	0.15	0.15	0.15
Recreation and hotel facilities	RMB/m^2/year	1.50	3.00	4.50	1.50	2.25	3.00	0.60	0.90	1.20	0.30	0.45	0.60
Mariculture													
Net-box in shallow marine	RMB/m^2	3.00											
Pell-mell in shallow marine	RMB/m^2/year	30.00											
Mariculture in shoal	RMB/m^2	8.00											

Note: I: Marine area from average spring tide line to 0 m isobaths
II: Marine area from 0 m to 5 m isobaths
III: Marine area more than 5 m isobaths

Source: PEMSEA, 2006a

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Zoning manages an area using prescriptions that apply to spatially defined zones. Activities within a zone are managed by specifying if they are as follows:

1. Allowed or allowed with permission, and if an activity is not specified, it is assumed not allowed unless permission is given
2. Prohibited, or allowed with permission, and if an activity is not specified, it is assumed to be allowed.

The above categories also determine how new activities are managed. In the first category, a permit will only be issued for new activities if they meet management objectives. In addition, the permit may contain conditions that minimize their negative impacts on the environment. Under the second category, new activities are allowed unless the management can demonstrate that they are inconsistent with management objectives or have adverse environmental impacts. This happens rarely, however, since it is costly and time consuming for managers to demonstrate the inconsistencies associated with each new activity.

Zoning can be applied at varying planning scales. Zoning plans can be formulated for broad geographical areas spanning political boundaries, or for a small area of only a few hundred square meters. However, the types of zones, the management objectives within the zone, and the types of activities managed within these zones vary with scale. Zones such as for tourism, agriculture, and industries are effective for broad management of a region or district, but are ineffective in managing conflicting recreational uses along a narrow beach.

While functional zonation can address development issues, its effectiveness as a management tool primarily depends on the existence of appropriate legislation and regulations, as well as political will to implement it. A zoning scheme must always be accompanied with a permit system not only to regulate the intensity of usage but also to ensure sustainable use of the coastal resources.

The Xiamen zoning scheme is the pioneer functional zoning in the East Asian region. Xiamen developed and implemented a coastal use zoning scheme in the mid-1990s by classifying the utilization of the municipal sea area according to its ecological and economic functions and its traditional practices. The scheme delineated specific zones for use as ports, in navigation, tourism, fishing, mariculture, and conservation (**Figure 7.2**). The scheme was approved through a legislation by the People's Congress and regulations to control the use of sea areas were enacted in 1997. The implementation of the scheme was applied within the sector programs and mandates of 23 agencies. To complement the regulatory provisions of the zoning scheme, a market-based instrument in the form of permit and user fee schemes was enacted through two sets of legislation: the Regulation on the Protection and Management of the Marine Environment and the Xiamen Marine Use Fee System. The marine user fee schedule is shown in **Table 7.1**. The high fees imposed by this scheme, in effect, have dissuaded incompatible activities in the location where they were applied, controlling access to and exploitation of resources. With parallel initiatives in land use planning, the zoning scheme has regulated development in the city.

The successful implementation of the functional zoning scheme in Xiamen provided a useful working model that can be replicated in other coastal areas in China and other parts of the region. Several PEMSEA sites such as those in

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Bali (Indonesia), Bataan (Philippines), Danang (Vietnam), Port Klang (Malaysia), and Sihanoukville (Cambodia) have started to develop their respective coastal use zoning plans. **Figure 7.3** shows the process of formulating the coastal use zoning in Danang while **Table 7.2** presents the functional zones under the proposed Sihanoukville coastal use zoning plan.

Why is there a need to establish an IEMP?

Environmental monitoring is an integral component of environmental management. Monitoring is conducted to identify and quantify problems, rank or prioritize these problems, assess compliance, evaluate the effectiveness of actions, and enhance general knowledge, leading to appropriate management decisions. However, conventional monitoring is mostly carried out by different regulatory, scientific, and management entities independently, with little or no coordination and communication. This leads to the following situations:

1. Duplication of effort
2. Incomparable data
3. Failure to integrate information
4. Inappropriate monitoring design and parameters, in some cases
5. Limited usefulness to managers/policymakers
6. Failure to translate results to management strategies
7. Lack of assessment of the value of the monitoring program

Failure to use monitoring data effectively in putting in place management and policy interventions could lead to continued inefficient use of resources and

During the discussion, emphasize how the results of the initial risk assessments completed in the Initiating Stage are used in designing the environmental monitoring program.

Cite examples of long-term IEMPs established at the PEMSEA sites, particularly in Xiamen (China), Batangas (Philippines), and Danang (Vietnam), and show the added value of an IEMP as against a conventional monitoring program. Provide copies of **Figure 7.4**.

Table 7.2 Functional zones defined under the proposed Sihanoukville Coastal Use Zoning Scheme

Level of Development	Functional Characteristics	Name of Coastal Use Zones
Preservation	Preservation	Zone 1. Preservation Zone
	Protection	Zone 2. Drinking Water Source Protection Zone
	Restoration	Zone 3. Rehabilitation/restoration Zone
Buffer	Low-intensity Use	Zone 4. Low-intensity Use Zone
Development	Agriculture	Zone 5. Agriculture Zone
	Fishery Management	Zone 6. Fishery Management and Fishing Port Zone
	Aquaculture/Mariculture	Zone 7. Aquaculture/Mariculture Zone
	Tourism	Zone 8. Tourism Development Zone
	Port Management	Zone 9. Port Management Zone and Shipping Lanes
	Airport Development	Zone 10. Airport Development Zone
	Multi-purpose Use	Zone 11. Multiple-purpose Use Zone
	Coastal Industry	Zone 12. Coastal Industry and Mining Zone

Source: Chua, 2006

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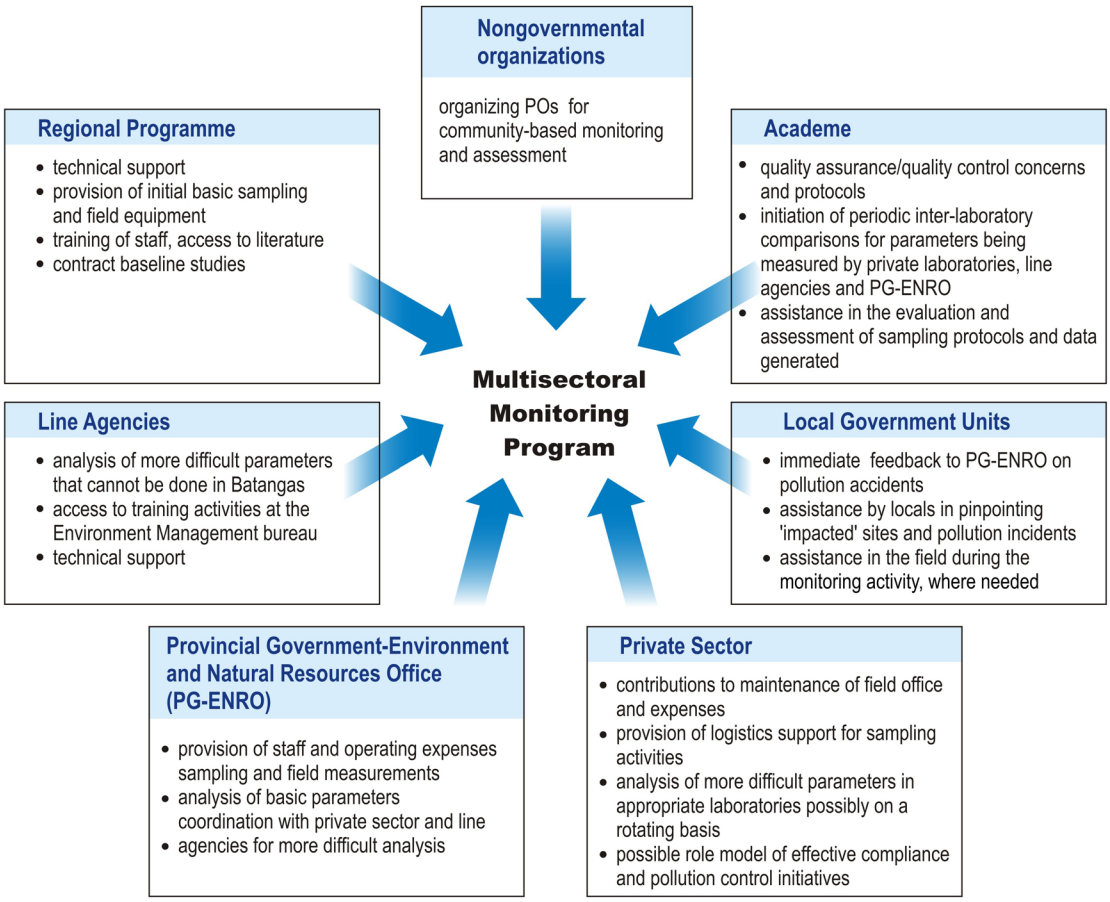
further deterioration of the environment. In view of the limitations observed in the existing approaches to environmental monitoring and the typically limited resources available for monitoring activities, the development of an IEMP is advocated by PEMSEA.

An IEMP is a systematic, cost-effective, and coordinated monitoring program that integrates pollution monitoring, resource and habitat assessment, and human health monitoring in relation to the environmental conditions in the areas. The priorities, data gaps, and uncertainties identified in the risk assessment (previously discussed in **Module 6**) provide inputs for the development of the IEMP. In turn, data from the IEMP are used to conduct the RRA, which provides enhanced information on environmental risks. Adoption of a long-term IEMP would provide appropriate and reliable information crucial for assessing the state of the environment/coast and the effectiveness of management actions.

Figure 7.4 Integrated Environmental Monitoring Program in Batangas (Philippines)

The program is characterized by linkages among government agencies, academe, NGOS, and the private sector, and sharing of associated costs.



Source: Chua, 2006

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IEMPs have been developed and implemented in PEMSEA ICM sites, the process of which have entailed the following:

1. Formation of cross-sectoral monitoring networks that have the following functions: (a) integrate efforts and resources of various agencies and institutions involved in environmental monitoring to avoid duplication of efforts and allow more efficient use of resources; (b) share information and implement appropriate data management plans and communication strategies; (c) package monitoring results in formats that are appropriate and comprehensible for identified targets; and (d) operate a feedback mechanism to assess and improve the value of the monitoring program
2. Establishment of information-sharing arrangements
3. Development of monitoring design based on identified priorities, data gaps, and mandated monitoring parameters
4. Capacity-building activities in support of IEMP
5. Establishment of mechanism for communicating results for management use
6. Development of an appropriate and sustainable institutional and organizational mechanisms for implementing the long-term IEMP and sustaining the network for monitoring, resource, and information sharing

In Batangas (Philippines), the development of the IEMP in 1994 had involved extensive capacity-building activities including setting up of an environmental laboratory, personnel training, design and conduct of pilot monitoring program, and development of a long-term IEMP. A monitoring network was established (**Figure 7.4**) that included the local and provincial governments, central government agencies, academe, private sector, and NGOs. Monitoring activities were incorporated within the budget of the PG-ENRO, while mechanisms to tap other sources of funds like the Batangas Bay Coastal Resources Foundation (BBCRF) and the Batangas Bay Municipal Council (BBMC) were developed. Co-financing arrangements were also developed, with new industries required to conduct monitoring as required in the Environmental Compliance Certificates (ECC). Other participating organizations provided in-kind contributions, such as the use of Philippine Coast Guard (PCG) vessel for sampling and analysis of coliform by the Water District. In **Module 9**, the efforts of Batangas Province in mainstreaming the IEMP as a regular program of the local government and transforming the Batangas Environment Laboratory into a revenue-generating facility are highlighted.

What are the options for generating a continuous supply of funds to support the implementation of priority action plans?

ICM programs that are supported by external funding seldom proceed beyond the planning or early implementing stages without the support of local funding. Experience with ICM programs in the East Asian region shows a higher level of success when these are incorporated into the development plans of local governments. Without such integration, the lack of funds has often resulted in failure to implement priority action plans and has been frequently used as an excuse for inaction. Innovative financing mechanisms need to be developed to ensure that action plans are implemented.

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PEMSEA's approach is to establish a situation that encourages various local stakeholders from different sectors to work in partnership to address issues of mutual concern. Environmental investment projects are identified and prioritized for joint undertakings of all sectors of the community. This creates not only funding opportunities but also a policy environment that increases confidence in the investment process, thus ensuring the acceptability and affordability of investment within the community.

PEMSEA adopts public-private sector partnerships (PPPs) as a sustainable financing mechanism for environmental investments. Conceptually, PPPs address two basic issues:

1. Creation of investments that are technically sound, financially viable, environmentally acceptable, and affordable to the users

2. Development of partnership arrangements between the two sectors that are equitable and sustainable

The private sector has both the financial resources and the skills to design, build, and transfer facilities and services to improve the environment, for example, in the planning and operationalization of wastewater treatment facilities, implementing specialized training, and undertaking environmental and natural resource surveys.

The public sector, on the other hand, ensures that the policy environment and regulatory framework are clear, which in turn encourages the private sector to enter into a joint operation with the public sector.

Another means of mobilizing the expertise and resources of the private sector is by building on the corporate responsibility of businesses that dedicates a fair share of their direct or indirect investments to coastal resources. Examples of those that can be tapped are the oil companies, food processing industry, ports and harbors, fishing industry, manufacturing firms, and tourism-related businesses. These business sectors can come together to create a foundation that provides support to the local government for the implementation of the ICM project. **Box 7.1** provides information on how the private sector played a significant role in environmental management in Bataan (Philippines).

How can stakeholder participation and support be sustained in this and the succeeding stages?

ICM offers stakeholders a participatory framework and the opportunity to take active roles throughout the planning and implementation phases of the program. Project management needs to recognize the importance of working with stakeholders particularly as the nature and problems in the coastal areas require wide involvement and participation. Forging partnerships with all levels of stakeholders by involving them as players in the various activities of the ICM program can create their interest in the program, mobilize them, and maximize the use of their skills and resources.

Stakeholder consultation and participation is an integral component of the various activities of the Developing Stage, for instance, in the formulation of

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CSIP, identification of investment opportunities, development of coastal-use zoning plan, and identification of options to institutionalize the ICM program.

In its initial stage, ICM is bound to focus on a limited set of active stakeholders. It is a practical strategy that enables coastal managers to initially focus on manageable groups, using limited funding wisely while attempting to produce visible achievements in the short term. When people begin to see improvements, they are bound to become interested and are more likely to become part of a functional network of partners.

Functional partnerships among stakeholders underpin the development of a local political constituency. The Bataan ICM program (Philippines) illustrates how this fundamental principle can be put into practice (**Box 7.1**). The Bataan Coastal Care Foundation (BCCF) is a group of 17 corporations and socio-civic organizations that supports the ICM development and implementation in Bataan. As an active partner in Bataan's PCC, the BCCF complements local government efforts to mobilize additional resources and technical expertise. Its collective acumen in business management and its provision of research data, equipment, and facilities help to sustain the ICM program.

Political concern for coastal and marine environments needs to be heightened by involving political leaders as key stakeholders. Efforts should be made to promote their active participation, not only by involving them in public awareness activities (e.g., coastal cleanup, reforestation programs for mangroves, stocking of fish in open waters, and protection of turtles) but also by recruiting them

Box 7.1 The Private Sector's Role in Environmental Management in the Province of Bataan, Philippines

Industries located in an ICM site are generally more interested in and supportive of an ICM program when they understand that its implementation contributes to improved local governance, clear policies, and consistent regulatory requirements, and that it offers an opportunity for their participation in program development and implementation. ICM contributes in developing a policy environment that is conducive to the participation of stakeholders, including industry. Through the ICM process, industry not only plays an active role in communal efforts to achieve sustainable development, it can also mainstream its role as part of local governance.

The example of the Province of Bataan showcases a strong public-private sector partnership supporting sustainable development in a coastal province. Seventeen local industries and civic organizations came together to form the Bataan Coastal Care Foundation. They partnered with the provincial government and the relevant municipal governments to establish and implement an ICM program, with PEMSEA providing technical advice and support. The foundation co-financed the operations of the provincial ICM Project Management Office, the establishment of the Bataan Project Coordinating Committee and the implementation of specific issue-oriented action plans, such as mangrove rehabilitation and mussel farming livelihood projects. The significant contribution of the private sector included the mobilization of resources and the sharing of business management. They also contributed in the provision of equipment, facilities and personnel to complement those provided by the provincial government. The members of the foundation were also fully involved in the planning and operation of the projects, in close cooperation with the provincial government.

Bataan has been recognized as a shining example of corporate responsibility because of the financial support offered for the implementation of ICM projects. Within a period of two years, Bataan won several national and international awards in testimony to its good governance, including the Anvil Award of Merit for the community-based public relations campaign "Kontra-Kalat sa Dagat" or "Movement Against Sea Littering."

Source: Chua, 2006

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to be key players in major ICM activities (e.g., public consultations on CS development, workshops, and study tours to successful ICM sites).

Side by side with the stakeholder consultation and participation process is the implementation of the communication plan developed in the previous stage of the ICM cycle. Communication strategies that take into consideration the relationships among the various partners and the important stakeholders drive the creation of networks for communicating coastal issues and management options.

In Danang (Vietnam), the Core Group of Communicators supports the implementation of the communication plan. The group, comprising of representatives from the Women's Association, the Farmer's Association, and the Danang Youth Union, among others, provides assistance in raising public awareness and mobilizing stakeholder involvement in the various activities of the ICM program. Diverse approaches are used, including distributing flyers, posters, and newsletters; organizing artistic festivals and competitions; incorporating environment-related themes into school activities; and conducting interviews and talk shows. This process has resulted to a chain of positive reactions, which can be best seen during public consultations where the people are very keen to be seen and heard. The ICM project has provided Danang a participatory framework where stakeholders take active roles during public consultations. A sense of ownership is therefore instilled, facilitating the stakeholders' active participation.

With an effective communication plan, an ICM practitioner is able to build on the advantages of an informed public and on stakeholder support. This generates stronger political will and promotes commitment for human and financial resources for implementing the ICM action programs.

What are the options for institutional arrangements to sustain ICM implementation

Ask the participants to quickly review the reasons why coordinating mechanisms are vital to ICM. Responses may include the following:

1. They provide a platform for addressing the concerns of various stakeholders.
2. They provide a transparent mechanism for decision-making regarding concerns that affect the livelihoods and aspirations of coastal inhabitants.
3. They facilitate interagency collaboration when developing or implementing management interventions.
4. They strengthen partnerships among stakeholders and create a favorable environment for the implementation of a coastal strategy to achieve a shared vision.

At the ICM sites, project coordinating mechanisms are established and usually take the form of a council or a committee. Recall that in the Preparing Stage, the PCC, which is made up of representatives from the line agencies and various sectors of civil society, including business, academe, and NGOs, is established. In most cases, the head of the local government serves as the chair of the coordinating mechanism. The PCC is tasked to provide guidance and advice on project implementation and operation, and to forge greater partnerships and collaboration among the various sectors and agencies involved in the ICM program. Through this mechanism, overlap of responsibilities or activities is avoided, turf conflicts are reduced, and interagency and sector cooperation is increased. The operation of the PCC is supported by the PMO, which is established to implement the ICM project.

Frequent changes in local leaders and key ICM personnel, however, often give rise to uncertainties, and in many cases slow down ICM operations and limit the effectiveness of the coordinating mechanisms. This problem is addressed by gradually transforming the project-based PCC into a more permanent structure, either it takes the form of a local sustainable development council or it remains as the coordinating committee for a continuing ICM cycle. The PMO may also undergo transformation during the course of an ICM project because of a change in, or streamlining of, the administrative structure of the local government.

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In addition to the PCC and PMO, other bodies established under the ICM program such as the multidisciplinary technical advisory group, the network of communicators, the integrated information and management system and risk assessment teams, the integrated environmental monitoring team, and the committee on zoning plan implementation are taken into consideration in identifying the most suitable arrangement options for institutionalizing the ICM program. During the Developing Stage, the appropriate institutional arrangements are developed based on the basic elements of governance arrangements, capacity strengthening, compliance instruments, and financing mechanisms.

Synthesis

End the module by facilitating a discussion on the key activities of the Developing Stage.

Get feedback by asking the participants if they feel that the module objectives have been met. Entertain comments and suggestions on how to improve the module.

1. The CSIP outlines the strategic actions needed to implement the CS. As such, its development is an essential step toward the achievement of the shared vision and mission identified in the CS. It also ensures that ICM efforts will not only focus on planning but also on moving the plans toward adoption and implementation.

2. Issue- and area-specific action plans put into operation the prioritized action programs in the CSIP. The action plans specifically include the steps or tasks needed to be accomplished to put in place appropriate management interventions related to any of the priority concerns of the local government.

3. Coastal use zoning or functional zonation allocates area utilization according to specific criteria, most notably ecological functions, traditional practices, and future development. It is designed to regulate economic activities in coastal areas to protect critical habitats. Coastal use zoning plan therefore provides the local governments with a regulatory tool for implementing the action programs identified in the CS.

4. An IEMP is a systematic, cost-effective, and coordinated monitoring program that integrates pollution monitoring, resource and habitat assessment, and human health monitoring in relation to the environmental conditions in the areas. The priorities, data gaps, and uncertainties identified in the risk assessment provide inputs for the development of the IEMP. Data from the IEMP in turn, are used to conduct an RRA, which provides enhanced information on environmental risks.

5. Innovative financing mechanisms need to be developed to ensure that action plans are implemented. PEMSEA adopts public-private sector partnerships as a sustainable financing mechanism for environmental investments. There are two models for PPP operation in support of ICM programs. One promotes partnership between the public and private sectors in supporting the development and implementation of the ICM program. The other promotes investment by the private sector in environmental investment projects.

