Guidebook on the STATE OF THE COASTS REPORTING

For Local Governments Implementing Integrated Coastal Management in the East Asian Seas Region

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

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Background

Scope

The Guidebook on the State of the Coasts (SOC) Reporting System is intended for local governments in the East Asian Seas (EAS) region currently or planning to implement integrated coastal management (ICM) programs. The Guidebook provides advice for local governments in establishing a regular monitoring and evaluation (M&E) and reporting mechanism. It discusses the requirements, the basis and importance of implementing and sustaining the SOC reporting system. The Guidebook contents are generic, and users are advised to make modifications according to their local situation and capacity. The intention is not to prescribe, but to help coastal managers, local planners and constituent stakeholders to develop and employ a systematic M&E tool within the context of an ICM program. It is therefore essential to understand its linkages to the different activities and outputs generated throughout the process of ICM development and implementation.

Training Program for the State of the Coasts Reporting System

PEMSEA's training program on the implementation of an SOC reporting system is designed to impart to local participants the concept of the SOC reporting system, its significance, the steps in developing the SOC report, and the benefits of adopting the SOC reporting system. The trained participants are expected to be able to continually apply and operationalize the reporting system in the course of implementing their ICM programs.

a. Inception workshop to establish SOC technical teams and develop action plans, followed by data gathering;
b. Field validation, analysis of results and preparation of draft report, and
c. Stakeholders' validation and finalization of the SOC report.

Introduction

The state of the coasts (SOC) reporting system is an operational tool that local governments can use in the monitoring, evaluation and reporting of their integrated coastal management (ICM) programs. For local governments that are about to initiate their ICM programs, the SOC can be used as a tool to determine baseline conditions and priorities to be addressed in an ICM program. For local governments who have ICM programs in place, the SOC can be used as a tool to measure and report progress and impacts of ICM implementation.

The Guidebook is divided into the following five sections:

a. *Section 1* introduces ICM as a strategy for sustainable development of marine and coastal areas;
b. *Section 2* introduces the SOC reporting system and its applications in an ICM program;
c. *Section 3* presents the indicators for the SOC reporting system and the process of selecting the indicators;
d. *Section 4* details the steps in developing the SOC report; and
e. *Section 5* presents the applications of the SOC report in the development and implementation of an ICM program.

The tools and materials that can be used in developing the SOC report for a given coastal area are discussed in the Annexes.

1. Sustainable Development of Marine and Coastal Areas through ICM

1.1. Integrated Coastal Management

Integrated coastal management (ICM) is a natural resource and environmental management system that employs an integrative, holistic approach and an interactive planning process in addressing the complex management issues in the coastal area. The ultimate purpose of ICM is to increase the efficiency and effectiveness of coastal governance in terms of its ability to achieve the sustainable use of coastal resources and of the services generated by the ecosystems in the coastal areas. It aims to do this by protecting the functional integrity of these natural resource systems while allowing economic development to proceed. Through integrated planning, ICM aims to address competing and conflicts arising from multiple use of limited space and resources (Chua, 2006).

1.2. ICM and Global/Regional Environmental Instruments

A number of principles have been enshrined in conventions and/or international agreements to guide decisionmaking and management actions as well as to provide foundations for legislation, policies, programs and projects for the various efforts on the sustainable development of coastal areas and oceans all over the world. Some of these include the United Nations Convention on the Law of the Sea (UNCLOS); United Nations Framework Convention on Climate Change (UNFCCC); Agenda 21; Convention on Biological Diversity (CBD); World Summit on Sustainable Development (WSSD) – Johannesburg Plan of Implementation; the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA), which was adopted by the 12 East Asian nations in 2003 (Brunei Darussalam, Cambodia, China, DPR Korea, Indonesia, Japan, Malaysia, Philippines, RO Korea, Singapore, Thailand and Vietnam), as well as other relevant regional and international instruments. ICM serves as the management framework in achieving the goals and targets set by these various instruments (PEMSEA, 2008).

1.3. ICM as a Tool for Sustainable Development of Coastal and Marine Areas

The development and implementation of ICM has evolved over the past 30 years. It is now recognized as a strategy and process for achieving sustainable development of marine and coastal resources and the coastal environment. Significantly, ICM is primarily a tool for use by local governments, to address on-the-ground challenges such as overexploitation of natural resources and uncontrolled use of marine and coastal areas within the jurisdiction of local governments. ICM, as applied, consists of broad-based approaches that support sustainable development, operational strategies that create an effective governance framework, and operational tools that provide specific best practices (PEMSEA, 2008).

1.4. ICM Cycle

The development of an ICM program follows a step-wise process that includes six stages: (1) preparation; (2) initiation; (3) development; (4) adoption; (5) implementation; and (6) refinement and consolidation.

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. It presents essential activities and/or outputs that need to be conducted/completed before moving on to the next stage (e.g., SOC baseline before risk assessment), while some activities (e.g., public awareness, training, stakeholder consultation and participation, monitoring and evaluation) cut across all stages and may need to continue throughout the process (**Figure 1**).

The key outputs of the ICM development and implementation cycle include:

a. A governance mechanism for sustainable development of coastal and marine areas (e.g., policy, strategies and plans, institutional arrangements, legislation, capacity development, information and public awareness, and sustainable financing mechanism);
b. Area- and issue-specific management programs based on identified priorities (e.g., natural and man-made hazards; habitat and fisheries; water use and supply; pollution reduction and waste management); and
c. Monitoring, evaluation and reporting system.

Figure 1. The ICM Development and Implementation Cycle.

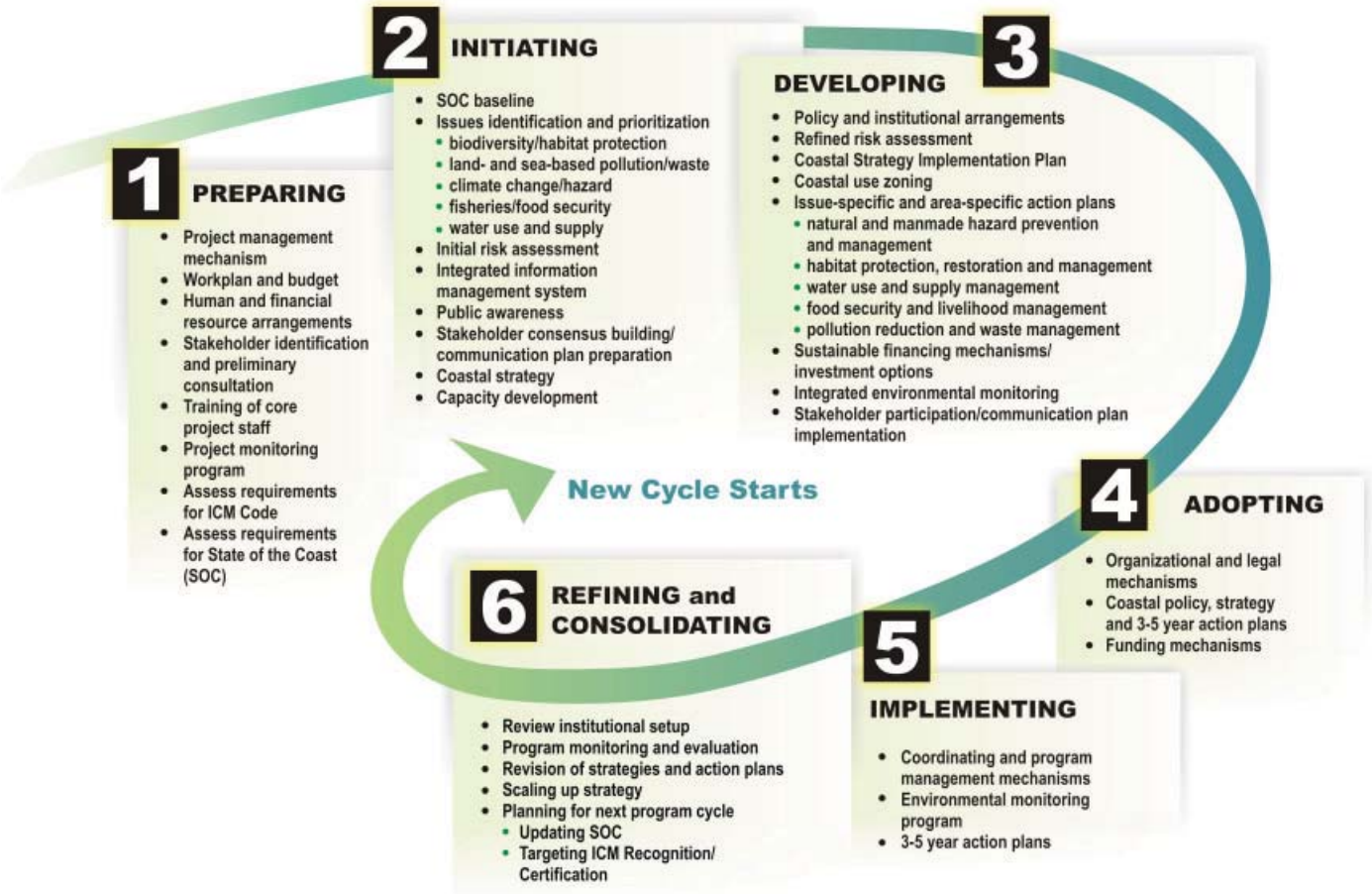
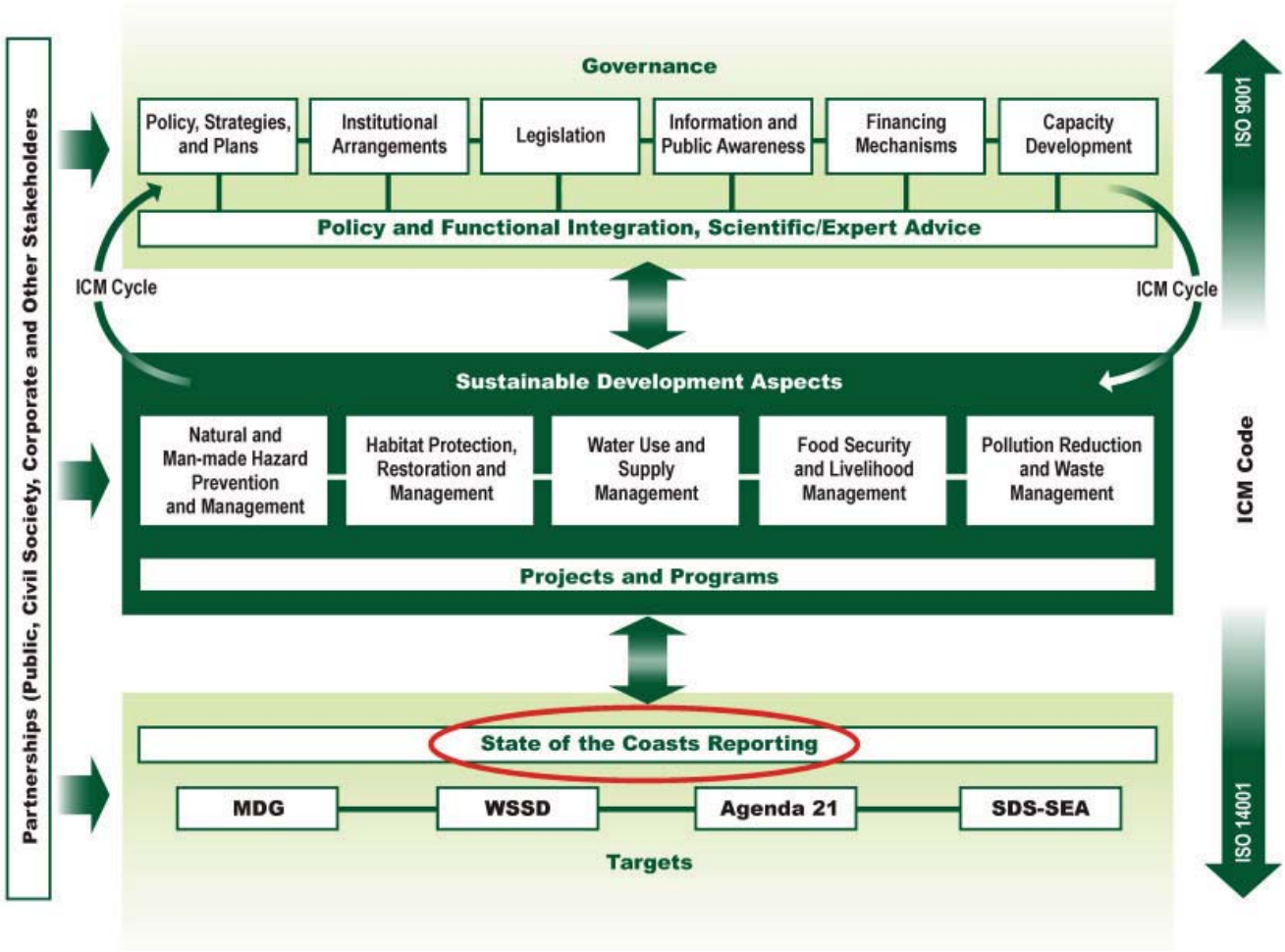


Figure 2. PEMSEA's Framework for Sustainable Development of Coastal Areas through ICM.



1.5. Framework for Sustainable Development of Coastal Areas

Over the past 17 years, the practical experiences of PEMSEA in the development and implementation of ICM programs in the East Asian Seas Region have been consolidated into the Framework for Sustainable Development of Coastal Areas through ICM implementation (SD Framework, **Figure 2**). The SD Framework covers a system of governance as well as five sustainable development aspects or issue-specific management programs that are critical to achieving the overall goal of sustainable development. Each of these governance elements and sustainable development aspects are briefly described below (PEMSEA, 2007).

1.5.1. Governance

The Governance component of the SD Framework underscores the integration of policy and strategies in developing specific actions plans to create a policy environment for environmental financing, ecosystem protection and capacity development. It promotes institutional arrangements that facilitate interagency, multisectoral cooperation and collaboration; develops appropriate legislation to ensure policy and functional

integration; and provides a legal basis for their enforcement. The key elements of good governance identified in the SD Framework include:

i. **Policy, strategies and action plans**: establishing and adopting policy reforms, shared visions and missions, long-term strategies and action plans that express intention, direction, targets and timeframe for managing marine and coastal resources and their sustainable use through an integrated approach.
ii. **Institutional arrangements**: operationalizing interagency and multisectoral coordinating mechanisms that involve concerned stakeholders in planning, implementing, evaluating and continually improving programs for sustainable development through ICM programs.
iii. **Legislation**: developing and implementing national legislation and/or local administrative orders, which support new and existing policies that facilitate the effective implementation of ICM.
iv. **Information and public awareness**: putting into operation communication strategies and plans for ensuring that stakeholders are informed of the scope, benefits and threats to their local ecosystems, and the programs that are being developed and implemented to reduce threats and enhance benefits.
v. **Financing mechanism**: institutionalizing the measures and means to support conservation of resources and required environmental infrastructure improvements through public- and market-based sources.
vi. **Capacity development**: incorporating capacity development as an indispensable component of all aspects of sustainable development programs, from inception and implementation to monitoring and evaluation and, in particular, equipping local personnel and managers with the essential technical and management skills to plan and manage coastal areas and resources.

1.5.2. Sustainable Development Aspects

There are five sustainable development aspects/programs identified in the SD Framework, namely: natural and man-made hazards, habitats/biodiversity, water supply, food security, and pollution. These aspects represent the common challenges faced by local governments and communities with respect to protecting and sustaining coastal and marine ecosystem services. These aspects are characterized as follows:

i. **Natural and man-made hazard prevention and management**: The region frequently experiences natural and man-made disasters, including earthquakes, tsunamis, tidal storms, flooding, sea level rise, red tides, oil and chemical spills, etc. A first step in the process is to identify and delineate the hazards in the area, the likelihood of a disaster occurring, the potential risks, the likely consequences, and the ultimate impact on the lives and property of coastal inhabitants, as well as ecosystem health.
ii. **Habitat protection, restoration and management**: Specific habitat management programs are developed and implemented to make adequate protection, conservation and/or restoration of coastal and marine ecosystem services provided by coral reefs, mangroves, seagrass beds, wetlands and other natural resources.
iii. **Water use and supply management**: Forward-looking water resource management programs are essential to sustainable development, especially in urban centers where water supply shortages are anticipated. Measures include sound water use policy, tariff systems, water allocation/licensing, water conservation and reuse, protection of water sources, and ensuring the quality, adequate supply and accessibility of water services to all citizens.

iv. **Food security and livelihood management**: The sustainable supply of fisheries in rivers, lakes and coastal seas is both a target and an outcome of sustainable development, in the context of ICM/ ecosystem-based management. Key factors being addressed under this aspect include: (a) food security, especially for the poor, given the role of fisheries as the traditional source of animal protein for the coastal poor; (b) supplemental livelihood programs to reduce overfishing and to increase income from other sources of living; and (c) increased employment/job opportunities as a consequence of protecting and enhancing ecosystem services, including sustainable coastal tourism, sustainable agriculture/aquaculture; sustainable forestry, etc.

v. **Pollution and waste management**: Pollution reduction, waste management and sanitation are common challenges for every urban and rural setting. Sustainable management interventions entail: (a) understanding of the sources and characteristics of contaminants and waste materials entering the environment; (b) awareness building and education of the public; (c) policy reforms, legislation, capacity development and innovative, market-based financing instruments; (d) appropriate and affordable technologies; (e) incentive and enforcement mechanisms to promote change; and (f) societal behavioral shifts in consumption and use patterns.

The SD Framework further points out: (a) the application of the **ICM program development and implementation cycle** to plan, execute and deliver essential outputs under the governance and sustainable development aspects of the SD Framework; (b) a **State of the Coasts (SOC)** reporting system to monitor and assess conditions, responses and trends in coastal and marine areas, for purposes of developing and continually improving ICM programs; and (c) an **ICM Code** to guide a local government's self-assessment of its progress and achievements with respect to ICM implementation, as well as third party certification for the conformance of the ICM program to international standards (ISO) for quality management and sound environmental management.

As local governments go through each stage of the ICM development and implementation cycle (**Figure 1**), the different governance elements are put in place and/or strengthened to address priority management issues (i.e., sustainable development aspects in the SD Framework) in the coastal and marine areas within their areas of jurisdiction.

2. State of the Coasts Reporting System

2.1 State of the Coasts Reporting System and ICM

The SOC reporting system consolidates information coming from administrative, social, economic and environmental sectors, for purposes of: (a) establishing baseline conditions in a coastal area prior to the startup of an ICM program; (b) assessing progress, achievements and shortcomings of ongoing ICM programs by determining changing conditions with respect to governance, and social and economic conditions, as well as trends and/or emerging environmental issues; and (c) developing recommendations

for continual improvement of ICM programs for consideration by Local Chief Executives/local governments. The benefits of the SOC to local governments include:

1. SOC is a monitoring and reporting instrument designed for use by local governments and their stakeholders. It facilitates multisectoral participation, interaction and awareness building in coastal and marine governance, and enhances local government leadership among its constituents.
2. SOC provides Local Chief Executives/local governments with information on changing social, economic and environmental conditions in the area, and outlines the potential impacts and implications of such changes.
3. SOC spells out the perspectives of the community on the benefits and challenges in sustainable coastal development, and the effectiveness of the local government's ICM program in deriving benefits.
4. SOC offers recommendations for consideration by Local Chief Executives/local governments to address unsustainable trends and emerging problems through improvements in ICM programs.

2.2. Objectives of the SOC Reporting System

The objectives of the SOC reporting system are identified as follows:

SOC Baseline

1. Gather comprehensive qualitative and quantitative baseline information on the demographic, socioeconomic, environmental status, as well as management actions in a given coastal area;
2. Determine existing governance mechanisms and implementing arrangements that are in place;
3. Determine and prioritize pertinent issues to be included in an ICM program;
4. Establish the social, economic and environmental conditions/benchmarks, as a basis for comparison in future SOC reports; and
5. Identify critical information gaps that will be the subject of further research and/or future monitoring.

SOC Updating/SOC Report on Ongoing ICM Programs

1. Review the scope of the ICM program and delineate the governance mechanisms and implementing arrangements that have been put in place;
2. Assess the extent and effectiveness of ICM program implementation;
3. Identify trends or changes in the social, economic and environmental status of the area and determine the driving forces for change;
4. Assess the implications of identified trends; and
5. Promote adaptive management in ICM program implementation, in response to changing conditions.

Table 1. Relationship of the SOC indicators to some regional and international sustainable development targets.

Regional/International Agreements	Targets	SD Framework	SOC Indicators
Sustainable Development Strategy for the Seas of East Asia • **Haikou Partnership Agreement** • **Manila Declaration**	National coastal and ocean policies and supporting institutional arrangements in place in at least 70% of PEMSEA Partner Countries by 2015	Policy, strategies and plans/ Institutional arrangements/ Legislation/ Financing mechanisms	• [002] Coastal strategy and action plans • [003] Local government development plans integrating coastal and marine areas • [004] Coordinating mechanism • [005] Participation of stakeholders in coordinating mechanism • [006] ICM enabling legislation • [013] Budget for integrated coastal management
	ICM programs for sustainable development of coastal and marine areas and climate change adaptation covering at least 20% of the region's coastline by 2015		
Hyogo Framework of Action	Reduce disaster risk by 2015	Natural and man-made hazard prevention and management	• [015] Level of preparedness for disasters • [016] Degree of vulnerability to disasters • [017] Social and economic losses due to disasters
Convention on Biological Diversity	By 2020, the rate of loss of all natural coastal and marine habitats in coastal and marine areas of significant environmental value are at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced (modified from the Aichi Biodiversity Targets, B5)	Habitat protection, restoration and management	• [018] Habitat management plan and implementation • [019] Areal extent of habitats • [020] Protected areas for coastal habitats and heritage
	By 2020, at least 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes (modified from the Aichi Biodiversity Targets, C11)		
Millennium Development Goals	Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day	Food security and livelihoods management	• [028] Poverty incidence, employment and education • [027] Malnutrition rate
	Halve, between 1990 and 2015, the proportion of people who suffer from hunger		
	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling		
	Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	Water use and supply management/ Pollution reduction and waste management	• [023] Access to improved water source • [033] Sanitation and domestic sewerage
Agenda 21	By the year 2025, provide all urban populations with adequate waste services	Pollution reduction and waste management	• [030] Pollution management plans and implementation • [034] Municipal solid waste • [035] Agricultural, industrial and hazardous wastes
	By the year 2025, ensure that full urban waste service coverage is maintained and sanitation coverage achieved in all rural areas		

3. Indicators

Indicators are quantitative/qualitative statements or measured/observed parameters that can be used to describe existing situations and measure changes or trends over time (Duda, 2002). Indicators are developed as tools to make monitoring and evaluation processes operational.