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6. Project management needs to recognize the importance of working with stakeholders particularly as the nature and problems in the coastal areas require wide involvement and participation. Forging partnerships with all levels of stakeholders by involving them as players in various activities of the ICM program from planning to implementation can mobilize their interests, skills, and resources.

7. Frequent changes in local leaders and key ICM personnel often give rise to uncertainties, and in many cases slow down ICM operations and limit the effectiveness of the coordinating mechanisms. This problem is addressed by gradually transforming the project-based coordinating mechanism into a more permanent structure.

Assessment

Participants should be able to identify and explain the activities in developing an ICM Program and appreciate the usefulness, basic steps in the use, and requirements of relevant tools in developing an ICM program.

Module 8

Stage 4: Adopting an ICM Program

Description

This module highlights the importance of adopting and mainstreaming the policy, strategies, and action plans into the existing development and investment plans and programs of the local government, as well as of adopting the organizational and legal arrangements and securing funding to ensure the ICM program's sustainability and replicability.

Duration: **1 hour**

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Learning Outcomes At the end of this module, the participants will be able to do the following: 1. Discuss the outputs and tasks necessary for this stage of the ICM cycle 2. Discuss the importance of securing government approval and budgetary allocations for the ICM program 3. Explain how the adoption of the CS, CSIP/ SEMP, and action plans facilitates policy and functional integration 4. Discuss the importance of adopting the necessary organizational and legal mechanisms to support ICM implementation	Greet the participants and post the module objectives on a wall. This will remind everybody of the module's focus.
Review It was discussed in the previous module that institutionalizing the project coordinating mechanism should be a non-negotiable target of an ICM program. The recommendation for an institutional coordinating arrangement based on the results of political and organizational, social/stakeholder, legal, and	Facilitate a brief review of what has been discussed in previous modules. Focus on what is relevant to this module's content.

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regulatory analyses, as well as on the results of stakeholder consultations, provides a sound basis for convincing the local government to adopt the proposed arrangement. In the process, it encourages the local government to provide the necessary budgetary allocations to sustain the operation of the coordinating mechanism as well as the implementation of the priority action plans.

This module discusses the adoption of the appropriate organizational and legal mechanisms as well as the CS, the CSIP/SEMP and action plans, which paves the way for the institutionalization of the ICM program at the local level on a long-term and sustainable basis. It must be emphasized that securing the adoption or approval of the ICM program and its activities and outputs usually follows a stepwise or incremental approach.

Discussion

The discussion will cover the following topics:

1. Outputs and tasks of the Adopting Stage of the ICM cycle
2. Securing government approval and budgetary allocations
3. Integrating the CSIP/SEMP into the development programs or plans of the local government
4. Adopting the appropriate organizational and legal mechanisms for ICM implementation

Further clarify the participants' learning expectations by presenting the outline of the module's discussion. Use visuals to aid your lecture-discussion.

What are the outputs and tasks in this stage of the ICM Cycle?

This stage of the ICM cycle leads to the legal adoption of the outputs of the previous stages. Specifically, this stage enables the following:

1. Adoption of the CSIP and action plans
2 Securing budget allocation/funding mechanisms
3. Securing government approval of the institutional and organizational mechanisms through legal recognition

What are the conditions, considerations, and approaches for securing government approval of and budgetary allocation for the ICM program?

Preparing for the approval or adoption of the ICM program must begin as early as possible. The approval process begins as soon as the necessary program concept has been developed and accepted, and the partnership arrangements with concerned agencies and stakeholders have been formalized, such as through the approval and signing of a MOA. As the ICM program progresses to where various activities and tasks have been completed and key outputs have been generated from the various stages of the ICM cycle, the approval process for the adoption of recommendations and outputs is initiated. In the Adopting Stage, getting the CSIP/SEMP and action plans as well as the organizational arrangements adopted by the local government is a crucial exercise.

Learning Activity 12

Ask for three volunteers coming from different sites/countries. Ask them to describe the process of legal approval or adoption in their area.

The objective of the activity is to familiarize the participants with the process of legal recognition and adoption or at least make them aware of the value of knowing the legal process or program approval in their areas.

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The basic conditions for the approval of the proposed ICM program by the local government are the following:

1. Presence of the support of the central government
2. Full involvement of the concerned stakeholders
3. Financial resources are available or sources identified
4. Local capacity is adequate to undertake the project
5. Presence of local political commitment

The ICM program should be approved in its entirety and at various levels especially by the local and central governments as well as the relevant stakeholders. Although ICM implementation is the direct responsibility of the local government, the endorsement of the central government often facilitates financial allocation, policy support, and legislation. Local policy and management decisions must harmonize with existing national policy, priorities, and legislation, including those related to the implementation of international instruments.

Approval of the ICM program by the local government will result in the following:

1. Policy and institutional reforms, including policy and functional integration
2. Strengthening of interagency coordination
3. Subsequent realignment of budget

It was established in the previous modules that the relevant line agencies, specialized institutions, and other concerned stakeholders are extensively involved in the development of the CS, CSIP/SEMP, and other key activities of the ICM program. Such involvement is crucial as it ensures that the proposed action programs and plans are integrated into the respective line agencies' fiscal plans and budget. The approval of the ICM program by the local government justifies and enhances the chance of the line agencies getting budgetary approval and allocations, thus securing their support. It is therefore anticipated that implementation of management measures or interventions will have their active involvement. However, this may not be the case if the line agencies perceive the ICM efforts as competition for the limited financial resources. In most ICM sites, the PMO and the PCC facilitates the approval and adoption of the ICM program. However, sufficient efforts to secure the government's final approval of the CS and action plans, and their transformation into new legal mechanisms, are still required. The purpose of putting the PCC under the direct chairmanship of the incumbent mayor or governor is to make sure that the local government plays the coordinating role in the approval process. It also ensures political commitment.

The adoption process usually follows a stepwise or incremental approach. After setting up the project management mechanism, the next step is the adoption of the CS, the key output of the Initiating Stage. This is often followed by a political and stakeholders declaration of commitment to implement the strategy. The stakeholders of Danang (Vietnam), for instance, declared their commitment to implement the Danang Coastal Strategy through the Coastal Strategy Declaration (**Handout 8.1**). The endorsement of the CS makes the approval of the issue- and area-specific action plans possible and logical.

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How does the adoption of the CSIP/SEMP and action plans facilitate policy and functional integration?

The ICM framework and process enable the various stakeholders to work together collectively in prioritizing and resolving issues. The consultative process employed in preparing the CS and CSIP/SEMP, for instance, enables participation and involvement of all concerned stakeholders. This process promotes consensus building, which, in turn, strengthens interagency, multi-sector collaboration and cooperation, thus, facilitating functional integration.

The adoption of the CSIP/SEMP by the local government ensures the integration of the plan into the broader development planning framework of the local government. This results in the allocation of regular budget for action plan implementation as well as in the harmonization of the plan with existing national policy, priorities, and legislation.

In Batangas (Philippines), the adoption of the SEMP for the Batangas Bay Region in 1996 paved the way for its integration into the national, regional, and provincial macro socioeconomic and environmental plans and programs, particularly the Medium-term Philippine Development Plan (1993–1998), the CALABARZON Master Plan, and the Multisectoral Development Plan of Batangas Province (1995–2000). Building on the initial SEMP, a new SEMP covering the entire province was developed and adopted by the Provincial Legislative Body, and 31 municipalities and 3 cities in the Province in March 2007. This updated SEMP covers the five major aspects of sustainable coastal and marine area management, namely: man-made hazards, habitat protection and restoration, food security and livelihood, water use and supply, and pollution and waste management. The SEMP has received sustained funding for its implementation. The Batangas Province has consistently increased the amount it allocates to the ICM program each year from its budget (**Table 8.1**).

Table 8.1 Budget allocation for ICM in Batangas

Budget Year	Budget Allocation		
	MPP-EAS (US$)	PG-ENRO (PhP)	BBREPC (PhP)
1996	713,800	3,651,896	500,000
1997		5,560,483	
1998		7,014,684	
1999		7,235,908	
	PEMSEA		
2000	70,000	8,332,741	500,000
2001		8,732,942	
2002		9,469,942	
2003		11,700,522	

MPP-EAS = GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas
PG-ENRO = Provincial Government-Environment and Natural Resources Office
PhP = Philippine peso
BBREPC = Batangas Bay Region Environmental Protection Council

Source: PEMSEA, 2006a

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In Xiamen, at least 3 percent of the city's annual budget is allocated to environmental management. This shows that it is possible for an ICM initiative to be owned by the local government and that local governments are recognizing the contribution of ICM in strengthening their capacity for integrating policy and function.

As discussed in the previous module, concerned line agencies, for instance those responsible for planning, fisheries, tourism, habitat protection, and pollution reduction, among others, should be deeply involved in preparing the CSIP/SEMP and action plans since the implementation of these plans will require their active involvement. For action plans that require the involvement of several line agencies, implementation can be coordinated by a lead agency or a neutral agency.

The implementation of action plans, as will be discussed in the next stage, will significantly contribute toward achieving policy and functional integration

Why is the adoption of appropriate organizational and legal mechanisms necessary?

Appropriate organizational and legal mechanisms must be adopted to give the coordinating mechanism and executing agencies the authority and resources to implement the ICM program and action plans. The adoption therefore paves the way for the institutionalization of the ICM program at the local level on a long-term and sustainable basis. Recall that in the Developing Stage, options for institutional arrangements, particularly transforming the project-based coordinating mechanism into a more permanent structure, are identified and proposed. The authority and responsibilities of the coordinating and executing/implementing agencies are also defined, including the establishment of capacity-building measures and of financing and monitoring mechanism to determine the progress made in implementing the action plans. During the Adopting Stage, the adoption of the proposed mechanisms is undertaken. Since the adoption process also involves consultation with the relevant sectors and stakeholders, the process brings about awareness at the policy levels in all sectors.

Synthesis

1. Preparing for the approval or adoption of the ICM program begins as soon as the necessary program concept has been developed and accepted and the partnership arrangements with concerned agencies and stakeholders have been formalized, and then proceeds in an incremental manner. As the ICM program progresses to where various activities and tasks have been completed and key outputs have been generated from the various stages of the ICM cycle, the approval process continues.

End the module by facilitating a discussion on the key activities of the Adopting Stage.

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2. The adoption of the CSIP/SEMP by the local government ensures the integration of the plan into the broader development planning framework of the local government. This results in the allocation of regular budget for action plan implementation as well as in the harmonization of the plan with existing national policy, priorities, and legislation. 3. The adoption of appropriate organizational and legal mechanisms to ensure that ICM becomes institutionalized at the local level on a long-term and sustainable basis is a critical component of the ICM process.	Get feedback by asking the participants if they feel that the module objectives have been met. Entertain comments and suggestions on how to improve the module.
Assessment Participants should be able to explain the need for and importance of legal adoption of the organizational mechanism, CS, and plans; and of securing budget allocation.	The participants will be assessed after the learning activity. Ask the participants to list the key activities that they will do to have their ICM program adopted and approved in their country or local area. This is the same program that they began drafting in the earlier modules.

Module 9

Stage 5: Implementing and Managing an ICM Program

Description

This module highlights the key area of activities in the Implementing stage of the ICM cycle, particularly the consolidation of the project management arrangements through appropriate legislative procedures and the implementation of action plans to further strengthen coastal governance and address prioritized environmental improvement activities.

Duration: 1 hour

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Learning Outcomes

At the end of the module, the participants will be able to do the following:

1. Identify the outputs, tasks, and key areas of activities in the Implementing stage of the ICM cycle
2. Explain the importance of institutionalizing the coordinating and program management mechanisms
3. Explain how to facilitate and coordinate the implementation of selected action plans and why legislations to support ICM activities are needed
4. Enumerate the factors that contribute to effective ICM implementation

Greet the participants and post the module objectives on a wall. This will remind everybody of the module's focus.

Review

The importance of securing the approval of the local and/or central governments and the stakeholders for the ICM program was expounded in the previous module. Following the adoption of the various key outputs and activities of the ICM program, the ICM cycle continues and moves on to the Implementing Stage.

This module discusses the key activity areas under the Implementing Stage, particularly the process of consolidating the necessary coordinating and program management mechanisms and integrating them into the local government's institutional structures through appropriate legislative procedures.

During the first cycle of the ICM program, it is essential to build confidence among the concerned implementing agencies and the stakeholders on the ICM approach. The CSIP and prioritized action plans are implemented either by the concerned line agencies or collectively through the coordinating office. This is the most challenging stage of the ICM cycle, and it is often a test of the capability of the coordinating mechanism to facilitate inter-sectoral cooperation in the implementation of action programs.

Facilitate a brief review of what has been discussed in previous modules. Focus on what is relevant to this module's content.

Discussion

The topics to be covered include:

1. Key areas of activities in this stage of the ICM cycle
2. Institutionalization of the coordinating and program management mechanism
3. Importance of implementing the priority action plans
4. Legislations in support of ICM
5. Factors that contribute to the effective implementation of ICM
6. Role of the PMO in ICM implementation

Further clarify the participants' learning expectations by presenting the outline of the module's discussion. Use visuals to aid your lecture-discussion.

What are the key areas of activities in the Implementing Stage of the ICM cycle?

The Implementing stage involves the implementation of the CSIP and of the institutional/legal arrangements and financial mechanisms to operate the ICM program.

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Integration of the project management arrangements into the local government institutional structure through appropriate legislative procedures is also done at this stage.

Why is institutionalizing the coordinating and program management mechanisms a non-negotiable target for ICM?

The first step in ICM implementation is setting up the necessary organizational structure to support the program implementation. This includes transforming the project- based coordinating and implementing mechanisms (i.e., the PCC and PMO) into more permanent structures.

As established in earlier modules, the purpose of the coordinating mechanism is to harmonize any overlapping responsibilities of line agencies and interests of stakeholders as well as to make policy and management interventions integrative.

There is greater chance of institutionalizing the coordinating mechanism if its effectiveness is gradually strengthened through enhanced collaboration and coordination, and when interagency conflicts are reduced or resolved. These are very visible accomplishments that create political buy-in and strengthen arguments for allowing the continuing existence or further strengthening of the current PCC.

The success of several ICM demonstration sites of PEMSEA in establishing and operating permanent coordinating mechanisms dispel initial notions that establishing such a mechanism is complex or even unattainable because there is no legitimate institutional homebase for ICM. The Xiamen and Batangas experiences have served as working models for other ICM sites in the East Asian region. **Figures 5.1** and **5.2** (from **Module 5**) and **Boxes 9.1** and **9.2** show the institutional arrangements and details of the transformation process undertaken by both sites. The experiences gained in these ICM sites testify that the institutionalization of the coordinating mechanism should be a non-negotiable target of ICM practices. The institutionalization of coordinating mechanisms not only renders the ICM program sustainable since it is integrated into the local government's mechanism and development plans, but it also provides a more solid and genuine basis for decisionmaking, and promotes transparency, trust and confidence in ICM and the implementing agency. With a permanent coordinating mechanism, the local government is able to implement priority action plans according to its own timeframe and its human and financial resources capacity.

Show **Figures 5.1** and **5.2** on the wall and give copies of **Boxes 9.1** and **9.2** as supporting materials for the discussion.

Box 9.1 Institutionalizing ICM in Xiamen, PR China

The Xiamen Marine Management and Coordination Committee (MMCC) was set up in late 1995 as an interagency, multi-sector structure. The Executive Vice Mayor of Xiamen served as director, while the other Vice Mayors (in charge of transportation, agriculture, science, and city construction) acted as deputy directors. The committee members included the heads of other government bureaus and agencies. The MMCC was tasked with providing policy advice, coordinating various marine uses, and reviewing the progress of these activities. This mechanism was designed to integrate and streamline overlapping mandates, thus avoiding duplication of efforts and enhancing resource sharing among institutions.

Within the MMCC, a multi-agency enforcement team was formed to strengthen compliance with rules and regulations and to administer penalties to violators. In addition, a Marine Experts Group (MEG) was set up in 1996 to provide scientific and technical advice to policymakers. The group, composed of marine scientists, economists, and legal and other technical experts, was instrumental in the development of the Xiamen functional coastal use scheme, completion of a comprehensive marine economic development plan, establishment of a marine environmental monitoring network, and establishment of the Xiamen Coastal Sustainable Development Training Center. The MEG has effectively bridged the gap between science and policy.

When the first phase of collaboration with PEMSEA ended in 1999, the MMCC was institutionalized within the Municipal Government as the Marine Management Coordination Office (MMCO), retaining the same structure and coordinating role in the management of ICM activities. In 2002, to further improve the coordinating mechanism, the MMCO was merged with the Fisheries Bureau, forming a new agency, the Xiamen Oceans and Fisheries Bureau (XOFB). Today, the Mayor heads the Steering Group for Marine Management as the executive chair. The Xiamen City Government allocates RMB 35 million (about USD 4 million) annually to fund the operations of the XOFB, as well as other coastal and ocean-related activities.

The creation of the coordinating mechanism resulted in the promotion of policy options and decisions based on priority concerns and available capacity, with a realistic evaluation of the effects these had on whole systems: the ecology, the society, and the economy. Because coordinating mechanisms should not simply be another layer of bureaucracy, Xiamen took early action to harmonize interagency functions and operations. The efficiency exemplified in the development of the mechanism actually helped to lower the costs of delivery of services.

Source: Chua, 2006

Box 9.2 Institutionalizing ICM in Batangas Province, Philippines

The PEMSEA ICM site in Batangas, Philippines, best demonstrates how a project that is initially dependent on funding support can become a self-sustaining endeavor. Batangas Bay is an important socioeconomic resource for 14 coastal and inland municipalities. Its rapid development, however, has resulted in environmental degradation. Realizing the need to adopt new management approaches, the provincial government of Batangas signed a Memorandum of Agreement with PEMSEA to establish the Batangas Bay Demonstration Project (BBDP), applying the ICM approach to the fast developing area.

The provincial government created the Provincial Government Environment and Natural Resources Office (PG-ENRO; Ordinance 03–95) to perform the relevant devolved functions of the Department of Environment and Natural Resources and to implement the BBDP. With government budget allocation and project funding support, the PG-ENRO embarked on a series of activities to help raise environmental awareness, create partnerships, develop integrated plans, and build local capacity for ICM. In less than a year, the Batangas Bay Region Environmental Protection Council (BBREPC), a stakeholder group representing national agencies, local governments, the private sector, media, NGOs, and communities, was legally created to institutionalize the partnerships and consultation processes for conflict management and the coordination of ICM efforts. A user fee system was also established by an ordinance to generate funds for financing environmental activities.

By the end of the project, the BBDP was institutionalized through the PG-ENRO and BBREPC. The project leveraged technical and funding support from stakeholder groups to sustain ICM implementation. The increasing number of volunteers for activities such as “coastal cleanup” and “Bantay Dagat” (sea wardens) indicates the growing number of stakeholders that have become aware of their responsibilities.

The province has embarked on the implementation of a province-wide ICM program, and has replicated the ICM framework in Balayan Bay, Pagapas Bay, Talin Bay, and Nasugbu Bay (see **Module 10**). In line with the expansion of the ICM program across the province, the Batangas-wide Batangas Environmental Protection Council (BEPC) was established and adopted by the Provincial Legislative Board. The BEPC integrates the three bay-wide ICM boards and Municipal ICM Councils. The stability of the PG-ENRO, the partnerships established, the stakeholder consultative process, people’s involvement, and the establishment of financing mechanisms have been instrumental in the institutionalization of ICM in Batangas.

Source: Chua, 2006; PGB and PEMSEA, 2008

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Other PEMSEA ICM sites are likewise moving toward transforming their PCCs into more permanent structures (**Box 9.3**).

What is the importance of implementing the priority action plans?

ICM implementation includes translating the strategic and specific objectives in the CSIP/SEMP into specific actions that could be implemented by line agencies or collectively through the coordinating office. This may involve diverse activities, such as drafting relevant legislations and formulating policy for a wide range of issues, including coastal use zoning schemes, permit systems, waste management, habitat protection, integrated law enforcement, and many others. Some of these activities could be implemented in the first ICM cycle, while the others, such as legislation or more complete action plans, might be developed for implementation in the follow-on phase or succeeding ICM cycles.

It is essential that the priority actions as identified in the CSIP be developed and implemented in the first ICM cycle. By tackling key and prioritized issues with clear outputs and expected outcomes in this first cycle, the coastal manager sets the foundation for sustained ICM practices. Visible impacts encourage greater participation from stakeholders and greater "buy-in" of the ICM program by the local government. In this way, confidence, mutual trust, and good working relations are developed between the concerned line agencies of the government and the concerned stakeholders. It also strengthens political commitments.

The goals of policy and functional integration can be met through the implementation of the CSIP/SEMP. Implementation of these plans will ensure that local regulations and ordinances are strengthened, and financial resources are made available to fund various interventions. The development and implementation of the coastal use zoning scheme also contributes to operationalizing policy and functional integration.

Effective implementation considers the different timeframes of political/bureaucratic, business, and ecological cycles. The CS has a longer timeframe (about 20–25 years), while the duration of an ICM program cycle is shorter (5 years). Ideally, the project timeframe should be reduced to three to five years to coincide with the planning cycle of the local government. This allows

Box 9.3 Transformation of Coordinating Mechanisms at the Local Level

The ICM coordinating mechanisms for Bataan, Bali, Danang, Nampho, Shihwa, and Chonburi were developed under the direct chairpersonship of the heads of the local governments, initially as Project Coordinating Committees (PCCs). In the course of ICM program implementation, the PCCs were transformed into permanent mechanisms, such as the coordinating council in Bataan and the sustainable development councils in Sihanoukville and Danang. The PMO, the executing arm of the PCC, is a critical component of the coordinating mechanism. PMOs are also often transformed into more permanent institutional structures during the program.