3.1. Indicators in an ICM program

In an ICM program, indicators can become powerful management tools if they demonstrate the measure of effectiveness of a project, program or policy. They become effective tools when they are used to reflect changes in the state of the coastal and marine environment, trends in socioeconomic pressures and conditions in coastal areas, and corresponding links among anthropogenic activities and ecological health. Indicators can provide benchmarks against which the success of ICM programs can be measured. So that when used to evaluate ICM program performance, indicators offer feedback on action plans and provide parameters for subsequent actions that may prove useful in justifying further investments in ICM (Chua, 2006).

3.2. Indicators for the SOC Reporting System

The process of developing the set of indicators for the SOC entailed a series of consultations, commencing in 2006 during the East Asian Seas Congress in Haikou City, China (PEMSEA, 2006; Tropical Coasts, 2007), and the compilation, analysis and preparation of a matrix of indicators from various environmental assessments and management programs conducted within and outside the East Asian Seas region. Among the references used in the compilation of indicators were: the Australian State of the Environment (Beeton et. al., 2006); the IOC handbook (UNESCO, 2006); ICM indicators (Chua, 2006); environmental indicators used by the United Nations Environment Programme (UNEP-RRCAP, 2004a; 2004b), the World Bank (http://data.worldbank.org/indicator), United States-Environmental Protection Agency (US-EPA) (http://water.epa.gov/type/oceb/assessmonitor/nccr4_factsheet.cfm), Australian Coastal Indicators (www.ozcoasts.gov.au/indicators/index.jsp) and other studies related to coastal and marine assessments (DEH, 2004; CSIR, 2005; www.heinzctr.org/Ecosystems.html).

From the matrix, a total of 160 indicators were selected based on the following criteria: (a) simple and meaningful; (b) easy applicability in the region; and, c) complementary to the indicators identified in relevant international instruments (e.g., WSSD, Agenda 21, MDG, Convention on Biological Diversity (CBD), SDS-SEA, and the Bali Plan of Action). **Table 1** shows the relationship of selected SOC indicators to various regional/international agreements and targets.

The selected indicators for the *State of the Coasts* are organized in accordance with the SD Framework (**Figure 2**). The selected indicators provide the basis for measuring current status, changes over time, management responses, targets and impacts of management actions in each of the Governance elements as well as the five *Sustainable Development Aspects* of the SD Framework.

Figure 3. **Core Indicators for the Governance Elements with Indicated Linkages to the Six-stage ICM Development and Implementation Cycle.**

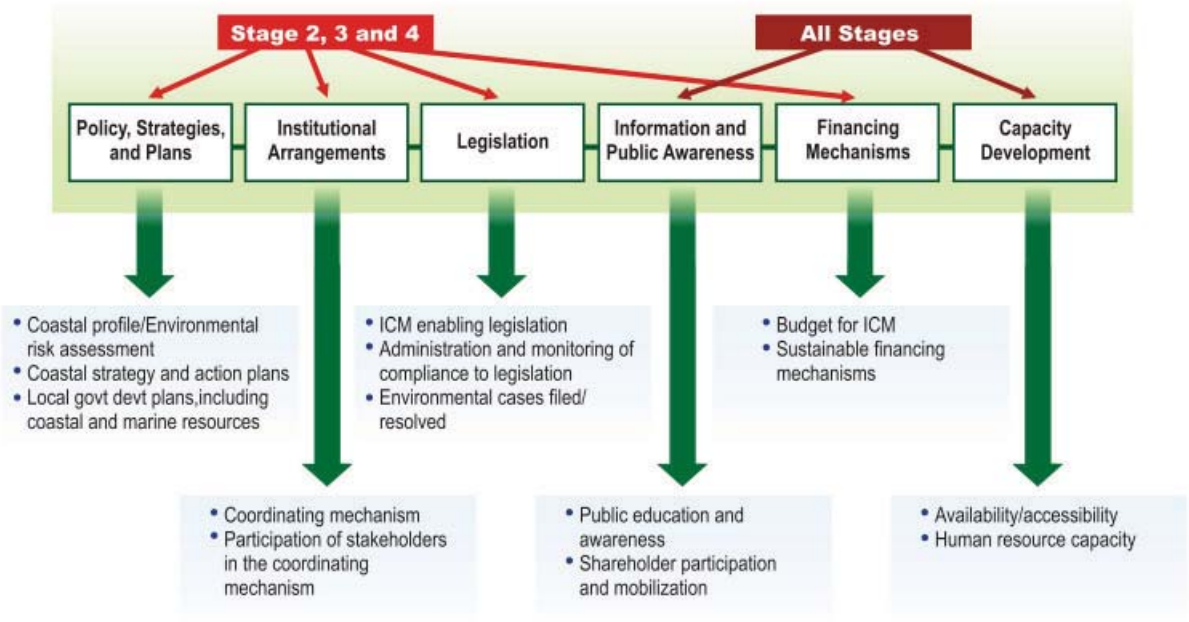
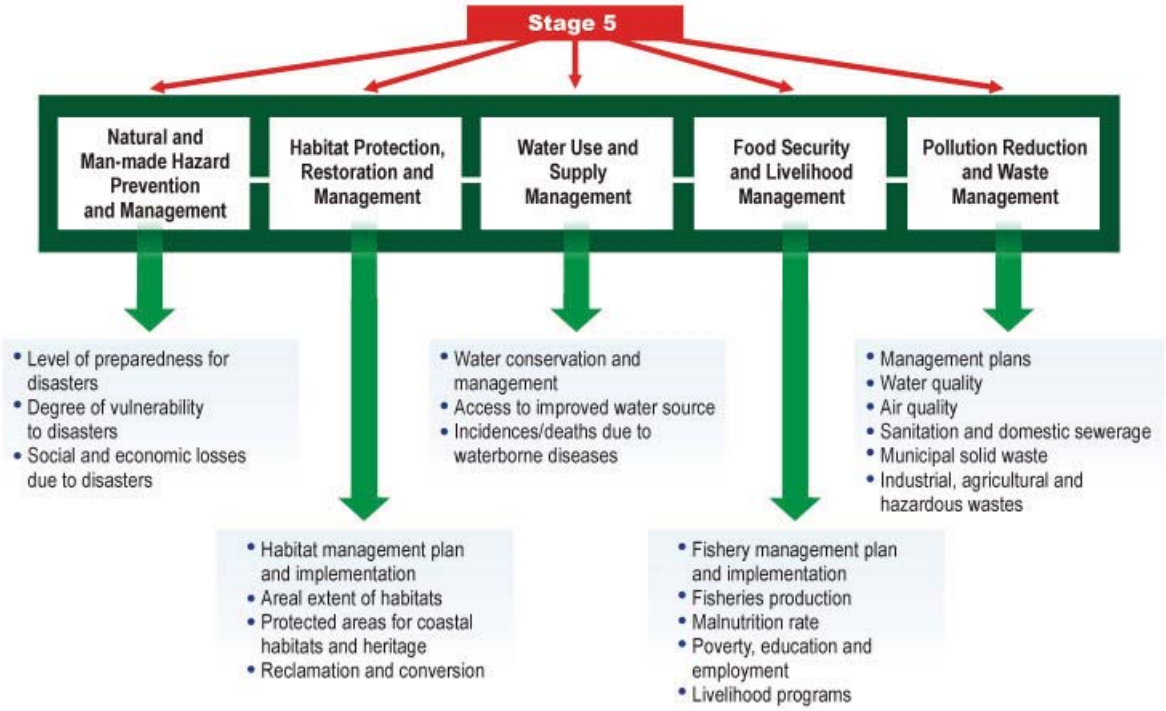


Figure 4. **Core Indicators for the Sustainable Development Aspects with Indicated Linkages to the Six-stage ICM Development and Implementation Cycle.**



3.3. Core Indicators for the SOC Reporting System

From a total of 160 SOC indicators (**Annex B**), 35 core indicators were determined as the essential information needed to evaluate progress in ICM implementation based on PEMSEA's experience in developing and implementing ICM programs at the local government level. The 35 core indicators relate to each of the components of the SD Framework as shown in **Figures 3 and 4**. Detailed descriptions, rationale, data requirements and guide questions for these 35 core indicators are given in Annex A.

Additional core indicators may be considered depending on their relevance to the local area and the availability of information. Part III of Annex B presents a list of additional indicators that can be considered. As implementation of the SOC reporting system progresses, more indicators may be considered in the succeeding SOC reports.

3.4. SOC Reporting Template

To facilitate data gathering, an SOC reporting template has been developed. The template includes three parts:

- ***Part I*** provides basic information on demographic, socioeconomic, and biophysical information of the target coastal area, as well as information relevant to the MDGs.

- ***Part II*** presents the 35 core indicators for SOC reporting, summarizes targets and provides information on progress made in meeting the targets. This Part represents a major portion of an SOC report.

- ***Part III*** of the template contains comprehensive set of indicators (160 indicators) that adds further information and detail to the status of the coastal area. Depending on available data, local capacity, and relevance in evaluating an ICM program, local governments can select additional indicators from this set, as well as using the 35 basic set of core indicators in Part II.

With the large amount of data/information required in the template, accomplishing the template is not a "one-time" process but needs to be addressed regularly. The information may be updated with each reporting cycle of the local government, but preferably on an annual basis. It is also important to indicate "no data" where information is not available in order to identify critical data gaps, in relation to the various components of the SD Framework. Sources of data, including personal communications or interviews should be documented for validation purposes.

The template was initially tested in Batangas, Philippines. The template is now being used in 20 other ICM sites (i.e., Sihanoukville, Cambodia; Xiamen and Dongying, China; Bali, Sukabumi and Jakarta Bay, Indonesia; Sedone, Lao PDR; Guimaras, Philippines; Chonburi, Thailand; Liquica and Manatuto, Timor-Leste; and Danang, Thua Thien Hue, Quang Nam, Quang Ninh, Hai Phong, Nam Dinh, Khanh Hoa, Ba Ria Vung Tau, Soc Trang and Kien Giang, Vietnam). Over time, as more experience is gained on the use of the template and SOC reporting system, further improvements will be made on the format and content of this tool.