In Danang, the PMO of the Danang ICM program has been transferred from the Department of Science and Technology to the Department of Environment and Natural Resources (DONRE) as a result of a national policy to streamline ICM practices and the task of river basin management was put under a newly created division within the Environmental Protection Agency. With the establishment of the Vietnam Administration of Seas and Islands in March 2008, which is tasked to coordinate the integrated and unified state management of seas and islands, including coastal areas, the Danang Agency for Seas and Islands (DASI) was also created at the local level. The ICM Office with staff and budget has been mainstreamed into DASI under DONRE with supporting decision from the People's Committee. The transformation of the PMO has resulted in stronger functionality and effectiveness.

Source: Chua, 2006

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sufficient time for local governments to make the necessary institutional and budgetary arrangements. Legally constituted institutional arrangements can transcend political changes.

In implementing an ICM program, the PCC and PMO should be conscious of the following:

1. Meeting the expectations of the government and the stakeholders
2. Generating results that can showcase the value of ICM intervention
3. Harmonizing interagency interests using a shared vision, objectives, and common platform
4. Identifying and resolving conflicts and constraints arising from financial resource allocation, change of personnel, and change of political and institutional leaderships

Project activities must be implemented in a timely fashion and deliverables must be ensured according to work plan and budget. Implementation efficiency will grow with experience and maturity of the program.

Integrated environmental monitoring program (IEMP)

The pilot monitoring program, which serves as basis for the long-term IEMP, is completed during the Developing Stage. In the present stage, the implementation of the long-term IEMP is directed towards the following tasks:

a. Assist in tracking the environmental conditions of the area in question
b. Evaluate the effectiveness of management actions and programs
c. Provide essential information that can be used to redirect and refocus the CSIP/SEMP
c. Lead to decisions toward reducing environmental degradation

Show how the ICM Program in Batangas Province (Philippines) facilitated the establishment of the IEMP in the early stages of the program and how the local government addressed the challenges of institutionalizing the monitoring program, which eventually led to the establishment of the fully operational and sustainable BEL.

As expounded in the previous modules, the IEMP aims to demonstrate and promote the adoption of a cross-sectoral and sustainable monitoring program to support environmental management and decision-making. Xiamen and Batangas are examples in establishing marine monitoring networks where monitoring efforts are optimized; resources are shared; and methods, standards, and results are exchanged, proving the cost-effectivity of the measure.

The IEMP in Batangas had gone through several stages of development over the past two decades starting in 1994 that culminated in the establishment of the Batangas Environment Laboratory (BEL), the first local government-owned laboratory in the Philippines.

BEL continues to improve as an environment laboratory. To be able to pursue its plan to accommodate environmental samples for compliance monitoring, BEL secured all requirements for recognition from different certifying agencies, such as Hazardous Waste I.D. Registration issued in March 2006, ECC issued in December 2007, Certificate of Compliance to the Regulation of Fire Code of the Philippines of PG- ENRO BEL Project issued in October 2008, Accreditation for Pollution Control Officer issued for the Batangas Environment Laboratory Project in September 2008; and the DENR certificate of recognition signed by the Department of Health (DOH) issued in July 2012.

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To date, the laboratory has 28 ambient water and air quality tests recognized by the DENR-EMB. It is also accredited by the DOH for bacteriological, physico-chemical, and heavy metals tests. BEL is now the technical arm of the Provincial Government of Batangas that provides scientific data to determine the quality of different bodies of water. It monitors not only the water quality of Batangas Bay and its tributaries but also the groundwater resources in the province.

The outputs of the IEMP are included in the regular SOC reporting of the local government.

Coastal use zoning plan

The implementation of the coastal use zoning plan, and ideally, its integration with the land use plan, are also critical activities during this stage. The successful implementation of a functional zoning scheme in Xiamen, which is largely an integration of existing coastal use zoning practices and sectoral zoning plans, has been highlighted in the previous modules. The permit system associated with the zoning scheme has served as a strong legal instrument that reinforces the scheme's implementation. For a zoning plan to get implemented, it is necessary to meet the following conditions:

Show examples of local ordinances from Bataan (Philippines) and Sihanoukville (Cambodia) that support the implementation of the integrated land and sea use zoning plans.

1. Adopted by the local government
2. Supported by local ordinance to reinforce the zoning scheme
3. Accepted and supported by the stakeholders
4. Operated through proper institutional arrangements in terms of enforcement and issuance of permits

Why are supporting legislations needed for ICM implementation?

To strengthen ICM, particularly the implementation of action plans, supporting local regulations and appropriate legislations are necessary.

Table 9.1 shows the various legal instruments that were put in place in Xiamen from 1994–1997, while **Box 9.4** shows the local regulations and ordinances that were passed in Batangas to strengthen the implementation of the SEMP. In Xiamen, the legal instruments, developed within the framework of the national marine legal system, drew support from various agencies and were instrumental in the resolution of resource use conflicts. These also served as platforms for effective cross-sector coordination, scientific decision-making, and use of market-based instruments. In particular, the Regulation on the Use and Management of the Xiamen Seas comprehensively addressed cross-sector concerns and questions on multiple uses of Xiamen's coastal waters. The regulation institutionalized the interagency coordinating mechanism and stipulated the creation of marine functional zoning, as well as the permit and user fees for Xiamen's marine waters.

Remind the participants of the following factors that influence action plan implementation:

1. Constraints in funding
2. Constraints in local capacity
3. Sequential dependence of some action plans on others
4. Concentration on priority areas where multiple use is causing environmental catastrophes
5. Concentration on implementing action plans that can possibly show visible results in a relatively short timeframe

Table 9.1 Development of Legal Instruments for the Marine Environment in Xiamen

Year	Major Project Activities	Legal Instruments
1994	• Strengthening local government commitments • Public awareness campaign	• Regulation for Environmental Protection
1995	• Integrated management committee/office established • Profile/environmental management plan prepared • Marine laws reviewed and new legal instruments proposed	• Regulation for Managing the Resources of Sands, Rocks, and Soils • Regulations for the Management of Navigation • Municipal Ordinance for Egret Nature Reserve in Dayu Island • Administrative Rules on the Relocation of Aquaculture in the Marine Area for the Siting of Xiamen Shipyard • Administrative Rules for Strengthening the Management of Catching Marine Eel Larvae • Regulations for the Management of Water Resources
1996	• Yuandang Lagoon case study • Waste management problems assessed • Aquaculture impact study • Integrated monitoring system established	• Municipal Ordinance for Managing Yuan Dang Lagoon Area • Municipal Ordinance for Urban Landscaping and Environmental Health • Administrative Rules for Aquaculture in Shallow Seas and Tidal Flats • Regulations for Marine Environment Protection
1997	• Integrated environmental impact assessment • Functional zoning scheme developed • Studies on sustainable financing mechanisms	• Regulations for the Uses of Sea Areas • Regulations for the Protection of Chinese White Dolphins • Regulations for the Management of Tourism • Xiamen Marine Functional Zoning Scheme • Xiamen Marine User Fee System

Source: Chua, et al., 1999

Box 9.4 City and Municipal Ordinances in Batangas, Philippines

Ordinances on comprehensive waste disposal and management systems

- Local Government Units (LGUs):
  Batangas City, Bauan, and Lipa City
  Description: Institute a comprehensive waste disposal and management system prescribing the levels of garbage collection fees according to the type of establishment, provide instructions for the correct methods of waste disposal and the time of collection, stipulate penalties for violators

Fishery ordinance

- LGU: Mabini
  Description: Provides zoning regulations, identifies the villages *(barangay)* covered and minimum bids for acquiring fishery rights or user rights, requires fishing boats to obtain licenses from the Mayor

- LGU: Bauan
  Description: Prohibits the use of cyanide in fishing in municipal waters, prohibits the use of spear fishing

Anti-littering ordinances

- LGUs: Mabini, Bauan, San Pascual, Alitagtag, Padre Garcia, Rosario, and Ibaan

- Description: Prohibit the indiscriminate dumping of garbage in the streets and public places, require traders and public utility vehicles to provide their own garbage cans

Source: Chua, 2006

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What are the factors that contribute to successful ICM implementation?

1. ***Shortened but thorough planning process.*** Making plans can be shortened if these are prepared by knowledgeable and experienced ICM practitioners. In preparing the CSIPs, concerned local government and line agencies must be involved to increase their sense of program ownership.

2. ***Attainable objectives and clear work plan.*** Programs with clear and attainable objectives and a well-defined work plan will be more acceptable.

3. ***Applicable to local conditions.*** Projects or programs should be sensitive to the local socioeconomic, cultural, and political conditions.

4. ***Address priority concerns of the government.*** Specific projects should meet identified priorities of the government for it to commit funds to implement an ICM program.

5. ***Clear institutional arrangements.*** The role and function of the line agencies involved in the implementation of an ICM program should be well-defined from the early stage of the program. Lack of clarity on organizational arrangements often results in "turf disputes."

6. ***Sustainable budget.*** Funding for project implementation should be explored even while program activities are being formulated. External funding should have a government counterpart. Funding from the government shows its commitment to the ICM program. Most of the recommended activities generally fall within the jurisdiction of specific line agencies. Hence, these activities should be integrated into each line agency's regular functions so that the corresponding budget may be provided through their regular budget line.

7. ***Strong interagency acceptance.*** Acceptance by line agencies minimize organizational conflicts and budgetary constraints, making implementation smoother.

8. ***Clear government commitment.*** The level of government endorsement of an ICM program is reflected in the form of institutional arrangements and budgetary commitment. To ensure efficiency in program implementation, the government should ensure that the various line agencies are committed to implementing the program.

Solicit the inputs of the participants on additional success factors that may be unique in their respective sites.

What is the role of the PMO in implementing the ICM program?

An ICM manager should always be mindful of the factors that contribute to the successful implementation of an ICM program from the time the program is initiated and throughout the entire ICM process. Once an ICM program has been formulated and adopted by the relevant authority, including the coordinating functions of the PCC, managers must ensure that the program is properly and efficiently implemented and managed to achieve the set goals and targets.

The primary role of the PMO, among others, is to facilitate the coordination of interagency or inter-sectoral implementation of specific action programs identified in the ICM program.

Learning Activity 13

Allow 20 minutes for a brief group discussion on the participants' experiences in implementing their coastal management programs, focusing on the following:

1. Enabling conditions that contributed to the timely adoption and institutionalization of strategic measures and mechanisms for ICM implementation

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Implementation refers to management actions that must be taken to operate an ICM program.These include the following: 1. Reorienting the focus from program development to program implementation, which entails, among others the following: transformation of the role of the PCC and PMO, streamlining of program implementation, strengthening of interagency coordination and cooperation, creation of a regular stakeholder consultation mechanism, and monitoring of progress and reporting 2. Consolidating the operational function of the coordinating mechanism by completing the transformation of the PCC and PMO from a temporary to a regular government structure with staff and budget 3. Implementing prioritized activities that strengthen coastal governance, specifically the strengthening of legislative support, capacity development, policy and functional integration, scientific advice, and information management and communication 4. Implementing prioritized environmental improvement activities, including related projects undertaken by line agencies	2. Challenges in implementation/ perceived gaps 3. Factors that may affect implementation After the discussion, summarize the key points identified.
Synthesis 1. Once an ICM program has been formulated and accepted for implementation, it should be properly and efficiently implemented and managed to achieve the set goals and targets. 2. The first step in ICM implementation is setting up the necessary organizational structure to support the program implementation. This includes transforming the project-based coordinating mechanisms into more permanent structures. 3. ICM implementation begins by translating the strategic and specific objectives in the CSIP/SEMP into specific actions that could be implemented by line agencies or collectively through the coordinating office. 4. It is essential that the priority actions identified in the CSIP are developed and implemented in the first ICM cycle. By tackling key and prioritized issues with clear outputs and expected outcomes in this first cycle, the coastal manager sets the foundation for sustained ICM practices. 5. To strengthen the ICM program, particularly the implementation of action plans, supporting local regulations and appropriate legislations are necessary. 6. Awareness of the factors that contribute to successful ICM implementation will help increase the level of success.	End the module by facilitating a discussion on the key activities of the Implementing Stage. Get feedback by asking the participants if they feel that the module objectives have been met. Entertain comments and suggestions as to how to improve the module. The participants will be assessed after the learning activity. Ask the participants to list the key steps and activities they will do to implement and manage an ICM program in their country or local area.
Assessment Participants should be able to explain the requirements for the effective and efficient implementation of an ICM program.	

Module 10

Stage 6: Refining and Consolidating

Description

This module outlines the process of refining the ICM program based on continuous feedback from the stakeholders and from the results of performance monitoring and evaluation. The module emphasizes that the cyclical nature of ICM allows for improvements in methodology and approaches, and for refinement of action programs. The module also looks at replicating local ICM efforts as part of the forward-looking goals of the ICM program.

Duration: 1 hour

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Learning Outcomes

At the end of this module, the participants will be able to do the following:

1. Explain how the principle of adaptive management can be applied in ICM
2. Describe how the results of monitoring and evaluation contribute to the refinement of the ICM program
3. Explain how the SOC reporting system can enhance the effectiveness and sustainability of ICM programs
4. Discuss the importance of and approach to scaling up ICM efforts

Greet the participants and post the module objectives on a wall. This will remind everybody of the module's focus.

Review

Uncertainties associated with managing diverse human activities and their impacts on complex coastal ecosystems require adaptive management and program refining mechanisms. As described in **Module 2**, adaptive management is one of the fundamental principles of ICM and, together with integration and coordination and ecosystem-based management, forms the foundation of ICM practice.

The Refining and Consolidating Stage prepares the ICM program for its next cycle by carefully assessing the feedback from stakeholders as well as analyzing the results of the monitoring and evaluation process. The next ICM cycle begins when new actions are formulated and implemented based on the experience and foundation established in the previous program. Thus, integrating the ICM program into the planning and development program cycle of the local government during the current ICM cycle is very critical. It does not only ensure the continuity of the ICM program into the next cycle, but it is also through this process that the environmental risks caused by human activities can be gradually reduced, mitigated, and controlled.

As ICM practice evolves, so does the need to further improve its effectiveness. The establishment of a regular reporting system to monitor the progress and outcomes against the sustainable coastal development goals and targets of the ICM program is one of the key initiatives of the ICM process. Placing more coastal areas under an integrated planning and management regime through functional or geographical scaling up is the next challenge for coastal management.

Facilitate a brief review of what has been discussed in previous modules. Focus on what is relevant to this module's content.

Discussion

The discussion will cover the following topics:

1. Applying adaptive management principle in ICM practice
2. Refining and consolidating based on program monitoring and evaluation results and stakeholders' feedback
3. ICM Scaling up

Further clarify the participants' learning expectations by presenting the outline of the module's discussion. Use visuals to aid your lecture-discussion.

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How does the application of the principle of adaptive management complement ICM practice?

Adaptive management is often referred to as a "learning by doing" approach (**Figure 10.1**). It is based on the premise that information and knowledge about resource systems and how to manage them are largely uncertain and incomplete; thus, a flexible approach to dealing with these systems is required.

Adaptive management is underpinned by an iterative "plan, implement, assess, and re-do" framework, which is similar to ISO's "plan-do-check-act" (PDCA) process and the ICM cycle. As shown in **Box 10.1**, the major activities of ICM basically follow that of the PDCA cycle of ISO. As such, the ICM and ISO can actually be viewed as expressions of adaptive management.

The principle of adaptive management can be applied throughout the ICM process to address ecological uncertainties and changing political and management conditions. Changes in the political and management conditions can be induced by the following:

1. Policy changes
2. Political interventions
3. Changes in key project personnel and public opinion
4. Varying responses of stakeholders to management interventions

ICM practitioners must be prepared to make appropriate administrative or management adaptations in response to these conditions. The ICM process allows revisiting of those issues that, because of a lack of priority or inadequate scientific information, have not yet been addressed or have just been partially addressed. This is a process of adaptation that is permitted within the ICM framework and is facilitated by its procedures.

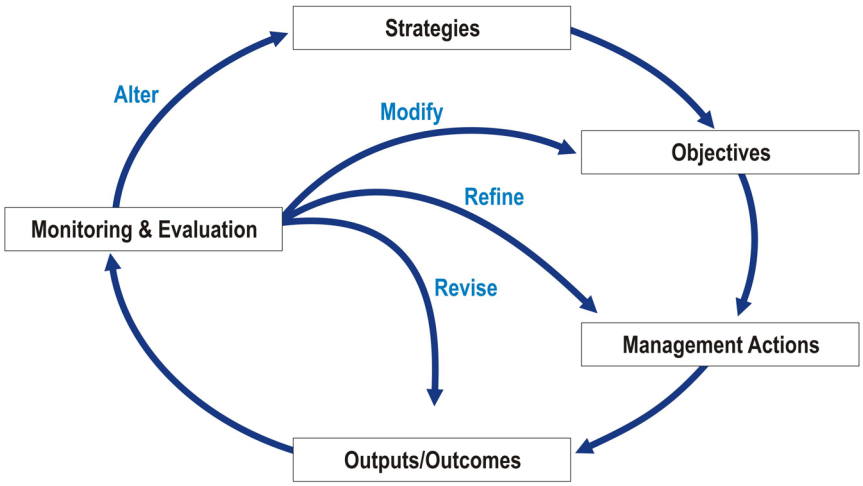
Remind the participants that the principle of adaptive management was previously discussed in **Module 2**. Post **Figure 10.1** (Application of Adaptive Management in ICM) on the wall and provide copies of **Box 10.2**, which gives examples on how adaptive management was applied in certain stages of the ICM program in Xiamen and Bataan.

Stress that no two sites are alike in terms of political, socioeconomic, and ecological attributes, thus requiring variations in approach. Also emphasize that the ICM program has to be adjusted to changing conditions and the success of that adjustment would depend to a large extent on the management skills, intuition, and experience of the coastal managers and practitioners.

Encourage the participants to share their ideas on how adaptive management is applied in the various stages of the ICM program.

Figure 10.1 Application of Adaptive Management in ICM

The process is characterized by feedback loops and space to adjust strategies, objectives, management actions, and desired outputs and outcomes in response to new information and/or changing conditions.



Source: PEMSEA ICM Training Manual

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How well the adaptations are made depends, to a large extent, on the intuition, management skills, and experience of the ICM practitioners. Although there are no fixed and fast rules, adherence to the following guidelines can help in successful adaptation:

1. ICM is a government initiative and should always operate within the government framework and the inherent governmental bureaucracy.
2. The process of adaptive change takes time, sometimes more than a year. A great deal of patience is needed.
3. Most of the issues that arise are related to personality or political conflicts. These sensitive issues must be handled with a high degree of political intuition and interpersonal skills.
4. The ICM framework and processes are resilient enough to adapt to these changes.

Box 10.2 shows how adaptive management was applied in the development and implementation of ICM programs in Xiamen and Batangas.

How does the M&E process contribute to the refinement of the ICM program?

The purpose of the M&E is to determine the extent to which an ICM program is achieving its objectives. It ensures timely interventions to help projects and programs meet set objectives. It provides opportunities for refinement or adjustment of financial and logistic support. It measures the changes that have occurred in relation to the set objectives within the given timeframe, and also assesses the impacts of outputs against the values of inputs. M&E also identifies the strengths and weaknesses of program implementation with respect to efficiency and effectiveness.

Box 10.1 Similarity between the Basic Requirements of ICM and ISO

The **Preparing Stage** of ICM corresponds to the ISO stock-taking stage. Identifying human and financial resources is important in this stage, as is training of core staff. ICM's management boundary roughly corresponds to ISO's scope and boundaries.

ICM's **Initiating** and **Developing Stages** are equivalent to the ISO plan stage. The stakeholder and governance analyses conducted at these ICM stages are equivalent to the ISO customer/citizen approach and quality management system planning, respectively. ICM talks about developing a Coastal Strategy as well as issue- and area-specific action plans; ISOs correspondingly contemplate the realization and design of planning services and development planning.

ICM's **Adopting** and **Implementing Stages** are equivalent to the ISO do stage. ICM's organizational, coordinating, and legal mechanisms can be equated to ISO responsibility, roles, resources, and management representatives in local government; these parallel concepts are fundamental to both management systems. What is clearly articulated in the ISO during this stage is the requirement to document and control internal communication. This process is the major requisite for auditing and validating conformance to the set of standards, and accordingly, for ISO certification. ICM recognizes the importance of these processes as well, as reflected in the ICM Code, manuals, and documentation of experiences and impacts that are currently being pursued aggressively.

ICM's **Monitoring** and **Evaluation Stages** are equivalent to ISO's check stage. The analysis of performance indicators drives ICM during this stage, while ISO is governed by audit and conformance analyses.

ICM's last stage, the **Refining and Consolidating Stage**, is equivalent to ISO's act stage. Both management systems underscore the importance of a review process during this stage; both stipulate the inclusion of corrective action and, in the case of ICM, revisions of the strategies and action plan, if a need for such is demonstrated or if continual improvement is required for scaling up.

Source: Chua, 2006

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Evaluating the performance of the ICM program can be done at two levels: based on the ICM process-oriented objectives and based on long-term impact and sustainability objectives. Monitoring of the program and periodic evaluation of project performance against the identified indicators are conducted throughout the ICM cycle (i.e., from planning to implementation). In the Refining and Consolidating Stage, the refinement of the ICM program not only takes into consideration the results of the M&E and stakeholders' feedback but also the needed responses to diverse challenges, including political and administrative changes, social and economic factors, and consumption and use patterns. Refinements of program activities are a continuous process in response to the outcomes of the M&E.