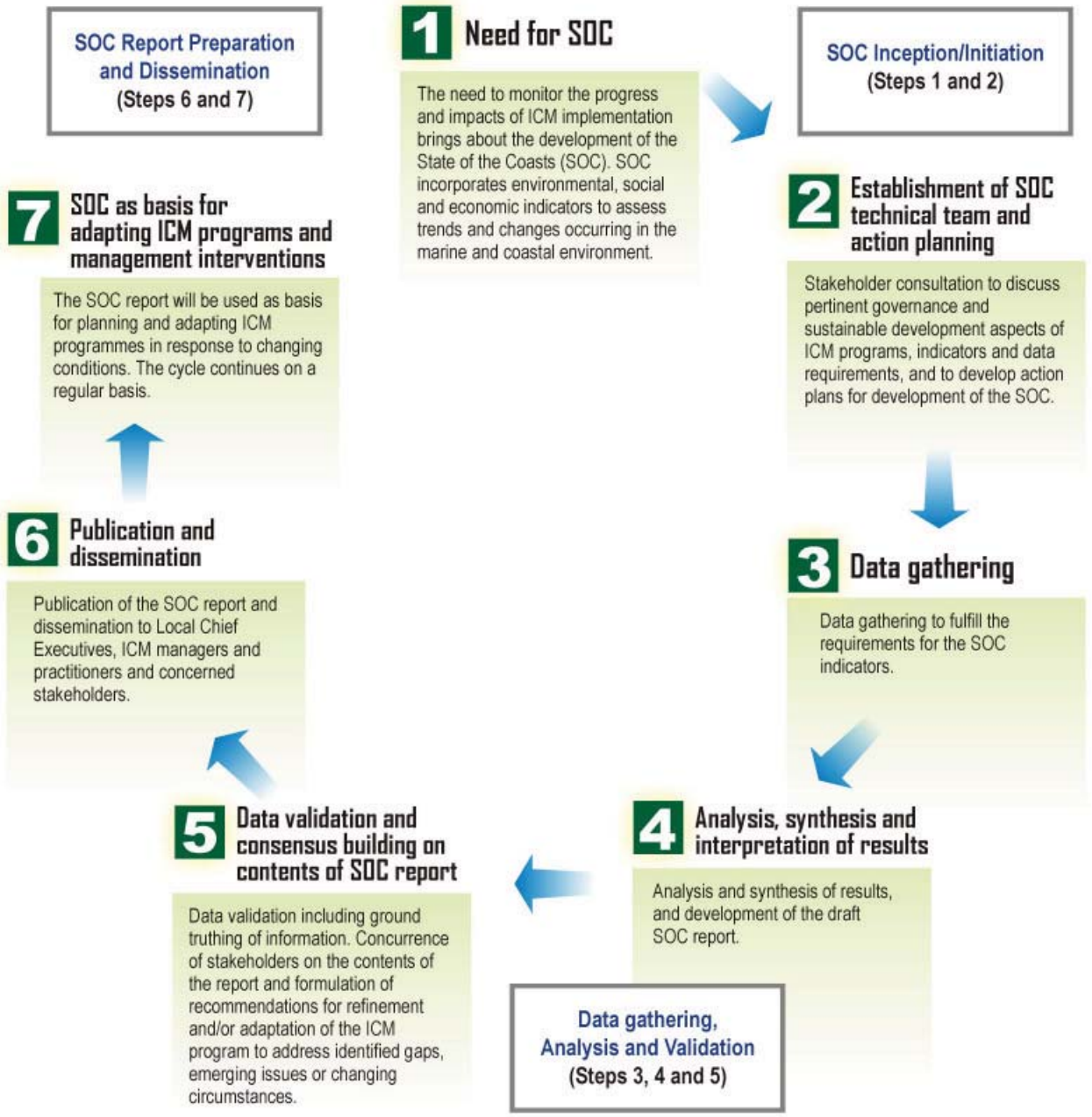
A sample of an accomplished SOC reporting template is given in **Annex C**.

4. Steps in Developing the SOC Report

The general steps for the development of the SOC report are presented in **Figure 5**. The required outputs for each of the steps are also identified. There are three major stages in preparing the SOC report, namely: (1) SOC inception or the initiation of SOC implementation; (2) data gathering, analysis and validation; and (3) report preparation and dissemination. The whole process takes about six months and is best developed by involving the relevant stakeholders from national and local government agencies, the academe, the private sector, civil society and nongovernmental organizations (NGOs). The ICM Coordinating Office and an interagency and multisectoral technical working group need to work in partnership in order to develop and implement the SOC.

The following steps may be considered when implementing an SOC reporting system at an ICM site:

Figure 5. General steps in Developing an SOC Report.



4.1. SOC Inception and/or Initiation of SOC Implementation

4.1.1 Organize and conduct an SOC inception workshop for the purposes of:

a. Explaining the objectives and methodology employed in the SOC reporting system;
b. Reviewing the various parameters and indicators that are determined in the SOC reporting;
c. Assessing the availability and accessibility of relevant data and information for inclusion in the SOC report, including determination of the physical boundaries and baseline year that will be employed in the baseline/initial SOC report for the site (see **Box 1**).

Workshop participants will include representatives from government (e.g., planning, environment, agriculture, fisheries, health, disaster, engineering, sanitation and waterworks offices) and nongovernment agencies and organizations, including private sector and academe known to be repositories of data and information as outlined in the SOC template (**Annex B**). If possible, workshop participants identified are those working on data and information management in their respective agencies, organizations or institutions. It is very important that participants have initially reviewed the SOC template and the data requirements for the SOC indicators to facilitate the conduct of the workshop. It is also critical at this stage that stakeholders appreciate the benefits of the reporting system so as to engage them to actively participate and contribute for the development of the SOC. Participants may be asked to bring with them relevant data/information from their respective agencies for an initial assessment. Also, it is helpful if relevant sources of information (e.g., coastal environmental profiles, socioeconomic profiles, coastal management plans, etc.) are compiled prior to the inception workshop.

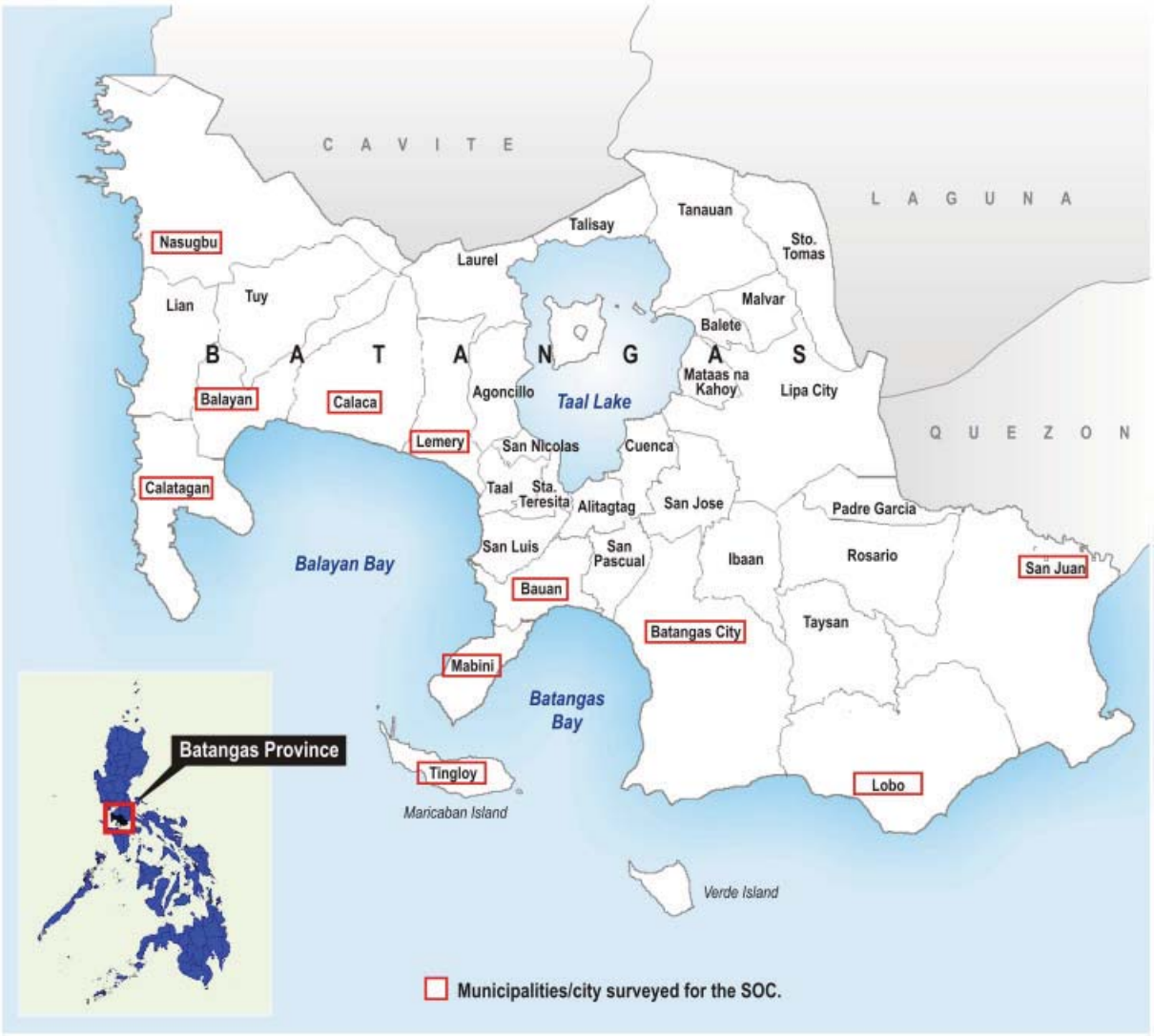
A significant proportion of the data/information to be used for the preparation of the SOC report is secondary information gathered mainly from existing databases and information systems in government

Box 1. Defining the Spatial and Temporal Scale.

The SOC report coverage, both spatial and temporal, must be clearly identified upon the initiation of SOC implementation. The spatial coverage corresponds to the management boundary of ICM program implementation. The temporal scale, on the other hand, clearly identifies the baseline year and/or years to be considered for the development of the SOC report. The SOC reporting years can date back to 1990, which also corresponds to the baseline year for the Millennium Development Goals (MDGs). As such, it not only allows local governments to assess their progress in terms of their ICM implementation, but also their progress in meeting the MDG targets. In the event that data/information may not be available from 1990, local governments should consider at least five years prior to the initiation of an ICM program as the baseline year for SOC reporting. If annual data is not available prior to ICM implementation, data in aggregate years (e.g., every two or five years) can be reported. After the initiation of the ICM program, annual data should be reported up to the most recent available data/information.

For example, the *State of the Coasts of Batangas Province* (PGB and PEMSEA, 2008) covers the 34 coastal and non-coastal cities and municipalities of the Province from years 1990–2007. The baseline year, i.e., 1990, was four years prior to the establishment of the ICM program in Batangas Bay in 1994 and coincides with the baseline year of the MDG.

Geographical Scope of SOC Batangas Province (1990-2007)



The SOC of Preah Sihanouk Province, Cambodia on the other hand covers the years 1998–2009. The ICM program in Sihanoukville was established in 2001.

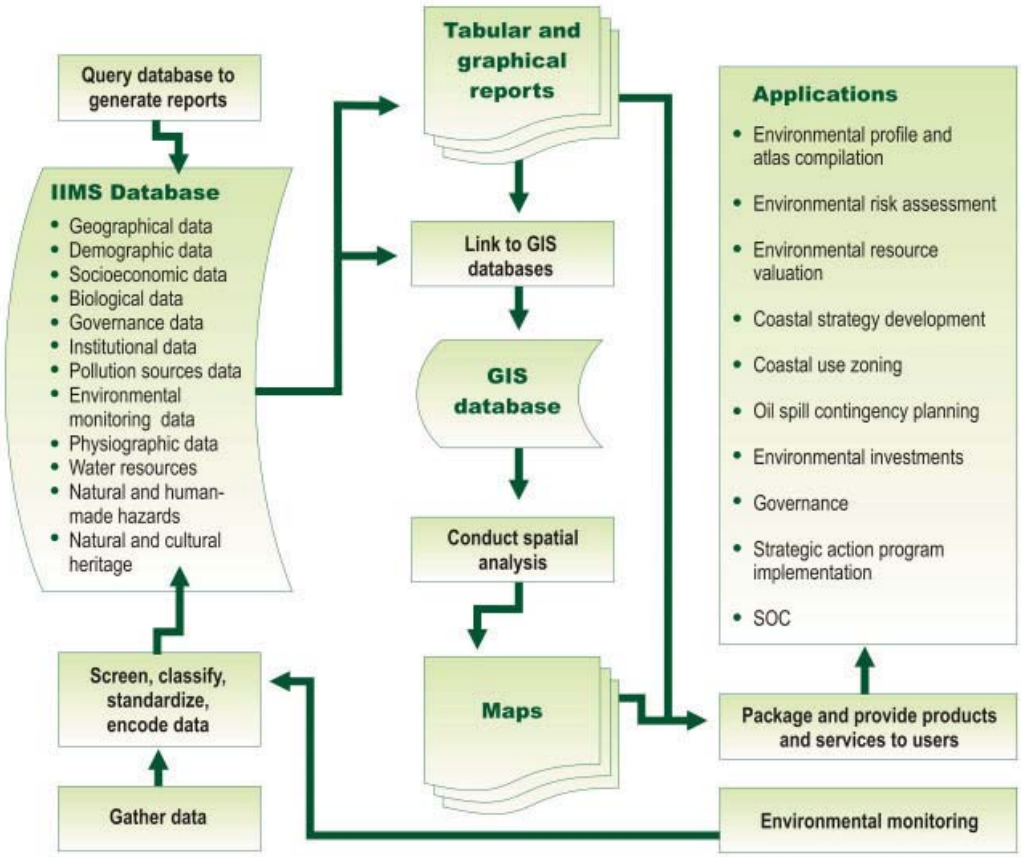
Geographical Scope of the SOC of Preah Sihanouk Province (1998-2009).

agencies, research and academic institutions, NGOs and the private sector. Primary data collection should be considered only when little or no information is available from these sources. Critical data gaps identified in the first SOC report can be addressed through primary data collection over the course of the ICM program. These data can then be included in succeeding SOC reports. If possible, relevant data/ information should be gathered and stored in a multipurpose data management/decision-support system (see **Box 2, Integrated Information Management Systems for Coastal and Marine Environment, IIMS**) for easy access and enhanced analysis.

4.1.2 Prepare a work plan, schedule and budget for the development and implementation of the SOC reporting system (see **Box 3**);

Box 2. Integrated Information Management System.

The Integrated Information Management System (IIMS) is a relational database developed by PEMSEA that captures comprehensive data sets relevant to marine and coastal areas and river basins. The data categories captured in the IIMS are given below. These data categories largely cover the requirements for the SOC.



4.1.3 Establish a multisectoral Technical Working Group (TWG) that will be responsible for the development and implementation of the SOC reporting system, and assign roles and responsibilities among the TWG members. The multisectoral task team is important since the SOC requires data from different sectors and stakeholders. No single agency or entity may have all the data required in the SOC. The members of the TWG should have knowledge, expertise and access to specific sectoral data required in the SOC, which would be helpful when contributing to the data collection, analyses, interpretation and preparation of the report (see **Box 4**).

Box 3. Example of a Work Plan for SOC Development and Implementation.

Activities	Outputs	Timeline	Responsible Centers	Budget
1. Workshop to introduce the SOC reporting system to stakeholders	Stakeholders informed of the objectives and requirements of the SOC reporting system		Project Management Office (PMO) or ICM Coordinating Office	
2. Identification and establishment of SOC task team	SOC task team established			
3. Data gathering	Accomplished SOC reporting template		SOC Task Team, PMO	
4. Data validation	Validated SOC data			
4.1. Conduct validation workshop			SOC Task Team, PMO	
4.2. Conduct field validation			SOC Task Team, PMO	
5. Data analysis, synthesis and interpretation of results			SOC Task Team, PMO	
6. Drafting of SOC report	Draft SOC report		SOC Task Team, PMO	
7. Consensus building on the contents of the report with Local Chief Executive, technical team and other stakeholders			SOC Task Team, PMO, Local Chief Executive, PCC	
8. Publication of SOC report			SOC Task Team, PMO	
9. Dissemination of SOC report, including presentation/ dissemination to Local Chief Executive			SOC Task Team, PMO, Local Chief Executive, PCC	
10. Updating			SOC Task Team, PMO	

Box 4. Forming the Multisectoral Technical/Task Team for the SOC.

The multisectoral technical/task team oversees the development and implementation of the SOC reporting system. Members of the technical team can come from the different government agencies (e.g., planning, environment, health, waterworks and sanitation, fishery, agriculture, engineering, disaster), NGOs, academe, private sector, civil society and people's organizations (POs) which are known to be repositories of information.

The composition, including number of members of the technical team varies in a particular local government or coastal area. In the development of the SOC of Batangas Province, for example, the technical team consisted of representatives from national government agencies (Department of Environment and Natural Resources, Bureau of Fisheries and Aquatic Resources, Philippine Coast Guard, Philippine Ports Authority); provincial government offices (planning, agriculture, environment, health, social welfare and development, community development); municipal offices of 11 coastal city/municipalities (agriculture, disaster, engineering, environment, health, planning), and representatives from the academe, private sector, NGOs and POs.

In the case of Chonburi, Thailand, a Provincial Order was issued in January 2009 establishing the technical working groups (TWGs) for the development and implementation of the SOC reporting. The TWG consisted of the following:

1. Advisory Group composed of the Chief Executives and Mayors of Chonburi Province and its 26 coastal LGUs, and representatives from the national government agencies (Department of Environmental Quality Promotion, Department of Pollution Control, Department of Marine and Coastal Resource, Department of Fisheries) and the academe (Thailand Environment Institute).
2. Task teams for gathering municipal level data composed of the Municipal Clerk, Division of Public Health and Environment, and Policy and Planning Office.
3. Task team for gathering provincial and national level data composed of provincial offices in natural resources and environment, public health, statistics, labor protection and welfare, research institute and universities.
4. The task team for consolidation, analysis and drafting of SOC report for Chonburi was composed of representatives from the municipalities, provincial offices, universities and research institutions.

In Timor-Leste, where the SOC reporting was initiated in two districts (Liquica and Manatuto), the task team in each of the district consists of representatives from the district offices of fisheries, education, health and sanitation, natural resources, disaster, environment, social and infrastructure.



4.1.4 As deemed necessary, a local consultant may be engaged to provide technical support and assistance to the TWG during the development, implementation and adoption of the SOC reporting system by the local government unit.

4.1.4 Develop and implement a communication plan to inform concerned stakeholders and sectors of the value and benefits of implementing the reporting system, the results of the initial SOC report, and the value of sustaining the implementation of the reporting system;

4.1.5 Identify capacity development/training needs of the local government unit and/or the TWG members in order to facilitate the formulation, adoption, implementation and sustainability of the SOC reporting system, and incorporate the identified needs into the capacity development program of the ICM program.

4.1.6 The expected outputs at this stage are:

a. TWG for SOC established, including roles and responsibilities of TWG identified;
b. Detailed work plan, budget and schedule including communication plan for dissemination of SOC information to stakeholders developed;
c. Initially accomplished SOC template with sources of information identified; and
d. Potential data gaps identified.

4.2 Data Gathering, Analysis and Validation

4.2.1 The TWG/ICM Coordinating Office will facilitate the conduct of data gathering by:

a. Finalizing the SOC template to be used during data gathering, including the indicators and units of measurement, associated checklists, questions, survey forms, etc.
b. Setting up a database for encoding, storing, retrieving and analyzing data and information that will be gathered and utilized as part of the SOC reporting system;
c. Organizing and conducting a workshop for data gatherers/data providers to review the SOC template and to confirm the baseline year, temporal and spatial coverage, and data collection, recording/transfer and storage procedures, as well as the coverage and schedule for each data gatherer/provider;
d. Pre-testing the data gathering and recording system;
e. Coordinating the implementation of the data gathering by the data gatherers/providers and recording of information in the database.

4.2.2 The TWG/ICM Coordinating Office will review and analyze the information being collected and recorded for the purpose of:

a. Ensuring consistency in the baseline year, spatial and temporal coverage, indicators, and methods/ units of measurement, as well as comprehensiveness of data and information;
b. Maintaining quality assurance/quality control on data recording;
c. Identifying gaps in information and/or indicators, and taking measures to overcome such gaps if possible;
d. Reviewing information from the baseline year and assessing priority issues and/or significant changes that have occurred in the sustainable development of coastal and marine resources and the coastal environment since the startup of the ICM program, as relevant;
e. Formulating a theme and outline for a baseline/initial SOC report for the site, including the core indicators that will be the focus of the initial report.

4.2.3 Based on the previous data analysis and recommendations of the TWG regarding the theme and indicators for the initial SOC report, the TWG/ICM Coordinating Office will conduct a data validation exercise, including the following:

a. As necessary, conduct field validation of data and information through interviews with local agencies, local government officials and nongovernment stakeholders, review of relevant documentation (e.g.,

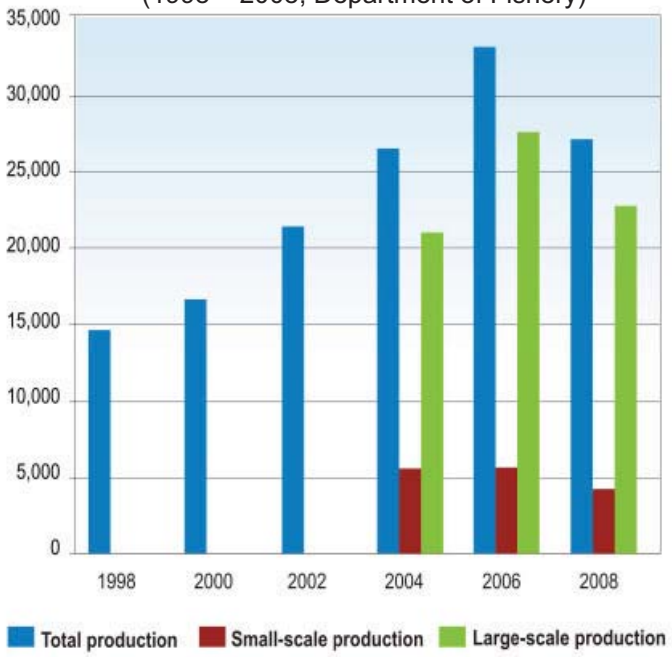
Box 5. Data Analysis, Synthesis and Presentation.