SOC reporting complements the M&E process by providing the framework and process in which the status and conditions of the marine and coastal environment are continuously monitored. It therefore provides an efficient feedback mechanism on the effectiveness of action plan implementation as manifested in the environmental, socioeconomic, and governance changes that are attributable to ICM implementation.

Experiences at the PEMSEA sites show that an ICM cycle may take between five to ten years to complete depending on the capacity of the local government. With increase in capacity and availability of resources, however, an ICM program can be developed and become operational within three years. Depending on the timeframe in which the first generation ICM cycle is completed, changes may already be noticeable. However, since the socioeconomic and ecological impacts of the ICM program may take longer to become visible and quantifiable, SOC reporting should be a continuing endeavor. Updating of the information and improvement of the SOC framework can be accomplished prior to the start of the second-generation ICM cycle.

Box 10.2 Examples of Adaptive Management in the Xiamen and Bataan ICM Sites

The ICM initiative in Xiamen suffered a brief operational interruption in 1998 when the entire project staff was changed by the city government as a result of a severe personality conflict between the project leader and his immediate supervisor. It took some time for the new team members to learn the management framework and adopt it, adjusting their operational procedures to enable the execution of ICM activities. The fact that ICM was operating within the government's institutional framework enabled the project to continue despite this staff change. With sufficient training and field exposure, the new staff members were able to take on their responsibilities efficiently. Subsequently, in 2002, a smooth transition in the city leadership further strengthened the ICM operation.

The ICM initiative in Bataan, Philippines mirrors the Xiamen experience. In 2004, a change in leadership in the provincial government resulted in an almost one-year suspension of project activities. ICM had been the flagship project of the former governor, who had established the program under a partnership arrangement with the Bataan Coastal Care Foundation, a foundation established by companies operating in the province. The project responded to the leadership change with utmost patience, allowing the new governor to take his time to review the project approach, its operation, and the benefits it would provide to the province. The new governor was invited to participate in a study tour to Xiamen and in a meeting of the Regional Network of Local Governments Implementing ICM (RNLG) in Bali, Indonesia. Some adjustments were also made to include his priority concerns in the ICM program of work. Finally, the governor was convinced of the benefits of ICM and became a strong local leader and champion of the ICM cause. Again, the resiliency of the ICM framework and dynamics allowed such adaptive management to take place.

Source: Chua, 2006

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Why is there a need for a long-term and sustainable M&E plan?

Since most stakeholders are primarily interested on how ICM will improve environmental conditions, or help achieve sustainable coastal development, the objectives of M&E should go beyond the initial period of ICM implementation. Given the inevitable lag in human and ecosystem responses to ICM interventions, it is critical to ensure the sustainability of M&E arrangements so that changes may be measured and assessed over a practical and relevant time period. Ensuring the institutional capacity of the concerned participating government and nongovernment-specialized agencies to undertake long-term M&E and utilize the obtained information in refining ICM programs are therefore critical. Thus, a premium is placed on devising a practical and efficient M&E plan that can be reasonably sustained and with outputs that can be readily used by governments and other concerned stakeholders for management response.

In most cases, refinements are made at the operational and strategic levels based on the outcomes of regular M&E activities. However, refinements are also sometimes made in response to political and administrative changes.

What refinements are needed at the operational and strategic levels?

The ICM program can be refined at the operational level in terms of the following: (a) organizational structures; (b) functional processes, including coordination, policies, regulations, administration, and enforcement; (c) budgetary arrangements; and/or (d) human resources and management capacity.

At the strategic level, based on the evaluation of program impacts (such as changes in ecological and social conditions), there might be a need to refine program goals and strategies, which requires the revision of long- term CS and CSIPs/SEMPs. Such a revision is needed when the program faces unforeseen changes in coastal ecosystems or unexpected management challenges, such as when new types of multiple use conflicts surface as a result of changes in consumption patterns or market conditions.

What refinements are needed in response to political and administrative changes?

Changes in political leadership and administration, such as government reorganization or transfer of ICM program personnel, could influence the continuous operation of the ICM program. However, the changes could also become sources of opportunities for program refinement. To sustain the program in case of leadership change, ICM practitioners have to be sensitive to political changes. They have to respond to the concerns and interests of the new political leader, and refine the program focus/ priority actions within its long-term goal and strategies when needed and if justified.

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Learning Activity 14

Explain the two levels of evaluating the performance of the ICM program — based on ICM process-oriented objectives and based on long-term impact and sustainability objectives — and the importance of developing ICM indicators to measure the ICM program's performance and progress.

Discuss how an indicator framework for SOC reporting is developed based on the SDCA Framework and how the indicators can be applied to most sites. It is also important to explain that the SOC indicator framework is able to integrate the various indicators already developed under Agenda 21, the UN MDGs, UN SDGs, WSSD, Rio+20, SDS-SEA, CBD, Aichi Targets, Paris Agreement, FAO, UNFCCC, Hyogo Framework of Action, Sendai Framework, GPA, and IWRM.

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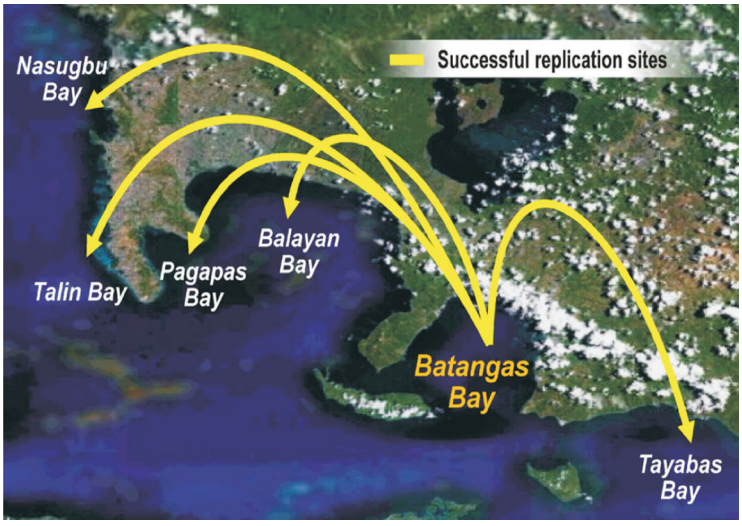
Government reorganization can bring about serious issues in the operation of an ICM program. The change in political leadership may involve budget cuts, decreases in human resources allocation, and changes in management authority and responsibility, among others. On the other hand, it can also provide a window of opportunity to expand the program, incorporating a broad level of management authority under the ICM program framework, which would bring more management resources. To take advantage of such opportunities, the program should be aware of potential areas for refinement. Specific strategies for refining the ICM program should be prepared and submitted to concerned authorities in a timely manner.

Personnel changes can also significantly affect program operations, as the loss of experienced personnel means loss of accumulated management expertise, knowledge, and experiences. To prevent this situation, continuous capacity-building efforts should be conducted. Documentation of personnel knowledge and experiences through case studies is also necessary so that succeeding personnel can learn from previous practices. Program managers should be cautious so that changes in personnel will not disrupt the implementation process and divert program focus and priorities. Depending on program resilience and the influence of various stakeholders, the program may go through major refinements based on the new initiatives of the program personnel.

Why scale up ICM?

The ICM sites serve as "critical mass" or a network that have demonstrated confidence and capacity in ICM implementation. They offer practical, workable experiences and knowledge to other would-be areas interested in implementing an ICM program. Many practitioners see them as "levers" or "tipping points" that can push and encourage other areas to replicate ICM programs. As long as many sites are practicing effective ICM programs and are influencing other areas to do the same, the benefits of ICM can be expected to multiply exponentially.

Figure 10.2 Replication of ICM Efforts in the Batangas Bay region



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Scaling up involves activities in several contexts, namely:

1. Geographic expansion of ICM practices through parallel replication of a local ICM program and transferring ICM experiences to other coastal areas. A good example is the successful replication of ICM in Balayan Bay to other bays in the western part of the province, namely the Pagapas Bay, Talin Bay, and Nasugbu Bay, building on experience from the Batangas Bay region (**Figure 10.2**).

   The Selangor State in Malaysia represents another good example of successful replication of ICM in the PEMSEA sites. Over the past 10 years, the Selangor State Government has shown significant progress in expanding its management plans and strategies for the sustainable development of its coastal areas, which eventually led to 100 percent coverage of the state's coastline. Starting in Port Klang in 2001, which consists of two districts namely Klang and Kuala Langat in partnership with PEMSEA, the ICM program was replicated to the Northern Selangor area covering the coastline of Kuala Selangor and Sabak Bernam districts. In 2013, the program was replicated in Sepang District. Replication of ICM in these sites was initiated in partnership with Sabak Bernam District Council, Kuala Selangor District Council, and Sepang Municipal Council, respectively.

2. Functional scaling up through integrating the management of river basins and watersheds with the management of coastal and marine areas to address the various cross-boundary issues. The case of Xiamen is a good example. After more than a decade of practicing ICM within its administrative boundary, Xiamen now recognizes the importance of

Cite examples in Malaysia, the Philippines, Thailand, and Vietnam where geographic expansion of ICM practices are being pursued. Post **Figure 10.2** on the wall showing ICM replication in the Batangas Bay region.

Provide copies of **Executive Order 533**, signed by the President of the Philippines, setting the direction for ICM implementation in the country in support of sustainable development.

Present the case of Vietnam where a national ICM program framework is being developed based on the Prime Minister's decision in order to achieve the national government's target to place half of the country's coastline under an ICM program.

Ask the participants if similar opportunities are imminent in their respective countries. If there is none, ask them to come up with recommendations on how scaling up can be facilitated, taking into consideration the available case studies from other countries or sites. Write down the recommendations.

Box 10.3 ICM as a Policy Framework for Sustainable Development

The signing of Executive Order (EO) No. 533 by President Gloria Macapagal-Arroyo on 6 June 2006 was a significant milestone in the long history of coastal management in the Philippines. It sets the direction for better coastal management by providing an operational path and a framework for the effective implementation of ICM programs in support of sustainable development.

The EO specifies that ICM will be adopted as a national management policy framework to ensure the sustainable development of the country's coastal and marine environment and resources. To realize this goal, ICM programs will be implemented in all coastal and marine areas by key national and local agencies, with the participation of relevant civil society groups and NGOs, academe, and the corporate and private sectors. The programs will address the inter-linkages among associated watersheds, estuaries and wetlands, and coastal seas. The Department of Environment and Natural Resources (DENR), in consultation with other concerned agencies, sectors, and stakeholders, shall spearhead the development of a National ICM Program that will delineate the principles, strategies, and action plans for on-the-ground implementation of ICM programs, which will include formulation of national ICM targets and development of a national ICM coordinating mechanism.

In support of ICM program implementation, and with the aim of strengthening it, specific activities that build on the lessons learned from past ICM practice have been identified. These include integrating ICM into primary and secondary education curricula, developing ICM training programs for LGUs, conducting environmental and natural resource accounting and valuation assessments for ICM planning, and establishing and maintaining a coastal and marine environmental information management system. To measure the progress of the program implementation, appropriate reporting mechanisms are outlined for action by the DENR and the LGUs. Sources of funding identified for implementing ICM include budget allocations from the relevant government agencies and LGUs, local and international grants and donations, loans, and other appropriate financing schemes. LGUs are also being encouraged to explore innovative means of raising revenues and securing funding.

Source: Chua, 2006

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addressing transboundary environmental issues arising from the discharge of wastes into its coastal waters and beaches from upstream municipalities located along the upper reaches of the Jiulong River (Jiulongjiang), which runs through several municipalities. Xiamen responded to such a challenge by collaborating with the concerned municipalities in reducing pollution discharge into the river and at the same time collectively undertaking transboundary watershed management.

3. Development of national policy to give the legal and institutional support to subgovernmental efforts to strengthen and expand local coastal governance throughout the country. A good example is the issuance of Executive Order EO) 533 by the President of the Philippines (**Box 10.3**). This directive adopts ICM as a national strategy to ensure the sustainable development of the country's coastal and marine environment and natural resources.

4. Partnership scaling up, which sets in place strategic partnerships (e.g., donors, financial institutions, investors, national governments, UN and international agencies, the business/private sector, NGOs, academe) at national and local levels to support ICM implementation by local governments and to initiate on-the-ground problem solving to address issue- or site-specific action programs.

To scale up, the ICM program must be able to replicate. Replicability is built into each major activity or project component during the planning stage, which requires the incorporation of the following:

1. ***Capacity assessment.*** This entails evaluation of the demand and supply aspects of replication. Priorities and preconditions for successful replication are identified and assessed. Then, the interested sites and areas are matched with appropriate, replicable mechanisms, technologies, or practices that have been successfully demonstrated in the original site.

2. ***Communication.*** This entails awareness building and knowledge sharing to inform stakeholders on environmental issues, needed changes, and focus of actions that need to be initiated on the ground. The knowledge-sharing aspect is designed to apply and expand the knowledge, innovations, good practices, and technologies demonstrated in the original site.

3. ***Partnership development.*** This recognizes that many local governments in the region lack the capacity and confidence to commit investments in scaling up ICM, much less the capacity to provide environmental improvement facilities and services. Partnership opportunities are created for both government and nongovernment partners to identify activities of mutual interest by exposing them to each other's concerns and to opportunities for their participation. A partnership is established when two or more entities agree to jointly implement an activity or a series of activities at the current or new ICM sites.

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Strategies for scaling up include the following:

1. Increasing the critical mass of ICM sites by encouraging the establishment of parallel sites, strengthening national and regional networking, and implementing innovative training strategies to create a critical mass of ICM experts. Such activities optimize the influence of accumulated knowledge.

2. Scaling up projects by addressing transboundary issues. ICM is functionally expanded horizontally across management issues and vertically across levels of governance.

End the module by facilitating a discussion on the key activities of the Refining and Consolidating Stage.

Get feedback from the participants by asking them if they feel that the module objectives have been met.

Synthesis

1. The principle of adaptive management can be applied throughout the ICM process to address ecological uncertainties and changing political and management conditions.

2. The success of the ICM program may be evaluated at two levels: based on immediate ICM process-oriented objectives and based on long-term impact and sustainability objectives.

3. M&E is an essential tool for program management, helping managers and practitioners refine strategies, objectives, management actions, and desired outputs and outcomes in accordance with enhanced awareness and understanding of the progress and impact of the ICM program.

4. The SOC reporting complements the M&E process by providing the required framework and process in which the status and conditions of the marine and coastal environment are continuously monitored.

5. Assessment of the readiness of the local government to aim for ICM recognition/certification takes into consideration the ability of the ICM program to meet the requirements of the ICM Code, including the investments required for capacity building and information infrastructure to support the recognition/certification scheme.

6. Scaling up involves geographic expansion of ICM practices, functional scaling up, and policy support and partnership scaling up.

Assessment

Participants should be able to explain the importance of adaptive learning, M&E, and the scaling up of an ICM program.

Unit III

The ICM Code

Transforming the ICM Program to a process-oriented, well-documented, institutionalized ICM system

Unit III discusses the following: (1) ICM Code based on the ICM development and implementation process; and (2) Indicators of good practice that may serve as a guide for ICM practitioners in developing and enhancing their ICM system.

Exercises on conducting an initial assessment of an ICM system and/or related environmental programs give the participants opportunities for hands-on analysis of the status, strengths, and weaknesses of existing ICM system. This will help participants plan and develop an effective ICM system.

Module 11

Introduction to the ICM Code

Description

This module provides an overview of the ICM Code, its purpose, objectives, and benefits, as well its relationship with International Standards on quality management system and environmental management system.

Duration: 1 hour

Material

- **Handout 11.1** ICM Code

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Learning Outcomes

At the end of this module, the participants will be able to do the following:

1. Discuss the role of the ICM Code in developing and implementing an effective ICM system
2. Explain the relationship of the ICM Code with other international standards
3. Discuss the general structure of the ICM Code
4. Discuss the benefits of adopting the ICM Code in developing, implementing, and improving the ICM system
5. Discuss the requirements of the ICM Code

As in the previous module, greet the participants and present the module objectives. Again, use a medium that shows the objectives more permanently and keep it posted on a wall throughout the module discussion. This will remind everybody of the module's focus.

Review

Unit II (**Modules 4–10**) provided discussions on the ICM Cycle and its individual stages. The unit aimed to help the participants understand and appreciate the process, requirements, and outputs of each stage of the cycle.

Give the participants an outline of the module's discussion so they can follow along easier. Use visuals to aid your lecture-discussion.

Discussion

The discussion is divided into five main parts

1. Introduction to the ICM Code
2. ICM Code objectives
3. Relationship of the code with international standards
4. Structure of the ICM Code
5. Benefits of adopting the ICM Code
6. ICM Code requirements

What is the ICM Code?

The ICM Code is aimed at providing the local governments with a systematic approach for developing, implementing, and sustaining their ICM system. The code also provides the local governments with a guide against which to measure their performance in attaining sustainable development goals, objectives, and targets through ICM implementation.

Show the participants **Figure 2.2**, which illustrates the SDCA Framework, and explain that the content of the ICM Code is based on the elements of this framework.

The ICM Code specifies the requirements of an ICM system to enable the local government to develop and implement a strategy and implementation plan, multisectoral coordinating mechanism, relevant legislation, information management system, public awareness plan, capacity development plan, and financing mechanism to sustainably manage marine and coastal areas.

The code employs the "ICM development and Implementation" process as the basis for continuous improvement, and defines the requirements in improving the governance processes of local governments and in addressing sustainable development aspects.

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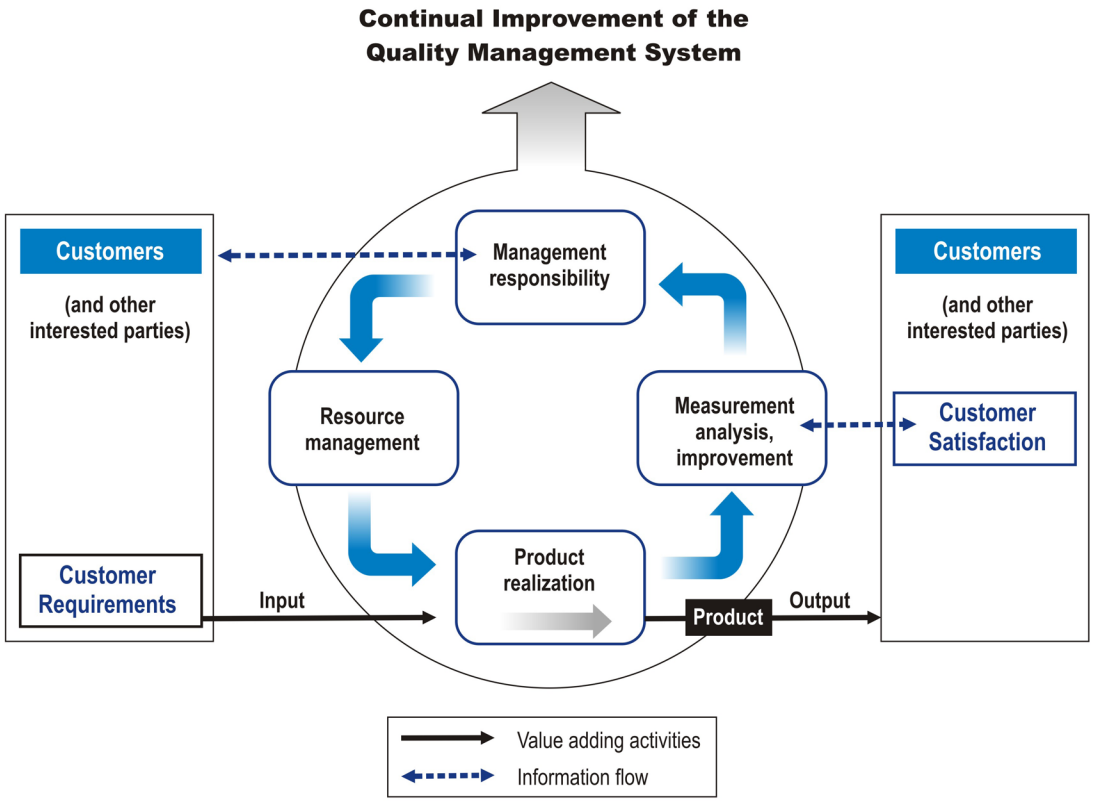
What are the objectives of the ICM Code of Good Practice? The principal objective of the ICM Code is to ensure the sustainable development of coastal areas and the implementation of good governance practices by local government managing those areas. The code also aims to assist local government units in developing and implementing ICM as a "management system" in order to direct and control their activities in relation to the shared sustainable development goals and objectives of local stakeholders while ensuring that the management of coastal and marine areas and resources within their jurisdiction is continuously improved. The expected outcomes of full implementation of an ICM system, based on the good practices defined in this Code, are as follows: 1. Adoption and implementation of a holistic management framework	Show the participants **Figure 11.1**, which illustrates the elements of the ISO 9001 using the process approach. Compare and discuss its similarity with **Figure 11.2** ICM Development and Implementation Process.

Figure 11.1 Model of a Process-based Quality Management System (ISO 9001: 2008)



This model for process-based management system illustrates the process linkages presented in clause 4 to 8 of ISO 9001:2008 Standard.