Data gathered for the SOC must be carefully processed and converted into a format that is easily understood in order for it to be useful in planning and decisionmaking. Data can be transformed into summary tables, graphs or diagrams so as to communicate the information needed for assessing the condition of a given coastal area.

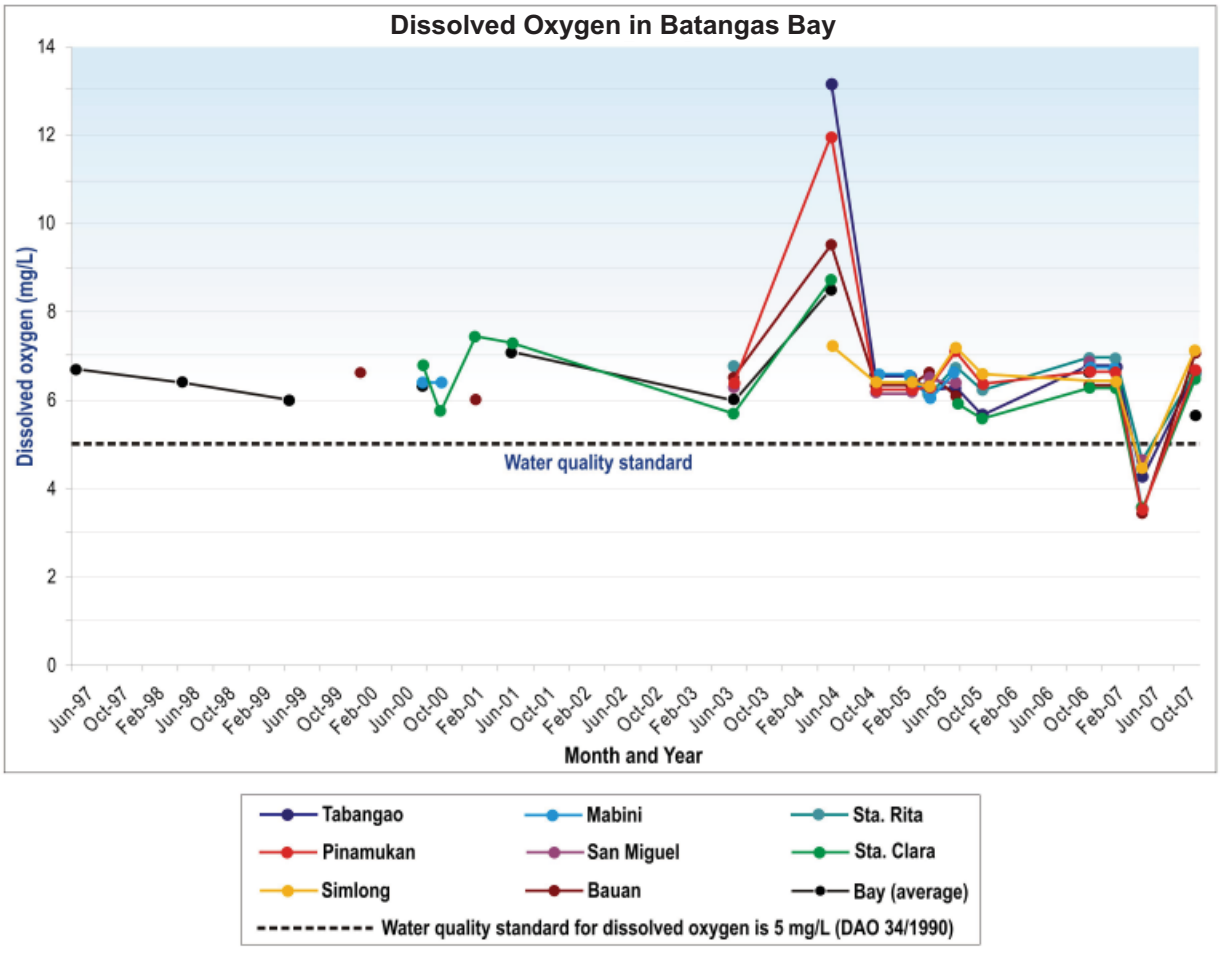
For example, qualitative or textual data can be summarized into tables such as the list of local laws/ordinances enacted by year or the list of organized groups in the area with corresponding number of members and activities.

As the SOC evaluates progress, data are usually collected over a period of time to indicate trends. For example, the figure on the right shows fisheries production in Sihanoukville, Cambodia covering the periods 1998 to 2008 (Provincial Government of Sihanouville and PEMSEA, 2011).

Fisheries Production (in Tons) in Sihanoukville
(1998 – 2008; Department of Fishery)



Similarly, the figure below shows the trends over time in dissolved oxygen (DO) concentrations in water quality monitoring stations in Batangas Bay (PGB and PEMSEA, 2008).



Box 6. Summarizing trend results for the SOC.

Trend results for the SOC are represented by different faces to indicate the prevailing condition of the coastal area as shown below.

Figure below shows the summary of trends with respect to the 35 core indicators evaluated in the SOC of Batangas Province (PGB and PEMSEA, 2008).

SOC Code	Indicator	Trend * (1990–2007)
001	Coastal profile/Environmental risk assessment	
002	Coastal strategy and action plans	
003	Local government development plan, including coastal and marine areas	
004	Coordinating mechanism	
005	Participation of stakeholders in the coordinating mechanism	
006	ICM enabling legislation	
007	Administration and monitoring of compliance to legislation	
008	Environmental cases filed/resolved	
009	Public education and awareness	
010	Stakeholder participation and mobilization	
011	Availability/accessibility	
012	Human resource capacity	
013	Budget for ICM	
014	Sustainable financing mechanisms	
015	Level of preparedness for disasters	
016	Degree of vulnerability to disasters	
017	Social and economic losses due to disasters	

SOC Code	Indicator	Trend * (1990–2007)
018	Habitat management plan and implementation	
019	Areal extent of habitats	
020	Protected areas for coastal habitats and heritage	
021	Reclamation and conversion	
022	Water conservation and management	
023	Access to improved water source	
024	Incidences/deaths due to waterborne diseases	
025	Fishery management plan and implementation	
026	Fisheries Production	
027	Malnutrition rate	
028	Poverty, education and employment	
029	Livelihood programs	
030	Management plans	
031	Water quality	
032	Air quality	
033	Sanitation and domestic sewerage	
034	Municipal solid waste	
035	Industrial, agricultural and hazardous wastes	

plans; strategies; budgets; technical and scientific reports; proceedings) and visits to coastal areas to confirm changes/trends in its development; and

b. Exploring possible solutions to identified data gaps with relevant stakeholders, including extending the monitoring and reporting systems to cover the required indicators under future M&E efforts.

4.2.4. Expected outputs at this stage are as follows.

a. A completed SOC template, containing available and validated data and information for the baseline year with spatial and temporal coverage as agreed to by the TWG;
b. Summary tables, figures, graphs as input to the preparation of the SOC report (see **Boxes 5 and 6**);
c. Data gaps identified; and
d. A database for recording, storing, analyzing and updating SOC data and information (see **Box 2**).

4.3 SOC Report Preparation and Dissemination

4.3.1 The TWG/ICM Coordinating Office will:

a. Analyze the validated data/information and draft the initial SOC report, in accordance with the theme and outline previously agreed on and using this Guide and examples provided by the PEMSEA Resource Facility. Data must be presented (e.g., graphs, tables) to clearly indicate trends and/or baseline information (see **Boxes 5 and 6**). The consistency and duplication of information from among the indicators must be reviewed. In analyzing and interpreting the results, it is relevant to consider how information gathered for each of the indicators is related (e.g., how results of a particular indicator under *Governance* explain results of indicators in the *Sustainable Development Aspects*). For ICM programs in place, the guide questions for the core indicators (see **Annex A**) can serve as basis in the presentation and analysis of results for the indicators. From the results of each indicator, the implications and recommendations are drawn. The Coastal Strategy Implementation Plan/Strategic Environmental Management Plan or similar coastal management and action plans, and results of stakeholder consultations are relevant references and basis for the recommendations. The State of the Coasts of Batangas Province (PGB and PEMSEA, 2008) can serve as guide in developing the SOC report of an ICM site. For sites preparing the SOC Baseline, the priority issues that need to be addressed in an ICM program must be drawn from the information gathered.
b. Organize and conduct a stakeholder workshop to review, validate and build consensus on the conclusions and recommendations of the draft SOC report (including the baseline information as appropriate);
c. Revise/refine the SOC report, including the preparation of an Executive Summary, for submission to the Local Chief Executive, legislative body, and ICM Coordinating Committee;
d. Disseminate the results of the SOC report to the general public, as indicated in the previously developed communication plan.

4.3.2 The TWG/ICM Coordinating Office will prepare a recommendation to the ICM Coordinating Committee to institutionalize the SOC reporting system for the facilitation of the continual review, evaluation and improvement of the local ICM program, in support of sustainable development of coastal and marine resources of the area.

4.3.3 At this stage, the outputs are as follows.

a. A draft SOC report;
b. A final SOC report, as submitted to the Local Chief Executive and legislative body; and
c. A recommendation for implementing and sustaining the SOC reporting system, as submitted to the local ICM Coordinating Committee.

4.4. SOC Report

The SOC report is to be prepared concisely and as informative as possible to guide Chief Executives of local governments, ICM managers and practitioners, coastal communities, and other stakeholders for evaluation, planning and decisionmaking in coastal management.

The SOC report contains the following:

a. **Acknowledgement** – Lists the individuals, organizations, institutions and those responsible in the preparation of the SOC report.
b. **Introduction** – Briefly defines integrated coastal management, the significance of the state of the coasts reporting system, the scope as well as the target audience of the report.
c. **Methodology** – Outlines the process conducted in developing the report.
d. **Summary table for the SOC core indicators** – Presents the key findings for the core indicators considered in the report.
e. **Executive Summary** – Presents the key findings for each of the *Governance* components and the *Sustainable Development Aspects*, including implications and recommendations.
f. **Study Site** – Briefly describes the site including key socioeconomic and biophysical facts.
g. **Indicators** – Defines the relevance of indicators in an ICM program and the process of determining the indicators for the report.
h. **Results of the indicators** – Presents the main results of the SOC as follows.
    i. Category, which identifies the particular governance element or sustainable development aspect in the Framework for Sustainable Development of Coastal Areas
    ii. Name of the indicator
    iii. Description of the indicator
    iv. Rationale for using the indicator in the SOC
    v. Data requirements
    vi. Results which describe the current status, changes over time, management actions and results of management interventions in the area relating to the particular indicator
    vii. Implications of results and recommendations to respond to changing conditions
    viii. References including data sources
i. **Conclusions and recommendations** – Overall analysis of results and key recommendations to further strengthen the ICM program.

5. Applications and Updating of the SOC Report

The SOC report provides inputs for the development/updating of:

a. Strategies and action plans;
b. Institutional arrangements;
c. Enabling legislations and enforcement;
d. Capacity development programs;
e. Fnancing mechanisms and environmental investments;
f. Integrated information management;
g. Environmental/ecological assessments;
h. Environmental monitoring programs;
i. Coastal use zoning; and
j. Issue- and area-specific management programs.

As a tool for M&E and reporting in ICM programs, the SOC should be updated periodically, preferably in line with the planning cycle of the local government (e.g., three to five years). The regular updating of the SOC can be facilitated by using a database management system that allows storage, updating, retrieval, and packaging of data and information in line with the requirements of the SOC (see **Box 2**).

6. References

Australian Coastal Indicators. www.ozcoasts.gov.au/indicators/index.jsp. Accessed: May 8, 2007.

Beeton, R.J.S., Buckley, K.I., Jones, G.J., Morgan, D., Reichelt, R.E., and Trewin, D. (2006 Australian State of the Environment Committee). 2006. Australia State of the Environment 2006. Independent Report to the Australian Government Minister for the Environment and Heritage, Department of the Environment and Heritage, Canberra.

Chua, T.-E.. 2006. The Dynamics of Integrated Coastal Management: Practical Applications in the Sustainable Coastal Development in East Asia. 468p. Global Environment Facility (GEF)/United Nations Development Programme (UNDP)/International Maritime Organization (IMO) Regional Programme on Building Partnerships for the Seas of East Asia (PEMSEA), Quezon City, Philippines.

Council of Scientific and Industrial Research (CSIR). 2005. Monitoring and Reporting on the State of the Coast in South Africa: A Plan of Action. CSIR Division of Water, Environment and Forestry Technology, Durban. Produced on behalf of the Department of Environmental Affairs and Tourism, Cape Town.

Department of Environment and Heritage of the Australian Government (DEH). 2004. Users' Guide for Estuarine, Coastal and Marine Indicators for Regional NRM monitoring. CRC for Coastal Zone, Estuary and Waterway Management. Australia.

Duda, A. 2002. Monitoring and Evaluation Indicators for GEF International Waters Projects. Monitoring and Evaluation Working Paper 10. Global Environment Facility. Washington, DC, USA.

Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). 2006. Proceedings of the Meeting of Experts to Discuss the Framework for the State of the Coasts Reporting for the Seas of East Asia. East Asian Seas Congress 2006, Haikou City, Hainan Province, PR China, December 15, 2006. Global Environment Facility (GEF)/United Nations Development Programme (UNDP)/ International Maritime Organization (IMO) Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines.

PEMSEA. 2007. PEMSEA: 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. 80p. GEF/ UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines.

PEMSEA. 2008. Training Manuals in Integrated Coastal Management. Partnerships in Environmental Management for the Seas of East Asia (PEMSEA). Unpublished.

Provincial Government of Batangas, Philippines (PGB) and PEMSEA. 2008. State of the Coasts of Batangas Province. Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines.

Provincial Government of Sihanoukville, Cambodia and PEMSEA. 2011. State of the Coasts of Preah Sihanouk Province. Unpublished.

The Heinz Center. www.heinzctr.org/Ecosystems.html. Accessed: May 8, 2007.

Tropical Coasts. 2007. One Vision, One People. Special East Asian Seas Congress 2006 issue, Tropical Coasts, 14(1). Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Quezon City, Philippines.

United Nations Environment Programme-Regional Resource Centre for Asia and the Pacific (UNEP-RRCAP). 2004a. Environmental indicators: Southeast Asia. UNEP-RRCAP, Thailand.

UNEP-RRCAP. 2004b. Environmental indicators: Northeast Asia. UNEP-RRCAP, Thailand.

United Nations Educational, Scientific and Cultural Organization (UNESCO). 2006. A Handbook for Measuring the Progress and Outcomes of Integrated Coastal and Ocean Management. IOC Manuals and Guides, 46; ICAM Dossier, 2. Paris, France.

United States-Environmental Protection Agency (US-EPA). National Coastal Condition Reports. water.epa.gov/type/oceb/assessmonitor/ nccr4_factsheet.cfm. Accessed: May 8, 2007.

World Bank. http://data.worldbank.org/indicator. Accessed: May 8, 2007.

Annexes

How to Use the Annexes

The Annexes contain materials that can aid in the implementation of the SOC reporting system and development of SOC reports.

a. **Annex A** contains a detailed description of the 35 core indicators that can be evaluated at the initial implementation of the SOC reporting system. It also provides the rationale of determining each of the 35 core indicators, including specific data requirements. The "guide questions" provided in Annex A aim to provide guidance in the analysis of the results for each of the indicators, and in drafting the SOC report. **Annex A** also indicates the need to document all data sources and references, including personal communications for validation purposes.

b. **Annex B** contains the SOC reporting template that can serve as guide in gathering the data required for the SOC. Together with the reporting template contained in **Annex B**, an electronic file of the template can also be provided to local governments, which can be used in filling in the data needs for the SOC. The template can be modified based on agreed coverage years for the SOC, the level of aggregation and frequency of data in a particular coastal area. The template can be regularly updated as data becomes available during the course of ICM implementation (see also **Section 3.4**).

c. **Annex C** provides a sample of accomplished SOC reporting template used in the preparation of the SOC of Batangas Province (PGB and PEMSEA, 2008).

Annex A. Detailed Description and Guide Questions for the SOC Core Indicators

A: Governance

Category	Policy, strategies and plans
[ID] Indicator Name	**[001] Coastal profile and environmental risk assessment**
Description	This indicator measures the percentage of coastline that has undergone environmental risk assessment, coastal profiling or similar scientifically-based evaluation in order to identify priority issues/threats to sustainable development of coastal and marine resources.
Rationale	Effective coastal management relies on planning that takes into account strategic and scientific assessment of the area, including social, cultural, political, economic, environmental, and policy issues, and the identification of priority concerns for coastal managers and policymakers. This strategic assessment should be the basis for developing strategies and action plans for coastal management.
Data Requirements	• Total length of coastline • Coastal environmental profile/environmental risk assessment/other similar assessments • Length of coastline covered by environmental assessment
Guide Questions	1. What is the total length of coastline of the area? 2. Has coastal environmental profiling/environmental risk assessment/other similar assessments been conducted? Specify name and year of assessments, responsible organization, scope and geographic coverage of the assessment. OR 3. Has a document containing relevant site information (physiographic, biological, demographic, socioeconomic, institutional, pollution sources, etc.) been prepared and made available to stakeholders? Who conducted the baseline data gathering and what information were gathered?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Policy, strategies and plans**
[ID] Indicator Name	**[002] Coastal strategy and action plans**
Description	This indicator measures the scope, coverage and objectives of coastal management, as delineated in coastal strategies and action plans. The indicator further looks into the specific roles and responsibilities for different stakeholders, proposed interventions to address existing or potential threats to sustainable development, including economic, biophysical and social aspects with specified targets and timeframes. Finally, the indicator determines the government's commitment to implement the coastal strategy or action plan through its adoption at the provincial/city/municipal level.
Rationale	A coastal strategy is a critical component of ICM, providing a framework for integrated planning and management. It not only serves as a platform for policy reform that promotes good governance, but facilitates interagency consultation, multisector cooperation and stakeholder participation. A coastal strategy identifies conflicts arising from multiple use of limited marine and coastal resources, establishes approaches and actions for protecting or enhancing environmental quality and biodiversity, while facilitating environment-friendly economic development and environmental investment opportunities. The strategy will not be useful if it is not adopted and translated into on-the-ground actions. Action plans define: (a) the steps that are required in order to execute the strategies; (b) the milestones or indicators that can be used to measure progress and changes; (c) the timeframe for the actions; (d) the roles of the various stakeholders; and (e) the measures for monitoring the implementation of the strategy.

Data Requirements	• Coastal strategy and action plans • Management boundary (geographic) of the Plan • Operational management plans • Multisectoral participation mechanisms • Local government commitments to implementation • Monitoring and evaluation program
Guide Questions	1. Has a coastal strategy or coastal management plan, and action plans been developed through appropriate stakeholder consultation? Specify name, year, scope and geographic coverage of the Plan. 2. Has the Plan been adopted by the local government? Briefly describe the adoption of the Plan (e.g., through legislation or ordinance). 3. Is there a mechanism for monitoring and evaluation (M&E) of the Plan? How is the progress in implementing the Plan monitored? Briefly describe process of M&E (e.g., frequency, used as basis for updating and refining Plan)
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Policy, strategies and plans**
[ID] Indicator Name	**[003] Local government development plan, including coastal and marine area**
Description	This indicator reviews the local government units that have integrated coastal management issues and sustainable development of coastal and marine resources into their multi-year development plans.
Rationale	To determine an understanding of their commitment to coastal management, the development plans of local government units can be evaluated to ascertain whether the sustainable use of coasts and near coastal sea areas and the associated resources have been recognized for their value and the role they play in the development process. The integration of ICM into the development plans of local government units reflects a local commitment to ensure the protection and development of coastal and marine areas in the broader context of the coastal development strategy/SEMP, through a more integrated economic, social and environmental policy and planning approach.
Data Requirements	• Local Development Plans
Guide Questions	1. Do development plans of the local government integrate coastal and marine management? Specify programs for marine and coastal management identified in the local development plans. 2. Has the coastal strategy or coastal management action plans been integrated into local development/investment plans? OR 3. Are local development/investment plans aligned with the coastal strategy and action plans?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.