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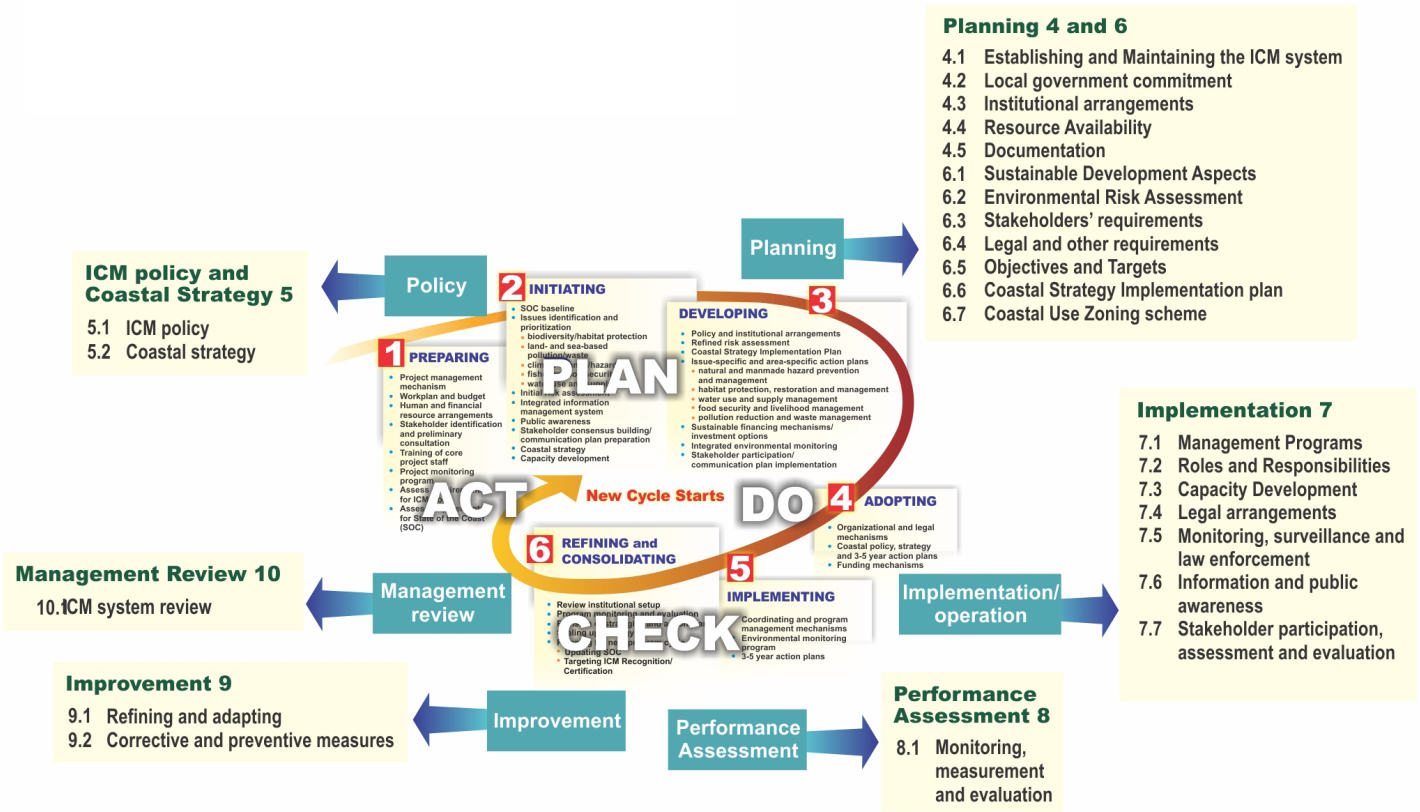
2. Continuous improvement in the quality of the coastal and marine environment and resources as well as the quality of life of the people and coastal community
3. Reduction of natural resource and habitat destruction and degradation through the rational use of resources and sustainable economic development
4. Compliance with national and subnational rules, regulations, and standards; relevant international conventions, codes, guidelines, and recommendations; and standards of international governmental organizations and other environmental and social organizations

How is the ICM Code related to other international standards?

The ISO 9001 and ISO 14001 are widely accepted and successful voluntary international standards developed by the International Organization for Standardization and used by business and governments. Published in 1987, the ISO 9000 series of Quality Management System Standards are aimed at ensuring the organizations' (business and governments) product quality and consistent effective services to their customers (stakeholders in the case of local government). The success of ISO the 9000 series prompted the creation of the ISO 14000 series of Environmental Management System standards. ISO 14001 aims to enhance the environmental performance of organizations through a series of continuous improvement processes that are geared toward preventing pollution and ensuring legal compliance.

Show the participants **Figures 11.2** and **11.3**. Compare the ISO 14001 continuous improvement cycle with the ICM Development and Implementation Cycle.

Figure 11.2 ICM Development and Implementation Process and the ICM Code Requirements



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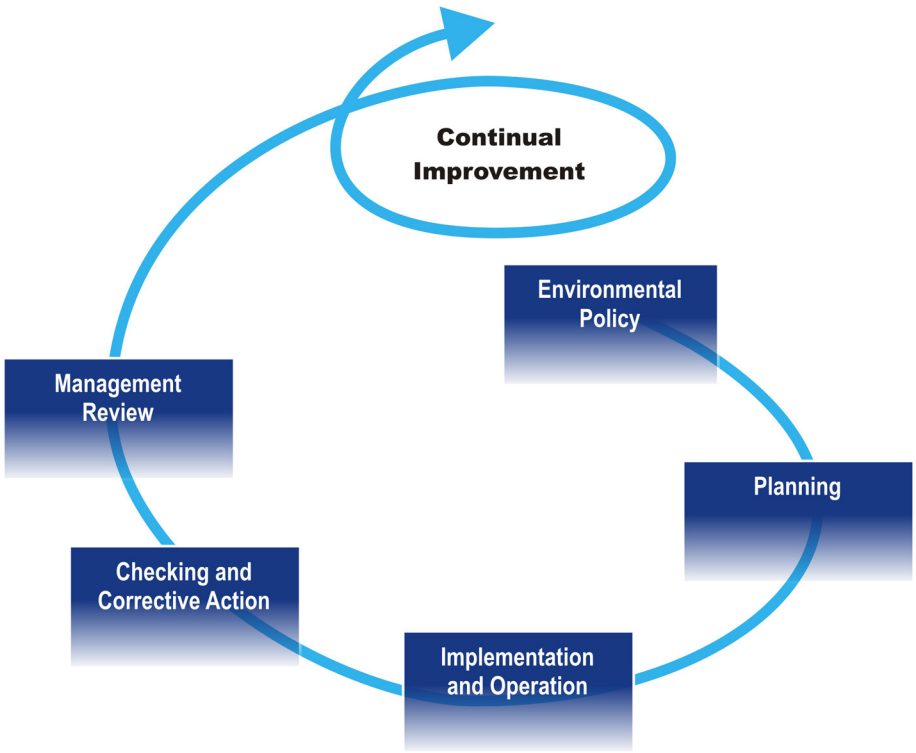
ISO 9001 and 14001 are generic and are intended for use by all types of organizations in diverse geographical, cultural, and social conditions. Toward the new millennium, organizations and associations adopted these generic standards to develop industry- or association-specific codes and standard. This trend together with the evolution of ICM practices leads to the development of the ICM Code.

Like the ISO standards, the ICM Code will be applicable to all types and sizes of local government units (LGUs). Since the ICM Code incorporates the essential management elements of ISO 14001:2004 and ISO 9001:2008, the LGUs will also be able to strengthen their environmental and quality management systems, consistent with the requirements of the said international standards. The local government can use the same management system, or at least the elements of the "ICM system" developed using the ICM Code, when seeking certification or ensuring compliance to ISO 14001:2004 and ISO 9001:2008.

Figure 11.3 Environmental Management System Model for ISO 14001: 2004



ISO 14001 specifies the requirements for an environmental management system to enable an organization to develop and implement policies and objectives that take into account legal requirements and the organization's significant aspects. The basis of the approach of ISO 14001 is shown in the figure.

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In addition, the ICM Code may be used as a practical guide to validate whether the daily operations of an LGU conform to good and quality environmental management practices.

What is the general structure of the ICM code?

The ICM Code is structured in accordance with the ICM development and implementation process (**Figure 11.2**).

Section 1 (Introduction) provides an overview of the ICM Code, its relationship with international standards, objective, and application.

Section 2 (Process Approach in an ICM System) describes how the different activities of the local government can be managed to ensure that the ICM system produces the desired results.

Section 3 includes terms and definitions related to ICM and local government operations.

Section 4 provides the requirements to plan, develop, and maintain an ICM system using the process approach.

Section 5 provides the requirements for the formulation of ICM policy and CS.

Section 6, 7, 8 and 9 present the requirements to plan, coordinate, implement, assess, and continuously improve the management programs addressing those sustainable development aspects that have significant negative impacts on the social, economic, and/or ecological conditions of the marine and coastal area within the scope of the ICM system.

Section 10 gives the requirements of a management review of the ICM system.

What are the benefits of adopting the ICM Code?

The ICM Code is a result of distilling the best practices that have evolved over time and have been applied throughout the region. The Code also provides guidance on achieving national and international targets for sustainable development and the required actions at the local level.

Successful development and implementation of the ICM system consistent with the good practices stated in the ICM Code will achieve the following:

1. A systematic approach to integrated management of marine and coastal areas and resources
2. Facilitation of national and regional ICM scaling up and replication of good practices and continuing improvement

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ICM System Recognition

Another benefit of the ICM Code is the recognition of the ICM system of local governments. The ICM System Recognition is established as a means of formally evaluating and acknowledging that the ICM system of the local government meets the requirements of the ICM Code and that it is effectively implemented. The system is structured as a tri-level approach to encourage the local governments to strive for excellence through continuous improvement.

The recognition process goes beyond the typical certification trend using the concept of "compliance" to an international standard since the assessment criteria involve the evaluation of the degree of performance/impact achieved through the implementation of the ICM system.

Three levels of recognition:
The local government implementation of the ICM system will be assessed by an external team of evaluators. The evaluation will cover three levels of recognition:

Level 1 - Transition Level:
The LGU ICM system has established sustainable development policy/strategy and institutional mechanisms for the initial roll-out of the ICM system.

Level 2 - Transformation Level:
The LGU ICM system has documented, implemented, and maintained the ICM system.

Sustainability Level:
The LGU ICM system has demonstrated sustained improvement in environmental performance.

What are the requirements of the ICM Code?

The requirements specified in the ICM Code describe the core elements that should be present in an effective and sustainable ICM system. Thus, the LGU may use these requirements described in the Code to assess and further improve their ICM system.

Summary of requirements described in the ICM Code:

Planning, Developing, and Managing an ICM System

The elements that enable a local government to document, implement, and maintain an ICM system to ensure effective and reliable performance in a transparent manner are defined:

Requirement:

Establish, document, implement, and maintain an ICM system and continuously improve its effectiveness

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Local Government Commitment

The essential elements of a successful ICM system are leadership and visible commitment from the top management of the LGU, active participation of concerned stakeholders, and buy-in. The top management of the local government can show its commitment to the ICM system by establishing an ICM policy, strategies, objectives, and action plan and by ensuring that the necessary arrangements and resources for achieving them are available.

Requirement:

The local government provides evidence of its leadership and commitment to develop and implement the ICM system and to continuously improve and sustain the system's effectiveness.

a. Establish and implement ICM policy and strategies
b. Review the ICM policy and strategies
c. Establish and institutionalize organizational arrangements for ICM
d. Ensure multi-sectoral stakeholder participation
e. Formulate/reformulate, adopt, and implement legislation and regulations
f. Ensure effective communication of information as well as public awareness and participation
g. Ensure the availability of adequate resources and financing mechanisms to sustain the implementation of the ICM system
h. Develop the capacity of personnel performing work relevant to the ICM system
i. Ensure the conduct of internal audits of the ICM system at planned intervals

Institutional Arrangements

Requirements:

a. Establish an interagency multi-sectoral coordinating mechanism responsible for the coordination of policymaking, planning, implementation, monitoring, and evaluation of the ICM system
b. Organize a coordinating office or project management office responsible for coordinating the development, implementation, and maintenance of the processes and actions by the different government agencies and sectors
c. Ensure the allocation of budget and availability of resources for the implementation of the ICM system
d. Define, document, and communicate the roles and responsibilities of personnel performing work relevant to the ICM system and its programs
e. Prepare and maintain documentation for the planning, development, and implementation of the ICM system
f. Implement and maintain the monitoring, measurement, analysis, reporting, and continuous improvement of the ICM system

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Resource Availability

Requirements:

a. Ensure the availability of resources essential for the establishment, implementation, maintenance, and improvement of the ICM system
b. Ensure the allocation and availability of budget for the implementation of the ICM system and its programs
c. Generate and mobilize external financial resources in accordance with national law
d. Inform the stakeholders and general public of the budgeted programs and expenditures of the ICM system and the resulting outputs and impacts

Continuous supply of funds to support the needed management interventions, maintain improvements in environmental infrastructure, and sustain and upgrade the coordinating and implementing arrangements is necessary for the sustainable implementation of the ICM system.

The following examples of financial mechanisms should be considered for implementation by local government units, as appropriate:

- Appropriation of resources through regular government budget allocation
- Implementation of user fees and taxes
- Public-private sector partnerships
- Environmental endowment
- Revolving funds
- Cost-recovery for products and services

The LGU can also establish partnerships with national government agencies, donors, and/or the private sector to implement the ICM system and/or related projects and action plans.

Documentation of the ICM System

The ICM code employs the process approach in the development and implementation of the ICM system. One of the critical factors in adopting the process approach is the establishment of criteria and methods (such as procedures, work instructions, and other documents) to ensure the effective operation, control, monitoring, analysis, and continuous improvement of the process, as well as the implementation of necessary actions to achieve the planned result. This helps in effectively transforming the ICM from a loosely coordinated, poorly documented, and highly experience-dependent management approach to a process-oriented, well-documented, and institutionalized management system. The following are important documents in an ICM system:

- Policy, strategies, objectives, and action programs
- ICM system manual
- Procedures for effective planning, development, implementation, and control of the ICM system
- Records required to verify the effective implementation and continuous improvement of the ICM system

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ICM Policy and CS

Requirements:

a. Establish an ICM policy to express the overall intentions and direction with regard to the sustainable development of marine and coastal resources and environmental management
b. Develop a comprehensive strategy for the sustainable development of coastal and marine area that provides a platform for multi-sectoral and interagency cooperation

Planning (Plan)

Sustainable Development Aspects

Requirements:

a. Plan and coordinate the development of programs to address significant sustainable development aspects
b. Ensure the effective implementation of these programs

The sustainable development aspects of concern to local government units generally cover five main issues:

•. Natural and manmade hazard prevention and management
• Habitat protection, restoration and management
• Water use and supply management
• Food security and livelihood management
• Pollution reduction and waste management

The LGU should ensure the effective implementation of programs developed to address the sustainable development aspects that are relevant to its local situation. In this regard, documenting the objectives, processes, and activities for each aspect is important. The continuous improvement cycle (Plan-Do-Check-Act) may be followed in addressing the sustainable development aspects.

Planning requirements:

• Identify the hazards and assess the risks in the area covered by the ICM system
• Determine the stakeholders' requirements, needs, and expectations in addressing the identified significant sustainable development aspects
• Determine the legal and regulatory requirements for the implementation of management programs
• Establish objectives and targets for controlling and managing the identified significant sustainable development aspects
• Formulate, adopt, and implement a CSIP that provides a short-to-medium term work program for implementing the CS
• Develop, adopt, and implement coastal use zoning to regulate and manage land and sea uses

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A coastal profile to describe the area covered by the ICM system should be developed. The profile should include information on demographical and biophysical characteristics, resource use patterns, socioeconomic setting, status of the coastal and marine environment, and legal and institutional arrangements. Baseline information on the ICM system can also be established through the preparation of the SOC baseline.

Hazards should be identified and risk assessed to determine the significance of their impact to the area covered by the ICM system.

Implementation (Do)

Sustainable Development Aspects Program

Requirement:

Establish, coordinate, and implement programs to address the sustainable development aspects having significant impacts on areas covered by the ICM system

Programs to address the sustainable development aspects should include the following:

- A management plan including the objectives, targets, strategies, and time table
- Personnel allocation including the designation of responsibilities for achieving the objectives and targets
- Allocation of resources, including infrastructure, equipment, and budget or the necessary financing mechanism to support the implementation of the sustainable development aspect programs
- An institutional mechanism to facilitate the continuous implementation of the action programs
- Monitoring and reporting of program implementation, performance, and achievement of objectives and targets
- Specifications of the documentation requirements for the development and implementation of the programs

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Roles and Responsibility

Requirement:

Define, document, and communicate the roles, responsibilities, and authorities of the local government personnel performing development, coordination, implementation, and maintenance of the management programs

Capacity Development

Capacity development aims to boost local abilities to implement the ICM program. It enables local stakeholders to take an active role in planning and managing their own natural resources. This creates program ownership, which, in turn, ensures program sustainability. Personnel performing specified ICM-related tasks should have the necessary education, training, skills, and experience for the implementation of the ICM system. The capacity needs of these personnel should be determined and necessary interventions should be provided to strengthen their skills and competence.

Requirements:

a. Determine the capacity needs of personnel performing work affecting the implementation of the ICM system
b. Prepare and provide a responsive capacity development program

Legal Arrangements

Requirement:

Develop and adopt local laws and/or ordinances to institutionalize the ICM system

Monitoring, Surveillance, and Law Enforcement

Requirement:

Ensure the monitoring, surveillance, and enforcement of applicable legal and other requirements by concerned agencies

Information and Public Awareness

Requirements:

a. Communicate the ICM vision, mission, desired outcomes, objectives, programs, and accomplishments of the ICM system
b. Establish and maintain a system for internal and external communication
c. Establish a process and mechanisms to encourage stakeholders participation and involvement
d. Assess the perception and behavioral changes among stakeholders and evaluate and report the benefits and impacts

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Performance Assessment (Check)

Monitoring, Measurement, and Evaluation

Once an ICM system has been developed and implemented, it is necessary to ensure that it is functioning as intended and that improvements can be made. The purpose of monitoring, measurement, analysis, reporting, and continuous improvement of the ICM system is to ensure that the system is performing effectively, the objectives and targets are being achieved, and the needs and expectations of stakeholders are being consistently met. This process includes monitoring and measurement, internal audit, corrective and preventive action, and management review.

Requirement:

Monitor and measure on a regular basis the development and implementation of policy and planning process as well as the management programs for addressing the significant sustainable development aspects

Records of monitoring should be properly kept.

Monitoring involves collecting information such as measurements or observations over a period of time. Measurements can be quantitative or qualitative. Monitoring and measurement can serve many purposes in an ICM system, such as the following:

- Tracking the progress toward the ICM policy commitments, objectives, and targets
- Evaluating the performance of processes and process controls of each relevant management program
- Assessing the overall performance of the ICM system

The results of the monitoring program should be analyzed and used to identify both successes and areas requiring correction or improvement.

Improvement (Act)

Requirement:

a. Review at planned intervals the effectiveness of the strategic action programs addressing the significant sustainable development aspects to ensure their continuing suitability, adequacy, and effectiveness
b. Review and continuouslly improve the policy and the planning and implementation process of the ICM system

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Management Review Requirement: Review of the ICM system by the interagency multi-sectoral coordinating mechanism to ensure the system's continuing suitability, effectiveness, and sustainability The "Plan-Do-Check-Act" cycle promotes continuous improvement of the programs addressesing the sustainable development aspects. Such improvement is achieved by assessing the program's achievements, outcomes, and impacts, and based on the results, refining the program's goals, approaches, and activities. The CS, CSIP, and the operational mechanism (e.g., institutional set up, financial mechanism, human resources, and management capacity) may also be refined and improved as a result of actual implementation and continuous feedback from stakeholders. The SOC report should be updated to consolidate the program's achievements and take stock of the resulting changes. At this stage, the next ICM program cycle may be initiated.	
Synthesis ICM practice has grown and evolved to what it is today. However, to become more relevant, current ICM practice needs to incorporate mechanisms that can "complete" the process. Many inherent aspects of ICM practice, from governance to strategic action program implementation, have to be standardized or codified so that the outputs and outcomes of ICM can be more predictable and measurable. The ICM Code offers a systematic approach for implementing and sustaining the ICM system.	Instead of providing the synthesis, ask several participants to synthesize the module's content. Use the module's objectives in facilitating this. Encourage them to discuss the opportunities that can be realized by adopting the ICM Code.
Assessment The participants should be able to discuss the role of the ICM Code in developing an effective ICM system.	Ask the participants if they feel that the objectives have been adequately accomplished. Entertain comments and suggestions as to how to improve the module.

Handout 11.1

ICM Code

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ANNEX A: Correspondence between ISO 9001, ISO 14001, and the ICM Code

ANNEX B: Guidance on the Background and Use of the ICM Code

ANNEX C: Template for an Initial Status Review

Module 12

Initial Status Review of an ICM

INTRODUCTION AND OBJECTIVE

The initial status review (ISR) provides an assessment of the current status of an ICM program, including ICM policies and practices, compared to the ICM Code Level 1, Level 2, and Level 3 requirements.

The ISR also enables the local government to determine the specific elements that are present or absent in its ICM program.

Description

Module 12 provides guidance, in checklist form, on how to conduct a quick assessment of ICM implementation in a specific area. Guided by the ICM Code, this checklist also helps the participants gain familiarity with the important elements of an ICM program.

Duration: **2 hours**

Materials

- **Handout 12.1** ICM ISR Checklist

Learning Outcomes

After the exercise on ISR, the participants will be able to do the following:

1. Discuss the ICM checklist and the important elements that comprise an ICM Program.
2. Come up with a quick assessment of the presence and/or absence of ICM elements in their own sites.

Instructions:

1. Provide each participant with an ICM Checklist.
2. Run through the document with the participants to make sure the ICM elements are well-understood.
3. Allow them an hour to apply the ICM checklist in their site in the assessment exercise.
4. After the exercise, open the floor for questions and clarifications.
5. After the open discussion, inform the participants that the results of this exercise will be fed into the other exercises that follow.

What is the use of the ISR Checklist

The ISR checklist has been developed to guide the local governments in conducting an assessment of an ICM program, including ICM policies and practices, against ICM Code Level 1, Level 2, and Level 3 requirements.

The checklist provides an initial indication of the status of the ICM program being implemented by the local government. It also aids in the decision of the local government to pursue ICM Certification.

How to conduct the actual ISR?

In actual application, the general steps in completing the ISR are as follows:

1. ISR planning and preparation
2. Conduct of the initial assessment using the ISR Level 1 checklist
3. Information and document gathering, analysis, and validation.

ISR Procedure

The following are the specific steps to be followed when conducting an ISR:

1. Establish an ISR assessment team comprised of representatives from the principal stakeholder groups involved in ICM development and implementation at the local level.

2. Collectively, the ISR assessment team accomplishes the ISR Checklist and identifies the necessary documents to support the responses in the checklist.

3. Gather information, documents, and records that can be used as evidence of compliance to the ICM Code requirements.

4. Validate that the gathered information, documents, and records support the responses in the checklist (Use the guidance notes in Annex 2 for assistance).

5. If necessary, conduct interviews with local agencies, local government officials, and non-government stakeholders to confirm the responses (Maintain a record of all interviews, including the names of the persons and agencies involved).

6 Complete the ISR report with the following content:

   a. Accomplished ISR Checklist, including a listing of all documents, records, and reports that were used to confirm the responses
   b. Listing of ISR assessment team members and affiliations
   c. Date of completion of the ISR Checklist

7. Submit the ISR report to the local Chief Executive, legislative body, and ICM Coordinating Committee for approval.

The local government can then use the result of the ISR to identify and plan for the activities needed to improve the ICM program. In case the ISR result indicates that the ICM program being implemented by the local government fulfills level 1 or level 2 or level 3 of the ICM certification requirements, the local government may seek certification from the PEMSEA Resource Facility.

Handout 12.1

ICM Checklist

ICM Good Practices	Yes	No	Available Documentation
1. ICM Coordinating Mechanism			
Level 1: Mechanism established and meeting regularly			
Is there a coordinating mechanism for ICM?			
Are there representations from government and sectoral interests?			
Does it involve a senior political figure?			
Does the coordinating mechanism meet on a regular basis?			
Are there minutes/proceedings of the meetings?			
Level 2: Mechanism institutionalized and effective			
Is there a local law or local executive order establishing the interagency and multi-sectoral mechanism, including its composition and mandate?			
Does the coordinating mechanism review the work plans and budgets for coastal strategy implementation plan (CSIP) implementation?			
Does the coordinating mechanism review and evaluate the CSIP implementation?			
Does the coordinating mechanism make recommendations for improving the implementation of the CSIP?			
Level 3: Sustainable development of coastal resources and communities			
Are the decisions and recommendations of the coordinating mechanism being incorporated into the policies and programs of the local government affecting coastal and marine resource management?			
Have the decisions of the coordinating committee resulted in operational changes/decisions concerning the sustainable development of coastal and marine resources?			
2. ICM Project Office			
Level 1: ICM office established and operational			
Has an ICM office been established locally, or has an existing office been assigned the responsibility to coordinate multi-sectoral activities related to ICM planning, development and implementation?			
Are staff hired/assigned to the office to implement the ICM program?			
Has the staff been trained in ICM?			
Does the ICM office prepare an annual work plan and budget for ICM development and implementation? (If the answer is yes, proceed to Section 3; If the answer in no, proceed to Section 4)			
Level 2: ICM office incorporated into a government office			
Is there a regular and qualified staff assigned to a local government office with an operating budget for the implementation of the ICM program?			
Is a program/project monitoring in place and providing information on the progress and achievement of the program and on the conditions in the coastal and marine area?			
Is there a training program in place and functioning to strengthen the capacity of local stakeholders in ICM implementation?			
Level 3: ICM office effectively coordinating and monitoring the effectiveness of the CSIP work program			
Is there a centralized database established to effectively record, store, and analyze information concerning social, economic, and ecological characteristics and trends within the ICM boundary?			
Does the ICM office monitor, evaluate, and consolidate the activities of stakeholders in relation to the implementation of their respective coastal management plans?			
Is there an annual report prepared on the progress, achievements, and constraints with respect to the implementation of the ICM program?			

ICM Good Practices	Yes	No	Available Documentation
3. Work Plan, Budget and Financing			
Level 1: Annual work plan prepared/budget allocated			
Does the local government approve an annual work plan and budget for ICM development and implementation?			
Does the ICM office regularly monitor and report to the local government on the work plan implementation and budget utilization?			
Level 2: Local government allocate annual budget and resources to address priority risks identified in the CSIP, as well as for monitoring and evaluation, and enforcement			
Does the local government allocate annual budget and resources to address priority risks identified in the CSIP as well as for monitoring and evaluation, and enforcement of relevant policies and regulations concerning coastal and marine areas and resources?			
Is there a system for tracking and reviewing on an annual basis the budget allocations for and expenditures on ICM and related activities?			
Level 3: Sustainable financing			
Has the local government established economic instruments (e.g. user fees, permit systems, PPP, penalties/fines, tax incentives) for generating revenues to support the sustainable development of marine and coastal areas?			
Have external sources of funding been leveraged from other stakeholders in support of the targets and objectives of the ICM program?			
4. State of Coast (SOC)			
Level 1: SOC baseline/coastal profile prepared			
Is the SOC baseline/coastal profile including the existing social, economic, and ecological conditions in the ICM site completed?			
Is the information in the SOC baseline used to plan and implement the ICM program as well as to identify priority issues and areas of high risk?			
Did the process for preparing the SOC baseline involve the stakeholders from the major concerned sectors?			
Level 2: SOC report prepared; indicators of changes that have occurred in the coastal area from the baseline situation identified			
Have key performance indicators been identified (e.g., social, ecological, economic) to assess conditions for measuring progress and decision-making?			
Does the monitoring program provide information for assessing biophysical and socio-economic conditions in accordance with the key performance indicators?			
Does the SOC report compare the present situation to baseline conditions?			
Level 3: SOC reporting system in place and functioning			
Has the SOC or similar reporting system been adopted by the local government?			
Is a SOC report prepared on a regular basis?			
Is the SOC used by the local government as a source of scientifically sound and reliable information for assessing and refining the ICM program?			
Is the SOC report disseminated to concerned stakeholders to provide information on progress towards agreed targets and on the changing conditions in coastal and marine areas?			

ICM Good Practices	Yes	No	Available Documentation
5. Stakeholder Participation			
Level 1: Stakeholder identification and consultation			
Have multi-sectoral stakeholders been identified during the planning and development of the ICM program?			
Are stakeholders from different sectors participating in the coordinating mechanism?			
Has a communication plan been prepared for building awareness and understanding of the ICM program among different sectors?			
Level 2: Stakeholder participation			
Do appropriate mechanisms exist that provide for stakeholder participation in decisionmaking processes associated with the ICM program implementation?			
Are key stakeholder groups participating in the awareness and education program?			
Are key stakeholders actively involved in ICM program activities to reduce environmental stress?			
Level 3: Stakeholder satisfaction			
Are surveys or other stakeholder feedback mechanism conducted regularly to assess stakeholder awareness of and satisfaction with the ICM program?			
Do stakeholders perceive that their views and concerns are being taken into account by the local government in the planning, development, and management of the marine and coastal area?			
Do stakeholders perceive positive outcomes from the ICM program?			
6. Coastal Strategy (CS)			
Level 1: CS prepared			
Has a CS been prepared, which provides the vision and strategic directions for coastal area development and management?			
Has a multi-year CSIP or similar plan been completed to delineate the specific activities to achieve the priority objectives and targets of the CS?			
Were the CS and CSIP prepared through a multi-sectoral participatory process?			
Level 2: CSIP implementation			
Are the CS and CSIP adopted by the local government?			
Is the coastal use zoning plan prepared?			
Have the priority actions of the CSIP been integrated into the work plans and budgets of responsible government agencies and stakeholders?			
Are policies, legislation, and enforcement procedures developed and applied to address the priority sustainable development aspects?			
Level 3: ICM sustainability and scaling up			
Are local development/investment plans aligned with the CS and action plans?			
Is the coastal use zoning plan adopted through local law or ordinance?			
Have regulatory and market-based instruments been established, implemented, and enforced to the extent that the goals and objectives of ICM are supported by a clear legal basis?			
Is the ICM program scaled up by linking coastal management with watershed and river basin management?			
Is the ICM implementation incorporated into government policy, legislation, and programs?			
Are strategic partnerships at the national and local levels developed to sustain and enhance the effectiveness of the ICM program?			

ICM Good Practices	Yes	No	Available Documentation
7. Sustainable Development Aspects			
Level 1: At least two (2) sustainable development aspects planned and initiated			
Are management plans addressing at least two of the five sustainable development aspects completed?			
Are trained personnel allocated for the implementation of management plans?			
Has an annual budget been allocated for the implementation of each plan?			
Have activities been initiated for the implementation of the management plans?			
Level 2: At least three (3) sustainable development aspects good practices implemented with measured success (for a duration of at least three years)			
Is the management plan being implemented in priority/high risk areas?			
Is the monitoring and evaluation program being undertaken?			
Are scientifically sound results indicating stress reduction available?			
Is there measurable reduction in environmental stress as a consequence of the identified interventions/responses?			
Level 3: Sustainable social, economic, and ecological benefits being derived from management interventions/responses			
Are the management plans being implemented for all five sustainable development aspects with measured success for stress reduction?			
Is there evidence of measured success towards targeted ecological, social, and economic impacts/ outcomes in one or more of the management plans? In which aspect/s?			
Are the management plans evaluated/updated in order to address new or changing conditions and/or stakeholder demands with respect to the sustainable development of the marine and coastal area?			

Unit IV

Field Visit

This unit allows the participants to observe the practical application of the principles, framework, and concepts discussed in the previous modules.

It will provide the participants a venue to interact and gain first- hand information from ICM program implementers and to observe the ground-level processes, systems, and activities in the implementation of ICM governance systems and sustainable development programs.

Module 13

Visit to an ICM Site

Description

This module provides reflections on past discussions by giving the participants an opportunity to visit an ICM site, interact with stakeholders, and witness how the various components of the SDCA Framework and the elements of ICM are applied in an ICM site.

Duration: **1 day**

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Objectives After the field visit, the participants will be able to do the following: 1. Discuss how the various key components of the SDCA Framework (including the coastal governance elements and sustainable development aspects) are developed through the ICM process 2. Explain the complexity of coastal management issues and the importance of horizontal scanning, risk assessments, strategic planning, and coordination 3. Describe how the elements of ICM are applied in an ICM site 4. Enumerate the lessons learned and good practices observed during the field visit using the principles learned in the previous units	Provide an introduction on the objectives of the field visit and expected outputs Link the activities to the modules previously discussed.

Overall Review

Content	Guide
As discussed in the previous modules, the six elements of governance embody the various management actions, enabling mechanisms, and sustainability measures that are essential in ensuring the successful implementation of an ICM program. These are strengthened through the ICM framework and process.	Review the different components of the SDCA Framework. Emphasize the governance elements and identify the stage in the ICM Cycle at which these elements are established.
It is important to remember that throughout the whole process of ICM development and implementation, stakeholder consultation and participation, scientific support, effective communication, and M&E are critical.	
Although the importance of the various sustainable development aspects/ programs of the SDCA Framework is widely recognized, these are implemented in various degrees by concerned line agencies. The level and intensity of management efforts devoted to these aspects depend on the priority of the local governments. It must therefore be stressed that the impacts (including visible changes on the ground) of an ICM program greatly depend on how these essential components are being implemented.	It is important that the information is used as a way to further assess if the participants have fully absorbed the information from the past discussions and truly understand how each module discussion feeds into and build on each other.
Field Visit	
The field visit component of the course will run for one whole day.	
A generic program is developed to assist the course director in the planning the activities.	
It should be noted that due to time limitation, only one site can be covered in the course. Specific field guides/programs related to different ICM sites should be prepared.	
Briefing	
The previous discussion should have prepared the participants well for a field visit to a model ICM site. However, there is a need to brief the participants about the itinerary and administrative arrangements before the actual visit.	Brief the participants about the itinerary and administrative arrangements related to the trip.
Focus Areas	
During the field visit, participants will be provided with the opportunity to interact with program implementers including the stakeholders to determine how the various components of the SDCA Framework are implemented and to understand how the various elements of ICM are being used.	Give the participants an overview of a site's characteristics, and issues and concerns (examples are given in **Boxes 13.1**, **13.2**, and **13.3** which show overviews of ICM sites in Batangas, Bataan and Xiamen, respectively).
The field visit is focus-driven, highlighting focus areas where an ICM site demonstrated best practices. This strategy optimizes the time of the participants during the field visit.	
Participants must be provided with guide questions to enable them to realize the major achievements, best practices, and lessons learned from the	Explain to the participants what is expected of them by giving clear instructions on what to observe and find out during the visit.

Content	Guide
implementation of ICM. Questions must be geared to elicit responses on how the focus areas were implemented, with reference to the following: a. Process b. Challenges c. Benefits d. Sustainability e. Future prospects	Make it clear that this activity should help them come up with their assessment on how the elements of ICM are applied. Provide them with the guide questions to help distill the lessons learned and best practices.

Box 13.2 Overview and Focus Areas in the Batangas ICM Program

I. Overview of the Batangas ICM Program

Batangas Province, in the Philippines, lies along the southwestern edge of Luzon Island and covers three major bays: Batangas Bay, Balayan Bay, and Tayabas Bay. The Batangas Bay is located in the southern part of the province. It covers 12 municipalities and 2 cities with catchment areas that drain into the bay.

The Batangas Bay region is one of the major shipping hubs in the country and hosts several industries including the petrochemical and oil refinery giants Pilipinas Shell, Caltex Philippines, and Petron Corporation. Major power generating plants are also present in the area. About half a million people live along its coastlines.

In the 10 years of its implementation, the Batangas Bay ICM program has realized a number of major achievements as follows:

- Institutionalization of a Project Coordinating Mechanism. The Batangas Bay Region Environmental Protection Council (BBREPC) serves as a functional multi-sector platform and provides policy direction for the implementation of the Batangas Bay region SEMP. With the scaling up of ICM, the council was expanded to cover two adjacent bays, Balayan and Tayabas Bays. The council is now named Batangas Integrated Environmental Protection Council.
- Institutionalization of a lead coordinating body. The PG-ENRO is mandated to coordinate and integrate the implementation of the management programs of the different stakeholders in Batangas.
- Policy and functional integration through the adoption of the SEMP for Batangas Bay in 1996. Several approaches were developed including strengthening of local regulations and ordinances and development of the Batangas Bay Sea Use Zoning Scheme. The SEMP was revised in 2007 to integrate the management plans of the Balayan Bay and Tayabas Bay.
- Development of an integrated environmental monitoring program participated by local and national agencies, private companies, and academic institutions. This joint monitoring scheme has been instrumental in the adoption of uniform and standard sampling and analytical methods.
- Strengthening of participation of private sector in ICM implementation. The Batangas Coastal Resources Management Foundation (BCRMF) is a major partner, undertaking several activities to support ICM program in Batangas.
- Development of high level of environmental awareness among stakeholders and constituents through an aggressive public awareness campaigns
- Scaling up of ICM program to adjacent bays: Balayan Bay and Tayabas Bay, applying the best practices and lessons learned from the ICM implementation in Batangas Bay region

II. Focus Areas

The Role of the Private Sector (BCRMF) in Batangas ICM program

- Participation in environmental management
- Community-based initiatives to support the ICM program, such as coral reef enhancement, establishment of fish reserve, and mangrove restoration and maintenance
- Visit to the mangrove area established by First Gas or to any other environmental initiatives of the private sector

Best Practice in Pollution Management: Batangas Bay Region Environmental Cooperative Experience

- Solid waste reduction through waste redemption

Best Practice in Sustainable Financing through User Fee: Mabini Experience

- Municipal level coastal management and the application of conservation fee

Content	Guide
Other stakeholders must be encouraged to participate during discussions to solicit reactions, positive or negative, on how ICM is affecting their community. To introduce a focus area, an initial open forum-type of discussion followed by visit to community project sites to validate the discussions is an effective strategy. The project sites could include marine sanctuary/ protected areas, mangrove reforestation areas, livelihood centers, waste recycling centers, coastal reclamation, and zoning schemes, among others. The field visit can also be coincided with a PCC meeting or a community activity (e.g., river/ lagoon/coastal cleanup, giant clam re-seeding, tree planting, turtle release).	Divide the participants into groups. Each group will focus on a specific topic of the SDCA Framework during the field visit. Each group will also place special attention on the focus area and relate the implementation according to process, challenges, benefits, sustainability, and future prospects. The number of groups and specific topics of focus will depend on the number of participants and the ICM site. Each group will present its findings and observations at the plenary session after the trip.

Box 13.2 Overview and Focus Areas in the Bataan ICM Program

I. Overview of the Bataan ICM Program

Bataan is a strategic peninsular province bounded to the west by the South China Sea and to the east by Manila Bay. Eleven of its twelve municipalities are coastal areas, nine of which are located along the Bataan-Manila Bay coastline. Two municipalities lie in the Bataan-South China Sea coastline. Altogether, the province's coastline is approximately 177 km.

The province hosts the Bataan Natural Park (BNP), which covers six major watersheds that are characterized by a dendritic radial drainage system: Morong River Watershed, Almacen Watershed, Talisay Watershed, Bagac Watershed, Sutuin Watershed, and Bayandati Watershed. These watersheds are the main sources of ground and surface water that supply the domestic, industrial, and agricultural needs of the communities around the protected area. The lowland agricultural areas along the eastern (Manila Bay side) and western (South China Sea side) coasts of Bataan draw their irrigation water from the surface water that originates from the BNP.

The major environmental problems in Bataan as viewed by the various ICM program stakeholders are the following:

- Pollution from land-based activities
- Habitat and resource degradation
- Overfishing and destructive fishing
- Oil spills and other sea-based sources of pollution
- Siltation and sedimentation
- Multiple resource use conflicts and governance
- Transboundary issues

The Province of Bataan is a showcase for strong public-private partnership in ICM program implementation. Eighteen local industries came together to form the Bataan Coastal Care Foundation(BCCF). They partnered with the provincial government and relevant municipal governments to establish and implement an ICM program. The foundation co-financed the operations of the provincial ICM Project Management Office, the establishment of Bataan Coastal Management Committee, and the implementation of issue-oriented action plans, such as the mangrove rehabilitation and mussel farming livelihood projects. The significant contribution of the private sector included the mobilization of resources and sharing of management and technical skills. Within a period of two years, Bataan won several national and international awards in testimony to its good governance.

II. Focus Areas

Public-Private Partnership as Sustainable Financing Mechanism for ICM: BIGKIS Bataan Experience
- Funding mechanism
- Role of the BCCF
- Institutional arrangement

Empowering Communities with Alternative Livelihood Program (visit at Morong Marine Turtle Sanctuary)
- Mussel farming
- Impact of the project to the community

Public Awareness and Participation through Beach Cleanup and Mangrove Replanting (visit at Balanga or Abucay Mangrove Area)
- How the beach clean-up activity has increased public involvement in ICM
- Impact of the project to fisherfolks

Sea Use Zoning
- Process
- Challenges
- Benefits

Content	Guide
Guide questions are developed to assist participants in data gathering. These guide questions are categorized as per SDCA Framework as follows:	Preferably, each group will focus on one specific element but they may be regrouped to cover more than one element in cases where the number of participants is not sufficient.
A. Governance Elements **Policy, Strategies, and Plans** 1. Identify the existing policies, strategies, and action plans related to coastal development and management in the area. Specify if the plans are adopted at the provincial and municipal level. Include a list of municipalities that adopted the plan. 2. Describe the process of monitoring and evaluating the plans, such as the frequency of evaluation and updating of plans.	Organize a plenary session after the field visit to facilitate discussion among the participants on their findings, lessons learned, and good practices observed during the visit. Use the guide questions that you provided to the participants in facilitating the discussion.

Box 13.3 Overview and Focus Areas in the Xiamen ICM Program

I. Overview of the Xiamen ICM Program

Xiamen Municipality is located at the southern portion of the Fujian Province of PR China, west of the Taiwan Strait. It is composed of six districts (Kaiyuan, Siming, Gulangyu, Huli, Jimei, and Xinglin) and one county (Tongan County), with a total population of 2.7 million (as of 2004) and a total coastline and sea area of 234 km and 340 km2, respectively.

Xiamen's economy has grown rapidly and it has become a popular site for foreign investments. The main coastal activities in the area include mariculture, manufacturing, capture fisheries, coastal tourism, port development, and coastal construction.

In its 10 years of implementation, the Xiamen Municipality ICM program has realized a number of major achievements as follows:

- Capacity-building activities undertaken to strengthen the coastal planning and management capability of the Xiamen Municipal Government and other institutions involved in the ICM program
- Environmental profile and SEMP prepared as blueprints for succeeding actions
- Interagency multi-sectoral coordinating mechanism for coastal management established to create synergy among institutions
- Legislative framework for integrated coastal management formulated
- Functional marine zonation scheme developed to reduce multiple-use conflicts
- Environmental monitoring programs developed
- Scientific support and policy advisory structure established

II. Focus Areas

Yuandang "Lagoon" clean up
- Highlight the successes: water quality improvement, income generation from sewage fees, land upgrading, revenue increase exceeding the costs incurred for the clean-up, increased investments, and the area has turned into a city center for international and domestic investments, tourism, and residential development

Wastewater treatment efforts
- Visit to sewage treatment plants

Gulangyu Island and ISO 14001
- Visit to the island; highlight the efforts to gain ISO certification

Beach management and coastal landscaping
- Road improvements to protect the shorelines

The western sea of Xiamen: Addressing multiple use conflicts and conservation needs
- Highlight the nature reserves and how conflicts between shipping and mariculture have been resolved.

Content	Guide

Institutional Arrangements

1. Identify the institutional mechanisms including the organizational structure of ICM implementation in the area. Specify the status of the institutional mechanism (e.g., adopted and legislated indicating specific legislation/ordinance).

2. Describe the strengths and weaknesses of the institutional mechanism (e.g., all relevant sectors are well represented, participation of relevant sectors is sustained; take into consideration the frequency of meetings/ decision-making forums conducted and the level of participation of each sector in the meetings).

Legislation

1. Identify the relevant existing legislations/ordinances at the provincial/ municipal level.

   a. ICM or coastal management
   b. MPAs, habitats and other marine environment-related legislation
   c. Marine or coastal zoning
   d. Legislation on limiting permit issuances for fisheries, mining, and other extraction activities
   e. Legislation on limiting permit issuances for pollution-generating activities
   f. Legislation on limiting permit issuances for establishing/building structures in the coastal environment, including aquaculture structures
   g. Legislation on limiting permit issuance for disposal of wastes from ships
   h. International conventions related to environment and habitats

Information and Public Awareness

1. Identify if a communication plan is available. Determine their target audiences and the IEC methods for each of the target audiences. Determine the communication channels used (e.g., internet, print, radio, TV, events/public forums, non-traditional).

2. Determine community participation activities and the level of participation of various stakeholders (government agencies, private sector, academe, NGOs, civil society groups, and youths) in each activity.

Content	Guide

Sustainable Financing

1. Determine the financial resources for coastal management activities.

    a. Regular government allocations
    b. Public sector expenditures for the environment (environment user fees); indicate percent of revenues allocated to environment projects
    c. Private sector contributions to coastal management activities
    d. Government/public/private investments on environmental infrastructures

Capacity Development

1. Determine if a capacity-development program has been developed as part of the ICM program.

2. Identify the trainings relevant to coastal management received by the site and the number of people trained per category. Some relevant trainings cover the following aspects:

    a. ICM
    b. Coastal strategy development and implementation
    c. Coastal use zoning
    d. Coastal, ocean policy, and institutional arrangement
    e. Communication and stakeholder mobilization
    g. Environmental and resource valuation
    h. Environmental risk assessment
    i. Hazard management and prevention
    k. Integrated environmental monitoring
    l. Integrated information management
    m. Performance evaluation
    n. Project planning, development, and management
    o. Waste management/pollution control
    p. Others

3. Identify gaps in capacity development. Determine the training needs of the site including the NGOs, private sector, and other stakeholders.

B. Strategic Action Programs or Sustainable Development Aspect

Natural and Man-made Disaster Prevention and Management

1. What disasters or emergencies has the area experienced?

2. Identify data sources and useful references (e.g., environmental profile and other environmental assessments).

3. Is there a disaster/emergency plan or procedure in place to address or mitigate potential emergency situations? If there is, please provide some details: resources, response group/team, etc.

Content	Guide

Habitat Protection, Restoration and Management

1. Has there been an assessment of the marine and coastal resources of the area? If so, where can the information be accessed?

2. Are there or have there been habitat protection and management programs and activities implemented by the local government, local communities, or other groups? What are these? If possible, provide the details: timeline of implementation, resources allocated, agencies/groups involved, supporting mechanisms and means of implementation, areas covered, etc.

Water Use, Supply, and Management

1. What are the water sources in the area?

2. Have there been water use, supply, and management issues in the area? If so, what are these?

3. Does the local government or other groups in the area have programs related to water supply, use, or management such as water reuse, recycling, and other conservation measures, as well as programs related to upgrading of water supply and distribution systems and adopting cost-effective technology (e.g., desalination of seawater to increase water supply)? If so, please provide some details: program, timeline of implementation, resources allocated, agencies/groups involved, supporting mechanisms and means of implementation, areas covered, etc.

Food Security and Livelihood

1. What are the main sources of food and livelihood in the area?

2. Does the local government, local communities, or other groups have programs to promote sustainable fisheries and aquaculture by combating illegal fishing, catch/harvest quotas, gear regulation, closed seasons, and implementing the FAO Code of Conduct for Responsible Fisheries? If so, please provide some detail: program, target group, number of beneficiaries, areas, timeline of implementation, resources allocated, agencies/groups involved, supporting mechanisms and means of implementation, areas covered, etc.

Content	Guide

Pollution Reduction and Waste Management

1. Does the area have information on waste sources, types, and volume produced? Is this information readily accessible? Identify data sources.

2. Does the local government, local communities, or other groups have pollution reduction or waste management programs? If so, please provide some details: program and strategies, timeline of implementation, resources allocated, agencies/groups involved, supporting mechanisms and means of implementation, areas covered, etc.

Report Writing and Validation

Participants will consolidate the data/information gathered from the field exercise and prepare a summary report for the plenary. A plenary discussion will follow to share the information gathered as well as the experiences and observations from the field exercise.

Debriefing

Debriefing allows discussion on major realizations during the field visit. It distills the information, knowledge, and wisdom gained by the participants.

Unit V

Workshop on the Preparation for ICM Program Development

This unit allows the participants to prepare for ICM program development. A review of the first stage of the ICM Cycle, as well as a check on where they are and what the gaps are in terms of complying with the tasks and outputs of the preparing stage of the cycle, will be conducted.

This unit also provides a venue for the participants to further familiarize themselves with some of the tasks in this first stage, such as establishing the management mechanism, setting the scope and boundaries of an ICM program, and roadmapping.

I. Review of the Preparing Stage of the ICM Cycle

Review **Module 5** (Preparing an ICM Program). You may do this through a simple discussion/sharing or through an activity, as described below:

1. Ask the participants to divide themselves into groups of 5 or 6.

2. Ask them to sit together and have them choose a representative for each group.

3. Ask each representative to sit on a panel and provide them with three cards, each numbered 1 to 3. Tell the representatives that they now cease to belong to the groups they came from but now form a judges' panel responsible for judging and scoring the answers of the groups.

4. Assign a number (1 to 5) to each member of the group. These members will be called on per number to answer the questions the facilitator will be asking. (An alternative way is for each group to decide who may answer a particular question, but a member may only answer once.)

5. As a number is called, all group members with the corresponding number should go to the board. Ask each to answer one at a time. You may ask the other representatives to go out of the room temporarily until he/she is called in to answer the same question. After each representative has answered the question, the panel of judges assigns scores to the representative using their cards (3 being the highest and 1 the lowest).

6. Tally the scores until all representatives have been called on or until all the questions have been answered. The group with the highest score wins.

7. You may open the floor for 5 to 10 minutes for questions and discussions.

Questions:

1. What are the expected outputs and tasks in the preparing stage?

2. How do you set up a multi-sectoral and interagency coordinating mechanism for ICM?

3. What are the elements of a work plan?

4. What are the considerations in the preparation of a work plan and budget?

5. Will a local government be able to implement an ICM program without external support? Why or why not?

6. Who will be responsible for implementing the activities identified in the work plan?

7. Is political commitment needed to be able to initiate an ICM program? Why or why not?

II. Gap Identification

Have the participants do a quick assessment of their area's status in terms of complying with the tasks and outputs of the preparing stage.

Provide them with the checklist of tasks and outputs for this stage (**Form 1**). Give them 10 minutes to fill this checklist and allow 20 minutes for questions, clarifications, and discussion.

Tell the participants that they will be using this form in the following workshops and in the action planning session.

III. Workshops

After the gap identification, proceed to **Module 14**: Workshop on Establishing the Management Mechanism for an ICM program and **Module 15**: Workshop on Developing the ICM Program Work Plan and Budget.

Form 1: Checklist of Tasks and Outputs

Name:

Country:

Site:

Tasks / Outputs	Existing	Equivalent	Status
ICM Program coordination mechanism			
- Program management office (PMO)			
- Program coordinating committee			
- Program staff			
- Technical working/advisory group			
Delineation of management boundaries for the program			
Program work plan			
Budget			
Arrangement of available financial and other administrative resources			
Stakeholder consultation			
Training of ICM staff			
Monitoring and evaluation system			
Assessing the requirements for the SOC (or its equivalent)			

Module 14

Workshop on Establishing the Management Mechanism for an ICM Program

Description

This workshop provides the participants an opportunity to go through the process of establishing a management mechanism, which includes setting up of a PMO, a PCC, and a technical working/advisory group.

Duration: **3 hours**

Materials

- **Form 1** Checklist of Tasks and Outputs
- **Form 2a** ICM Program Management Mechanism
- **From 2b** Stakeholder Analysis
- **Form 3** Action Plan for Establishing a Program Management Mechanism

Learning Outcomes

After the workshop, the participants will be able to do the following:

1. Discuss the rationale and process of setting up the different components of the program management mechanism for ICM
2. Identify potential "players" in their own area that may be involved or act as part of the program management mechanism
3. Draft an action plan to initiate the establishment or setting up of a program management mechanism in their own areas

Review

Review the different components of a program management mechanism and their roles and functions (see **Module 5**). This may be done in the form of a discussion, a game, or a quiz. Allow time for discussion until the group fully appreciates the rationale for and the roles of the players in the program management mechanism.

Activity 1: Defining the ICM Program Management Mechanism

Mechanics:

Ask the participants to look through the results of their checklist (**Form 1**). Divide the participants into two groups: Group 1 would be those who have existing program management mechanisms, and Group 2 would be those who have not established program management mechanisms yet.

For those belonging to Group 1, have them individually work on the following questions (Provide them with copies of **Form 2a**; Allot 20 minutes for this):

1. What is the existing management mechanism for your ICM program?
2. Under which department/departments are the program management mechanisms placed (interagency and cross-sectoral coordinating committee, ICM PMO, scientific/technical advisory group)?
3. How was it formed? Who initiated/facilitated it?
4. What functions/roles do they provide?
5. What resources do they have and from where are these?
6. Are the existing mechanisms functional? Is it supported by a local legislation?
7. What are the challenges? How could these be improved?

For those belonging to Group 2, have them individually work on the following questions (Provide them with copies of **Form 2b**; Allot 20 minutes for this):

1. Stakeholder analysis

    a. Identify people, groups, and institutions that will have influence on your ICM program (either positively or negatively)
    b. Determine the kind of influence (positive or negative) these groups will have on the program
    c. Identify strategies to effectively get the most support from these stakeholders, thereby reducing the obstacles to the successful implementation of your ICM program

2. Establishing a program management mechanism

    a. Write down all the government offices, departments, agencies, organizations, and any other that are involved in coastal management in your area.

    b. Based on the descriptions of the program management mechanisms given earlier, identify the institutions, groups, or organizations that should be involved in the following:
        - High-level interagency coordinating mechanism
        - Program management office
        - Scientific/technical advisory group

    c. What do you think are the possible fund and logistical sources for your ICM program?

    d. What do you foresee as challenges to the implementation of your program?

After 20 minutes, ask the participants to join their respective groups. Give both groups 30 minutes to one hour to share and discuss their work. Then, allow 20 minutes for each group to present the results of their sharing session. Allow 5 to 10 minutes for questions.

As a critique, pose questions to the group presentations, highlighting possible problem areas/considerations in setting up a program management mechanism based on ICM site experiences. Go through each component of the mechanism, pointing out possible areas of concern, if any, and sharing examples from the sites.

Activity 1 Form 2a. ICM Program Management Mechanism

Group 1

Program Management Mechanisms	Under which department/s are the program management mechanisms placed?	Department/ agencies and role in ICM	Resources		Functional? (mandated by what legislation?)
			Amount	Source	
Program Coordinating Committee					
ICM Program Management Office (PMO)					
Scientific/Technical Advisory Group					
Program Management Staff					
Other support groups					

Challenges:

How could these be improved?

Activity 1 Form 2b. Stakeholder Analysis

Group 2

1. Write down all the government offices, agencies, departments, groups, organizations, and any other that are involved in coastal and/or marine management in your area.

2. Based on the descriptions of the program management mechanisms given earlier, under which agency/office/group do you think should these mechanisms be best subsumed given the specific situations in your areas? Who would best take these on?

Program Management Mechanisms	Department the program management mechanisms may be placed under	Possible sources of funds and logistical/other support
Program Coordinating Committee		
ICM Program Management Office (PMO)		
Scientific/Technical Advisory Group		
Program Management Staff		
Other support groups		

3. What are the possible challenges to setting these mechanisms up?

Activity 2: Action Planning.

Based on the discussion earlier, ask the participants to draft an action plan to establish or initiate the setting up of the program management mechanisms in their areas. Be guided by the following (See **Form 3**):

1. What are the steps needed to initiate the establishment of the program management mechanism?
2. Who are responsible for initiating/doing the outlined steps?
3. What resources are needed to accomplish these?

Form 3. Action Plan for Establishing a Program Management Mechanism

Activity	Target Date	Resources Needed	Office/Person Responsible
1. Establishing the Program Coordinating Committee			
•			
•			
•			
2. Establishing the Program Management Office			
•			
•			
•			
3. Establishing the scientific/technical advisory group			
•			
•			
•			

Module 15

Workshop on Developing the ICM Program Work Plan and Budget

Description

Module 15 is a workshop on developing the ICM Program work plan and budget, including the following: (1) delineation of the management boundary for the program; (2) preparation of work plan and budget; and (3) arrangement of available financial and other administrative resources to support the program. These are some of the preparatory steps for ICM program development.

Duration: **3 hours**

Materials

- Workshop materials
- **Form 4** Roadmap

Learning Outcomes

After the workshop, the participants will be able to do the following:

1. Discuss the process of identifying the scope and boundary of the ICM program for their area as a prerequisite in drafting the work plan and budget

2. Develop a roadmap for the development of an ICM Program in their area

Activity 1: Determining the scope and management boundary of the ICM program

Have the participants look through their checklist again (**Form 1**). Ask them to form two groups: Group 1 would be those with identified scope and boundaries and Group 2 would be those who have not yet identified the scope and boundaries of their ICM program.

Give the groups 30 to 45 minutes to discuss and share among themselves the following:

Group 1:

1. At what spatial scale is their ICM program working? (national, provincial, city, village, watershed-wide, bay-wide, protected area, etc.)
2. What are their areas and scope of responsibilities in implementing the ICM program?
3. What are the challenges in implementing an ICM program at that scale?
4. What do they think are their effective strategies in implementing an ICM program?

Scale/Scope	Areas of Responsibility (in ICM Program Implementation)	Challenges	Effective Strategies and Approaches
National			
Provincial			
City			
Village			
Watershed-wide			
Bay-wide			
Protected Area			

Group 2:

1. At what spatial scale is their office/agency/organization working? (national, provincial, city, village, watershed-wide, bay-wide, protected area, etc.)
2. What are the possible areas and scope of responsibilities of their office/agency/organization in implementing an ICM program?
3. What do they think are the considerations in developing and implementing an ICM program?
4. Who do they think are the stakeholders that need to be involved in identifying the scope and boundary of an ICM program?
5. What may be the challenges in delineating the scope and boundaries of an ICM program at that scale?

Scale/Scope	Scope/Areas of Responsibility (in ICM Program Implementation)	Considerations	Stakeholders	Challenges
National				
Provincial				
City				
Village				
Watershed-wide				
Bay-wide				
Protected Area				

After the group discussion, ask a representative from each group to present a summary of their discussion. Allow 5 to 10 minutes for questions and comments.

As a critique, point out the things to consider in defining the scope and boundaries of an ICM program based on inputs from **Module 5** and ICM site experiences. Point out the difficulties and challenges they may need to prepare for.

Activity 2: Developing the Roadmap for an ICM Program

Ask each member to work individually on drafting their own roadmaps to prepare for ICM program development in their area. Give them 30 minutes to do this. Provide them with the following guide:

1. List the key activities that need to be undertaken within the year.
2. Indicate the implementation schedule, responsibility centers (lead and supporting implementers), human and budgetary requirements, and possible funding source.
3. Identify the training needs of the project staff.

Ask two representatives, one from each group, to present their group's output. Allow 5 minutes after each presentation for questions and comments. Take this opportunity to emphasize the key elements that need to be considered in developing the work plan of an ICM program.

Individual outputs from the group may be collected for checking and for incorporating possible improvements on their work plans.

Form 4. Road Map

Activity	Schedule	Person/Office/Agency Responsible	Budget	Other Resources Needed	Status

Definitions/Glossary

Adaptive management – a systematic process for continually improving management policies and practices by learning from the outcomes of previously employed policies and practices (Millennium Ecosystem Assessment, 2005)

Approach – the method used or steps taken in setting about a task, problem, etc. (Dictionary.com, 2010)

Capacity building – a process of strengthening or developing human resources, institutions, organizations, or networks (UNEP, 2006b)

Climate change – a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability over comparable time periods. (UNFCCC definition as cited in IPIECA, 2001)

Coastal area – an entity of land and water affected by the biological and physical processes of both the sea and land and defined broadly for the purpose of managing the use of natural resources. (Gesamp 71, 2001)

Coastal governance – refers to the process by which the full range of laws, policies, plans, institutions, and legal precedents address the issues affecting coastal areas (Best, 2003; Hill and Lynn Jr., 2004; Olsen, 2003)

Coastal Strategy – a sustainable development strategy for the coastal areas that serves as a platform for policy reforms toward good governance, which, during its formulation, allows for interagency consultation, multisector cooperation, and stakeholder participation

Coastal Strategy Implementation Plan (CSIP)/Strategic Environmental Management Plan (SEMP) – plans that outline the strategic actions needed to implement a coastal strategy, focusing on building local capacity, improving the policymaking system, strengthening environmental and resource use planning, identifying opportunities for environmental investment, and developing sustainable financing mechanisms. It also identifies the steps that should be taken to execute the strategy, defines the roles of the various stakeholders, and indicates measures for monitoring the implementation of the strategy

Coastal/sea use zoning – also known as functional zonation, it allocates the use of watersheds, river basins, and coastal waters based on specific objectives, most notably ecological functions, traditional use practices, and future development in a particular area

Communication plan – a tool to operationalize public education and is defined as a rational and strategic guide to effectively implement particular communication campaigns throughout the ICM process

Coordinating mechanism – an institutional arrangement for interagency and multi-sectoral consultations and collaboration towards achieving common goals and immediate objectives

Ecosystem – a dynamic complex of plant, animal, and microorganism communities and their non-living environment interacting as a functional unit

Ecosystem-based management – management driven by explicit goals executed by policies, protocols, and practices, and made adaptable by monitoring and research based on best understanding of the ecological interactions and processes necessary to sustain ecosystem structure and function (Christensen, et al., 1996)

Environmental degradation – the deterioration of the environment resulting from the use of resources, such as air, water, and soil; the destruction of ecosystems and the extinction of wildlife

Environmental risk assessment – the process of estimating the likelihood of harm being done to human health and/or ecosystems by factors emanating from human activities that reach their target via the natural environment

Environmental risk management – the application of identified management interventions to address the environmental concerns identified through the environmental risk assessment process

Food security – exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 2001)

Framework – underlying set of ideas; a set of ideas, principles, agreements, or rules that provides the basis or outline for something that is intended to be fully developed at a later stage

Governance – sets the framework within which management can proceed as it "establishes the fundamental goals, institutional process, and structures that are the bases of planning and decisionmaking" (Best, 2003)

Hazard – a potentially damaging physical event, phenomenon, or human activity, which causes the loss of life or injury, property damage, social and economic disruption, or environmental degradation (UN-ISDR, 2004)

Holistic – relating to or concerned with wholes or complete systems rather than with the analysis/ treatment of or dissection into parts (holistic ecology views humans and the environment as a single system)

Indicator – quantitative or qualitative statement that can be used to describe existing situations and measure change or trends over time (Duda, 2002)

Institutional arrangements – the functional or working dynamics of institutions designed to perform harmoniously their respective roles and responsibilities

Integrated Coastal Management (ICM) – a natural resource and environmental management framework that employs an integrative, holistic management approach and an interactive planning process in addressing the complex management issues of the coastal area

ICM Code – provides a systematic approach to ICM based on international standards for environmental management and quality management at the local government level

ICM scaling up – the geographical and functional expansion of ICM practices leading to the replication of ICM programs in other coastal areas; the expansion of ICM program coverage including integrating watershed, river system and the coastal areas, and greater integration of policy and management functions of concerned line agencies

ICM system (Integrated Coastal Management System) – a set of interrelated processes or interacting elements that allows the local government unit to establish and communicate its ICM policy, coastal strategy, vision, objectives, and expectations regarding the sustainable development of the coastal and marine environment and resources, and to implement, monitor, and evaluate its ICM performance

ICM performance – measurable results related to the implementation, monitoring, and control of the ICM system, in accordance with the coastal strategy, vision/mission, and objectives as agreed and adopted by the local government unit

Integration – a process that allows for a broader and cohesive perspective of the entire program. Foremost among its functions is to ensure internal consistency between policies and management actions. Integration also ensures that policy and management reforms are informed by scientific research

Integrative – combining and coordinating diverse elements into a whole collective; forming a whole or aggregate; centralizing, tending to draw to a central point

Integrated Environmental Monitoring Program (IEMP) – a systematic, cost-effective, and coordinated monitoring program that addresses major impact areas as identified through risk assessment and links the monitoring of pollution, habitats, resources, and human health

Integrated information management system (IIMS) – a relational environmental database management system that allows the storage, retrieval, and manipulation of comprehensive data to suit the needs of the user

International conventions – international agreements that provide globally-accepted standards for protecting and managing the marine environment

ISO certification – conformance to international standards, requirements, and criteria set by the International Organization for Standardization

Local government – the political institution exercising legislative and executive authority over persons and property within a certain geographical area that is part of a larger political entity, i.e., the country or state

Management – refers to the regulation of human behavior to ensure the use of natural resources in a sustainable manner

Marine protected areas – areas of coastal land or water that are especially designated to protect coastal and marine resources, preserve biological diversity, increase public awareness, and provide sites for recreation, research, and monitoring (Cicin-Sain and Knecht, 1998)

Millennium Development Goals (MDGs) – are eight goals to be achieved by 2015 to respond to the world's main development challenges. The MDGs were drawn from the actions and targets contained in the Millennium Declaration that was adopted by 189 nations and signed by 147 heads of state and governments during the UN Millennium Summit in September 2000 (UNDP MDG, 2010)

Monitoring and Evaluation (M&E) – an integral part of the policy and management processes that should be conducted periodically to determine the extent to which the (ICM) program is achieving its objectives

National government – the political institution exercising legislative, executive, and judicial authority over a country, whether unitary or federal

Nongovernmental organization (NGO) – a non-profit group or association organized outside of institutionalized political structures to realize particular social objectives or serve particular constituencies (FishBase, 2001)

Private sector – collectively, people or entities conducting business for profit

Public-Private sector Partnership (PPP) – a sustainable financing mechanism designed to reduce risks in environmental investments wherein each partner is required to assume responsibility for measures or commitments that form the foundation of project viability

Principle – an essential truth upon which other truths are based; the acceptance of moral law as a guide to behavior; a rule by which a person chooses to govern his/her conduct, often forming part of a code (The New Lexicon Webster's Dictionary of the English Language, 1988)

Process – a series of actions directed toward a specific aim

Strategy – a carefully devised plan of action to achieve a goal, or the art of developing or carrying out such a plan

Sustainable development – development that ensures the continuance of natural resource productivity and a high level of environmental quality, thereby providing for economic growth to meet the needs of the present without compromising the needs of future generations (Clark, 1996)

Sustainable Development Goals (SDGs) – also known as the Global Goals; consist of 17 goals that build on the successes of the Millennium Development Goals, including new priority areas such as climate change, economic inequality, innovation, sustainable consumption, and peace and justice. SDGs are interconnected; often, the key to success in one area will involve tackling issues more commonly associated with another (UNDP SDG, 2016)

Sustainable financing – mechanism of raising or allocating financial resources to provide sustained funding for a program, project, or activity, or for sets of environmental management interventions

Stakeholders – persons or entities directly or indirectly, positively or negatively, affecting or are affected by the policies, activities, or phenomena in the coastal and marine area

State of the Coasts (SOC) – reporting system to assess the progress and impacts of ICM implementation by local governments; integrated and comprehensive approach that documents and measures the progress and impacts of policy and management interventions to address environmental issues in the coastal and marine area

System – a combination of related parts organized into a complex whole; set of principles; a scheme of ideas or principles by which something is organized; a method or set of procedures for achieving something

User fee – a fee charged by a government agency for use of a particular coastal resource

Vulnerability – the conditions determined by physical, social, economic, and environmental factors or processes which increase the susceptibility of a community to the impact of hazards (UN-ISDR, 2004)

References

Best, B. 2003. "Conservation and integrated coastal management: looking beyond marine protected areas," pp. 325–342. In: Olsen, S. B. (ed.) Crafting coastal governance in a changing world. Coastal Management Report #2241. Coastal Resources Management Program, U.S. Agency for International Development, University of Rhode Island Coastal Resources Center, Rhode Island, USA.

Bigkis-Bataan. 2002. *The Bataan Coastal Strategy.* Bigkis-Bataan, Bataan, Philippines. 57 pp.

Chua, T.-E. 2008. "Coastal governance: A reflection of integrated coastal management (ICM) initiatives with special reference to the East Asian Seas region," pp. 371–402. In: T-E. Chua, G. Kullenberg and D. Bonga. (eds.) *Securing the oceans: Essays on ocean and governance – regional and global perspectives.* 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) and the Nippon Foundation, Quezon City, Philippines. 770 pp.

Chua, T-E. 2006. *Dynamics of integrated coastal management: Practical applications in the sustainable coastal development in East Asia.* 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), Quezon City, Philippines. 468 pp.

Chua, T.-E. 1998. "Lessons learned from practicing integrated coastal management in Southeast Asia." *Ambio,* 27:599–610.

Chua, T.E. and I. R. Gorre. 2000. "Xiamen region, China." In: C. Sheppard. (ed.) *Seas at the millennium: An environmental evaluation.* Elsevier Science Ltd., USA.

Chua, T.-E. and L. F. Scura. (eds.) 1992. *Integrative framework and methods for coastal area management.* Proceedings of the Regional Workshop on Coastal Planning and Management in ASEAN: Lessons Learned, Bandar Seri Begawan, Brunei Darussalam, 28–30 April 1992. ICLARM Conference Proceedings 37. International Center for Living Aquatic Resources Management, Manila, Philippines. 169 pp.

Chua, T.- E., S. A. Ross, H. Yu, G. S. Jacinto and S. R. Bernad. 1999. Sharing lessons and experience in marine pollution management. MPP-EAS Technical Report No. 20. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines. 94 pp.

Christensen, N. L., A. M. Bartuska, J. H. Brown, S. Carpenter, C. D. Antonio, R. Francis, J. F. Franklin, J. A. MacMahon, R. F. Noss, D. J. Parsons, Ch. H. Petersen, N. G. Turner and R. G. Woodmansee. 1996. "The report of the Ecological Society of America committee on the scientific basis for ecosystem management." *Ecological Applications*, Ecological Society of America, 6 (3): 665–691

Cicin-Sain, B. and R. W. Knecht. 1998. Integrated coastal ocean management: Concepts and practices. Washington, D.C.: Island Press, 517 pp.

Clark, J. R. 1996. Coastal zone management handbook. Boca Raton, Florida, USA: CRC Press, Inc., 694 pp.

Contreras, F. 1998. "The BCRMF and Its role in the environmental management of Batangas Bay, Philippines," pp. 40–44. In: *GEF/UNDP/IMO MPP-EAS, Regional Workshop on Partnerships in the Application of Integrated Coastal Management.* MPP-EAS Workshop Proceedings No. 10. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas (MPP-EAS), Quezon City, Philippines. 167 pp.

Corpuz, C. F .J. 2004. "Return to the yellow brick road: Xiamen revisited." *Tropical Coasts,* 10(1):12–17, 70.

Costanza, R., d'Arge, R. C., de Groot, R., Farber, S., Grasso, M., Hannon, B., Limburg, K., Naeem, S., O'Neill, R.V. and Paruelo, J. 1998. "The value of the world's ecosystem services and natural capital." *Ecological Economics,* 25(1):3–15.

Danang City PC (People's Committee). 2005. Coastal use zoning plan for Danang City (in English and Vietnamese). People's Committee of Danang City, Vietnam. 58 pp.

Danang City PC. 2001. *Coastal Strategy of Danang City.* People's Committee of Danang City, Vietnam. 66 pp.

Danang PC and PEMSEA. 2004. *Danang initial risk assessment.* PEMSEA Technical Information Report No. 10. Danang People's Committee and Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia. Quezon City, Philippines. 130 pp.

De Leo, G.A., and S. Levin. 1997. "The multifaceted aspects of ecosystem integrity." *Conservation Ecology*, 1(1):3. Accessed March 2014. Retrieved from www.consecol.org/vol1/iss1/art3/.

Department of Environment and Natural Resources (DENR), Department of Interior and Local Government (DILG), Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR), and the Coastal Resource Management Project (CRMP). 1997. *Legal and jurisdictional guidebook for coastal resource management in the Philippines.* Coastal Resource Management Project, Manila, Philippines. 196 pp.

Dictionary.com, 2010. Available at from http://www.dictionary.com/

Duda, A. 2002. Monitoring and evaluation indicators for GEF International Waters Projects. Monitoring and evaluation Working Paper 10. Global Environment Facility. Accessed March 2014. Retrieved from www. iwlearn.net/publications/mne/mne-others/mne-nov2004/GEF_IW_MNE_Indicators.pdf.

Erni, M., W. Azucena and A. Guintu. 2004. "Bataan, Philippines – Public-private partnerships at work for sustainable development." *Tropical Coasts,* 11(2):10–15, 53.

Estigoy, E. L. and A. Guintu. 2004. "Batangas, Philippines: Rekindling an old tradition through ICM." *Tropical Coasts,* 11:24–31.

Food and Agriculture Organization of the United Nations (FAO). 2001. The State of Food Insecurity in the World 2001. Rome.

FishBase. 2001. FishBase Glossary. Available at http://www.fishbase.org/Glo.../Glossary.cfm?TermEnglish+Non-Governmental%20Organizatio,8?3/01.

Gervacio, B. 2006. "Enhancing sustainable management of the coastal and marine areas through the integrated information management system for coastal and marine environment (IIMS)." Paper presented at the International Conference of the Second East Asia Seas Congress, December 2006, Haikou City, Hainan Province, PR China.

GESAMP71: GESAMP (IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/ UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection) and Advisory Committee on Protection of the Sea. 2001. Protecting the oceans from land-based activities - Land-based sources and activities affecting the quality and uses of the marine, coastal and associated freshwater environment. Rep. Stud. GESAMP No. 71, 162 pp. Available at www.jodc.go.jp/info/ioc_doc/GESAMP/report71.pdf.

Hill, C. J. and L. E. Lynn, Jr., 2004. "Governance and public management, an introduction." *Journal of Policy Analysis and Management*, 23:3–11.

International Workshop Agreement 4 (IWA 4): *Quality Management Systems Guidelines for the Application of ISO 9001:2000 in the Local Government.*

Intergovernmental Oceanographic Commission (IOC). 2005. *A handbook for measuring the progress and outcomes of integrated coastal and ocean management* —Preliminary version. IOC Manual and Guides 46. UNESCO, Paris.

IOC. 2003. *A reference guide on the use of indicators for integrated coastal management.* ICAM Dossier 1, IOC Manuals and Guides No. 45. UNESCO. Paris, France.

IOC. 1997. Methodological guide to integrated coastal management. UNESCO and Intergovernmental Oceanographic Commission, Paris, France.

International Organization for Standardization (ISO). ISO 9001:2000: Quality Management System Standard – International Organization for Standardization (ISO).

International Organization for Standardization (ISO). ISO 14001:2004: Environmental Management System Standard – International Organization for Standardization (ISO).

International Petroleum Industry Environmental Conservation Association (IPIECA). Climate change: A glossary of terms. Third Edition. 2001. IPIECA. United Kingdom. 44 pp.

ITTXDP (Integrated Task Team of the Xiamen Demonstration Project). 1996. Strategic management plan for marine pollution prevention and management in Xiamen. MPP-EAS Technical Report No. 7. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines. 60 pp.

Lacerna, M. T. G., E. Estigoy and C. Wang. 2003. "Sustaining ICM efforts through institutional arrangements: PEMSEA demonstration sites." Paper presented at the East Asian Seas Congress 2003, Putrajaya, Malaysia, 8–12 December 2003.

La Viña, A. 1996. "Determining the appropriate institutional mechanism for ICM in the Batangas Bay region." (Unpublished paper for MPP-EAS).

Lee, J. 2004. "Replicating and networking local ICM practices: PEMSEA's experience." *Tropical Coasts,* 11(2):4–8.

Li, H. Q. 1999. "Harmonization of national legislation: A case in Xiamen, China," pp. 355–371. In: Chua T.-E. and N. Bermas. (Eds) *Challenges and opportunities in managing marine pollution in the East Asian Seas.* MPP-EAS Conf. Proc. 12/PEMSEA Conf. Proc. 1. Quezon City: GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas (MPP-EAS)/Partnerships in Environmental Management for the Seas of East Asia (PEMSEA).

MBEMP (Manila Bay Environmental Management Project). 2006. *Integrated Environmental Monitoring Program for Manila Bay.* Manila Bay Environmental Management Project and GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines. 96 pp.

MBEMP (Manila Bay Environmental Management Project). 2001. Manila Bay Coastal Strategy. Manila Bay Environmental Management Project. 108 pp.

McGinn, A. The Health of Oceans, Worldwatch paper 145, Worldwatch Institute 1991, Washington, D.C. (www.worldwatch.org). Costanza, R., et al, The Value of the World's Ecosystem Services and Natural Capital, Ecological Economics, 1998.

Millennium Ecosystem Assessment. 2005. Ecosystems and human well-being. Vol. 5. Our human planet: Summary for decision-makers. Washington, D.C.: Island Press.

Minh, N. T. N. and N. Bermas-Atrigenio. 2004. "Charting a course for ICM in Danang, Vietnam: A convergence of political will, stakeholder support and mobilization." *Tropical Coasts,* 11(1):18–23, 67.

MPP-EAS. 1999a. *Environmental risk assessment: A practical guide for tropical ecosystems.* MPP-EAS Technical Report No. 21. Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme for the Prevention and Management of Pollution in the East Asian Seas, Quezon City, Philippines. 88 pp.

MPP-EAS. 1999b. *Water use zoning for the sustainable development of Batangas Bay, Philippines.* MPP-EAS Technical Report No. 25/PEMSEA Technical Report No. 3. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas (MPP-EAS)/Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines. 50 pp.

MPP-EAS. 1996. *Integrated waste management action plan for the Batangas Bay Region.* MPP-EAS Technical Report No. 9. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas. Quezon City, Philippines. 76 pp.

n.a. 1988. The New Lexicon Webster's Dictionary of the English Language.

Olsen, S. J, Tobey, J. and M. Kerr. 1997. "A common framework for learning from ICM experience." *Ocean and Coastal Management,* 37:155–174.

Olsen, S. B., K. Lowry, and J. Tobey. 1999. *A manual for assessing progress in coastal management.* Coastal Resources Center Report #2211. Narragansett, RI, USA: University of Rhode Island,.

OXMPG (Office of Xiamen Municipal People's Government). 1997. *Xiamen municipal people's government on the implementation of marine functional zoning.* Office of Xiamen Municipal People's Government. Xiamen, China.

PC of Nampho City (People's Committee of Nampho City). 2004. *Coastal Strategy of Nampho City, Democratic People's Republic of Korea*. People's Committee of Nampho City. 54 pp.

PEMSEA. n.d. ICM Code of Good Practice, Draft, unpublished. PEMSEA, Quezon City, Philippines.

PEMSEA. n.d. Integrated Coastal Management Guideline for Application of the ICM Code. PEMSEA, Quezon City, Philippines.

PEMSEA. 2007. *Partnerships in Environmental Management for the Seas of East Asia (1994–2010): A Regional Mechanism Facilitating Sustainable Environmental Benefits in River Basins, Coasts, Islands and Seas.* PEMSEA IEC Material 2. 80 pp. Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships for the Seas of East Asia (PEMSEA), Quezon City, Philippines.

PEMSEA. 2006a. A perspective on the environmental and socioeconomic benefits and costs of ICM: The case of Xiamen, PR China. PEMSEA Technical Report No. 17. GEF/UNEP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines. 132 pp.

PEMSEA. 2006b. *Performance evaluation Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA): Terminal evaluation report.* PEMSEA Information Series. GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines. 177 pp.

PEMSEA. 2006c. *Securing the future through ICM: The case of the Batangas Bay region.* PEMSEA Technical Report No. 19. 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), Quezon City, Philippines. 84 pp.

PEMSEA 2006d. *Xiamen: An ICM journey.* PEMSEA Technical Report No. 18. GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines. 93 pp.

PEMSEA. 2006e. *Xiamen: An ICM journey.* Second Edition. PEMSEA Technical Report No. 18. 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), Quezon City, Philippines. 86 pp.

PEMSEA. 2005a. *Framework for national coastal and marine policy development.* PEMSEA Technical Report No. 14. GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines. 75 pp.

PEMSEA. 2005b. *Guide to establishing integrated information management system.* PEMSEA Technical Report No. 15. Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia. Quezon City, Philippines. 62 pp.

PEMSEA. 2005c. *Integrated information management system for coastal and marine environment.* User Manual. PEMSEA Technical Report No. 16. Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia. Quezon City, Philippines. 62 pp.

PEMSEA. 2004a. *Chonburi initial risk assessment.* PEMSEA Technical Information Report No. 2. Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia. Quezon City, Philippines. 128 pp.

PEMSEA. 2004b. *Training manual on integrated coastal management.* Unpublished.

PEMSEA. 2003a. *Case study on the integrated coastal policy of the Republic of Korea.* PEMSEA Technical Report No.8. GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines. 57 pp.

PEMSEA. 2003b. *The development of national coastal and marine policies in the People's Republic of China: A case study.* PEMSEA Technical Report No.7. GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines. 63 pp.

PEMSEA. 2001. *Manila Bay: Initial risk assessment.* PEMSEA Technical Information Report No. 2001/01. Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia. Quezon City, Philippines. 112 pp.

PEMSEA and Bali PMO. 2004. *Southeastern coast of Bali initial risk assessment.* PEMSEA Technical Information Report No. 11. Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia and Bali Project Management Office. Quezon City, Philippines. 100 pp.

PEMSEA and BSEMP. 2005. *Bohai Sea environmental risk assessment.* PEMSEA Technical Information Report No. 12. Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia and Bohai Sea Environmental Management Project of the People's Republic of China. Quezon City, Philippines. 114 pp.

PEMSEA and MBEMP TWG-RRA. 2004. *Manila Bay refined risk assessment.* PEMSEA Technical Information Report No. 9. Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia and Manila Bay Environmental Management Project, Technical Working Group for Refined Risk Assessment. Quezon City, Philippines. 169 pp.

PEMSEA and Port Klang ICM National Demonstration Project. 2005. *Port Klang initial risk assessment.* PEMSEA Technical Information Report No. 13. Global Environment Facility/United Nations Development Programme/International Maritime Organization Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia and Port Klang Integrated Coastal Management National Demonstration Project. Quezon City, Philippines. 96 pp.

PG-ENRO (Environment and Natural Resources Office of the Provincial Government of Batangas). 1996. *Strategic environmental management plan for the Batangas Bay Region.* MPP-EAS Technical Report No. 3. GEF/UNDP/IMO Regional Programme for the Prevention and Management of Marine Pollution in the East Asian Seas, Quezon City, Philippines. 96 pp.

Provincial Government of Batangas, Philippines and PEMSEA. 2008. State of the Coasts of Batangas Province. Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines. 119 pp.

PMO Bali. 2002. *Coastal Strategy for the southeastern coast of Bali.* Project Management Office, Denpasar, Bali, Indonesia. 74 pp.

PMO Port Klang and LUAS/SWMA (Project Management Office Port Klang and Lembaga Urus Air Selangor/Selangor Waters Management Authority). 2003. Port Klang coastal strategy. Project Management Office and Lembaga Urus Air Selangor/Selangor Waters Management Authority, Shah Alam, Selangor, Malaysia. 63 pp.

PMO Sihanoukville (Project Management Office Sihanoukville). 2003. *Sihanoukville Coastal Strategy.* Project Management Office, Sihanoukville, Cambodia. 54 pp.

Rapport, D. 2002. "Regaining healthy ecosystems: The supreme challenge of our age," pp. 510. In: Rapport, D. J., W. L. Lasley, D. E. Rolston. N. O. Nielsen, C. O. Qualset and A. B. Damania (eds.) 2003. *Managing for healthy ecosystems.* CRC Press.

Ruan, W. and H. Yu. 1999. "Design and implementation of marine functional zoning scheme in Xiamen, China," pp. 341–354. In: Chua, T. E. and N. Bermas. (eds.) *Challenges and opportunities in managing pollution in the East Asian Seas.* MPP-EAS Conference Proceedings 12/PEMSEA Conference Proceedings.

Sorensen, J. C. and S. T. McCreary. 1990. *Institutional arrangements for managing coastal resources and environments.* 2nd Edition. COAST. Renewable Resources Information Series. Coastal Management Publication No. 1. National Park Service, U.S. Department of the Interior and U.S. Agency for International Development.

Thang, H. C., N. T. N. Minh and N. M. Son. 2003. "From demonstration site to national institutionalization of ICM in Vietnam." Paper presented at the East Asian Seas Congress 2003, Putrajaya, Malaysia, 8–12 December 2003.

Tropical Coasts. 2004a. "PEMSEA experiences in the evolution of coastal management." *Tropical Coasts* 11(1). 76 pp.

Tropical Coasts. 2004b. "Coast to coast: From demonstration to replication." *Tropical Coasts* 11(2). 56 pp.

UNDP MDG. 2010. Available at www.undp.org/mdg/basics.shtml.

UNDP SDG. Available at http://www.undp.org/content/undp/en/home/sustainable-development-goals.html

UNEP. 2006. Marine and coastal ecosystems and human well-being: A synthesis report based on the findings of the Millennium Ecosystem Assessment. UNEP. Nairobi, Kenya. 76 pp.

UN/UNFCCC.2001. Report of the workshop on the preparation of national communications from Annex 1 parties. United Nations/ United Nations Framework Convention on Climate Change. FCCC/SBI/2001/INF.4. 15 pp.

UN-ISDR.2004. Living with risk – A global review of disaster reduction initiatives. United Nations Inter Agency Secretariat of the International Strategy for Disaster Reduction. Geneva, Switzerland.

White, A., E. Deguit, W. Jatulan, and L. Eisma-Osorio. 2006. "Integrated Coastal Management in Philippine Local Governance: Evolution and Benefits." *Coastal Management*, 34:287–302.

Winslow, C.-E. A. 1920. "The Untilled Fields of Public Health," *Science,* n.s. 51 (1920), p. 23.

Xu, K. and D. Yuan. 1999. "An assessment of the integrated marine pollution monitoring program of Xiamen," pp. 201–207. In: Chua, T.E. and N. Bermas. (eds.) *Challenges and opportunities in managing pollution in the East Asian Seas.* MPP-EAS Conference Proceedings 12/PEMSEA Conference Proceedings, 1567 pp.