Category	Institutional arrangements
[ID] Indicator Name	**[004] Coordinating mechanism**
Description	This indicator considers the presence of a functional interagency and multisectoral coordinating mechanism that oversees the development and implementation of the ICM program. The indicator further looks into the institutionalization of a local office with adequate administrative resources – staff, budget and equipment, to oversee, guide and coordinate the implementation of coastal strategies and action plans.
Rationale	A fully functional coordinating body consisting of the government agencies, nongovernment entities, private sector, civil society and other stakeholders, as appropriate, is a key component of ICM programs. The purpose of the coordinating mechanism is to harmonize any overlapping responsibilities of line agencies and stakeholder interests, as well as to integrate policy and management interventions. Moreover, the availability and allocation of adequate administrative resources for ICM is an expression of the capacity of the ICM management team to administer, coordinate and implement activities over time. In the implementation of ICM, there is a need for a local office to serve as a clearing house, central coordinating agency and focal point for multisectoral activities.
Data Requirements	• Coordinating mechanism established and legal basis • Organizational structure of the coordinating mechanism • Coordinating office established and legal basis • Organizational structure of the coordinating office • Staff and budget allocation of the coordinating office
Guide Questions	Briefly describe the following items. 1. Is there a mechanism for interagency and multisectoral coordination and harmonization that addresses coastal management issues? Is this mechanism institutionalized through legislation and with regular budgetary allocation to sustain its operation? 2. Does the body regularly meet and discuss implementation of coastal management plans? How frequently? Are records/proceedings of the meetings prepared and disseminated? 3. Has an office been established locally, which serves as a clearing-house, central coordinating agency and focal point for multisectoral activities related to ICM development and implementation? How many staff are assigned to the office and what is its budgetary allocation for ICM development and implementation?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Institutional arrangements**
[ID] Indicator Name	**[005] Participation of stakeholders in the coordinating mechanism**
Description	This indicator reports the pertinent sectors (government, nongovernment, private, civil society, academe) that are represented in the coordinating mechanism for the ICM program and are part of an integrated decision-making process. It further reflects the commitment of government agencies and other stakeholders to implement, comply with and enforce ICM plans and activities. It also suggests the reality of the execution and performance of ICM initiatives, as well as the degree of acceptance on the part of users subject to the plan.
Rationale	Stakeholder participation is the key to coastal management. The ICM coordinating mechanism provides stakeholders (government and nongovernment) with access to decision making processes and activities. It provides concerned parties with the satisfaction that their views and concerns are taken into account in the planning and decision making process. The concerned sectors include those that exploit and use the natural resources for profit, communities that traditionally use natural resources for their food and livelihood, and the public sectors (local and central) that govern and manage the resources.

	Likewise, in order to achieve the targets of sustainable use and development of the oceans and coasts, the commitment of national agencies, local governments and concerned nongovernment stakeholders is essential. Thus, their respective programs, projects and activities should be aligned with the action plans, programs and policies identified in the coastal management plans.
Data Requirements	• Representation of stakeholders in the coordinating mechanism • Staff and budget allocation of agencies in the coordinating mechanism
Guide Questions	1. Are all the relevant organizations and stakeholders represented in the coordinating mechanism? 2. What are the commitments of the members of the coordinating mechanism and other primary stakeholders, in terms of personnel and budget allocations, and the integration of coastal management into their respective work programs? 3. Is there an existing process in place to monitor, evaluate and consolidate the activities of stakeholders in relation to the implementation of their respective coastal management plans? Who is responsible for implementing the monitoring and evaluation process, and who receives the output/report?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Legislation**
[ID] Indicator Name	**[006] ICM enabling legislation**
Description	This indicator describes the existence and adequacy of legislation enabling the implementation of ICM interventions.
Rationale	The existence, adequacy and effectiveness of legislation are important in order to determine if the goals and objectives of coastal management are supported by a clear and enforceable legal basis. Legislation defines what is required, permitted and prohibited in the coastal and marine area. Awareness and understanding of coastal management legislation promotes compliance and therefore achievement of coastal management goals and objectives.
Data Requirements	• Legislations/local ordinances regarding ICM institutional mechanism and management activities • Coastal use zoning • Fisheries, mining and other extraction activities • Pollution-related activities • Building structures in the coastal environment, including aquaculture structures • Access to rules and regulations
Guide Questions	1. Have any ICM-related policies been adopted and implemented by the local government? What are they? 2. What are the local laws that support ICM implementation (e.g., coastal use zoning, regulation of fisheries, aquaculture, mining and other extraction activities, pollution reduction and waste management, etc.)? Please specify whether the identified laws have been enacted at the provincial or municipal level, as well as the date. 3. How are rules and regulations disseminated and accessed by local people?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.

Category	Legislation
[ID] Indicator Name	**[007] Administration and monitoring of compliance to legislation**
Description	This indicator reports the various types and frequency of inspections conducted in the area to determine compliance with coastal policies and legislation. It further looks into the effectiveness of enforcement of legislation.
Rationale	The available capacity within government to enforce laws and ensure compliance with coastal policy and regulations is paramount to successful implementation of ICM programs. The effective management of illegal and uncontrolled activities taking place along the coast and in coastal waters is an important step in addressing and minimizing unsustainable practices.
Data Requirements	• Types of environmental compliance monitoring/inspection (i.e., market inspections for fishery violations; aquaculture; manufacturing, coastal polluting and coastal tourism establishments, ports and water transportation) • Frequency of environmental compliance monitoring/inspection including coastal patrols
Guide Questions	1. What is the nature and extent of environmental compliance monitoring/inspection and enforcement being undertaken by the local government (i.e., market inspections for fishery violations; aquaculture; manufacturing, coastal polluting and coastal tourism establishments, ports and water transportation, coastal patrols), including areas covered, number and frequency of inspections, and who conducts the inspections? 2. How are economic activities regulated and monitored (e.g., issuance of permits)? Please indicate the number of permits issued. 3. Are there any changes in compliance monitoring activities (e.g., more frequent; more systematic)? Are there increasing demands for compliance monitoring as a consequence of economic activities? How have these demands been met?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Legislation**
[ID] Indicator Name	**[008] Environmental cases filed/resolved**
Description	This indicator reports the total number of cases filed and resolved, and the total value of fines issued for non-compliance of relevant coastal legislations.
Rationale	Effective enforcement of environmental legislation taking place in the marine and coastal areas can be reflected by the number of cases filed, resolved and fines collected resulting thereof. The strict enforcement of relevant legislation is an important step in addressing and minimizing unsustainable practices in the coastal areas.
Data Requirements	• Total number of reported complaints • Total number of violations where violators were arrested • Total number of violations penalized • Total value of fines collected for non-compliance with relevant legislations
Guide Questions	1. Does the local government record the number of: reported environmental complaints; environmental cases filed; and environmental cases resolved over time? What are the current trends in these three areas? 2. What proportions of environmental cases were resolved? 3. What were the penalties/fines issued, including violators arrested? 4. What is the level of commitment to enforcement (e.g., human; financial) for relevant laws?

	5. What is the mechanism for monitoring progress from filing of environmental cases in court to its final resolution?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Information and public awareness**
[ID] Indicator Name	**[009] Public education and awareness**
Description	This indicator reports on communication plans, staff and budget allocations, and public awareness programs initiated by various sectors, and the different communication channels used to promote public awareness.
Rationale	Easy access to information can promote awareness of stakeholders. Public education promotes increased awareness of the value of the coastal and marine resources, the issues affecting the environment, and the need for coastal management to protect and conserve these resources.
Data Requirements	• Communication plan available • Budget and staff allocation for implementation of communication plan • Local governments have facilities for public access of information • Local awareness programs • Frequency of community participation activity • Number of participants in community participation activity
Guide Questions	1. Has communication plan been formulated? What are the major issues covered in the plan? 2. How is the implementation of the communication plan ensured? Describe local government's staff and budget allocation for the implementation of the plan. 3. Is information on coastal management available and accessible? 4. What are the principal local awareness building programs? Describe briefly their scope, frequency, target audiences and levels of participation (i.e., number of participants). 5. Are there any regular community participation activities being conducted? Please describe them briefly including changes that have occurred as a consequence of such activities and the number of participants participating in the activity through time.
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Information and public awareness**
[ID] Indicator Name	**[010] Stakeholder participation and mobilization**
Description	This indicator reports the number of nongovernment organizations, civil society groups and other stakeholders' organizations who are contributors to sustainable development of the coastal and marine area.
Rationale	The active involvement of stakeholders reflects their understanding on the value of implementing coastal management and mobilizing activities related to it.
Data Requirements	• Nongovernmental organizations, civil society groups and other stakeholders' organizations with environment related programs and activities • Types of environment-related programs and activities • Number of members

Guide Question	1. Identify nongovernment, civil society and other stakeholders' organizations in the area that have environmental related programs and activities, including number of members and types of programs and activities.
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Capacity development**
[ID] Indicator Name	**[011] Availability/Accessibility**
Description	This indicator reports access to facilities and training programs, staff and budget allocation, and technical resources available for coastal management. It also measures the extent to which local personnel can impart their knowledge and experiences in coastal management as well as the presence of universities, research institutions and local experts in the area.
Rationale	Building local capacity to plan and manage their own resources is essential in ICM programs. Similarly, access to facilities and training programs, and budget allocation are essential in building local capacity. Local capacity is also enhanced by the availability of institutions such as universities, research institutions and local experts, which can be tapped in implementing coastal management activities and training and education programs. Local personnel with the appropriate skills must be able to impart their knowledge and experiences in coastal management to other coastal and natural resource managers.
Data Requirements	• Access to facilities and training programs • Staff and budget allocation for capacity development • List of experts • Universities and research institutions in the area with related courses/research activities • Local capacity to conduct trainings
Guide Questions	1. Do local personnel have access to facilities and training programs to strengthen local capacity for ocean and coastal management? What are they? 2. What has been the staff and budgetary commitment to the ICM program over time? 3. What has been the budgetary allocation for capacity development over time? 4. Has a roster of experts been developed? How has the roster of experts been employed? 5. Which universities and research institutions in the area are providing ICM-related courses or research activities? 6. Are there any local capacities to conduct ICM trainings?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Capacity development**
[ID] Indicator Name	**[012] Human resource capacity**
Description	This indicator measures the local capacity in implementing coastal management in terms of skilled human resources.
Rationale	The knowledge and skills of local personnel is essential for effective implementation of coastal management.
Data Requirements	• Number of people trained in ICM • Number of skilled personnel working in ICM programs • Number of graduates in ICM-related courses • Number of required ICM trained people

Guide Questions	1. How many people have been trained in ICM and how many of the trained individuals are working in ICM? 2. How many personnel working in the ICM program are graduates of ICM-related courses (natural and social sciences, economics, etc.)? 3. Is there a need for ICM training? How many government and nongovernment personnel require ICM training? 4. Is there a mechanism to track if those trained are applying the new acquired skills, and to determine who needs and what level of training is required? What is it? 5. Are there other capacity development needs related to the ICM program development and implementation? What are they?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Financing mechanisms**
[ID] Indicator Name	**[013] Budget for integrated coastal management**
Description	This indicator reports the financial requirements for coastal management and the government allocation including investments for environmental infrastructures. It also looks into the financial sources for coastal management, such as loans, and grants from financing institutions and donors.
Rationale	The activities for coastal management have specific budgetary requirements and thus need financial allocation for their implementation.
Data Requirements	• Total budget identified for coastal management • Total budget allocated by LGU • Total expenditure for coastal management • Grants and loans from external sources • Investments in environmental infrastructure
Guide Questions	1. What has been the annual budget for ICM implementation over time? 2. Is there a financing system supporting the continued implementation of the ICM program? What is it? 3. Is there a system for tracking and reviewing budget allocations and expenditures on an annual basis for ICM and related activities? What is it? 4. Are there any past and existing grants or loans from external sources for ICM and related activities? What are they? 5. Has the local government invested in environmental infrastructure? What was the investment, and how were the funds raised?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Financing mechanisms**
[ID] Indicator Name	**[014] Sustainable financing mechanisms**
Description	This indicator takes account of the institutionalization of measures and means to support environmental conservation and environmental infrastructure improvements. Economic and market-based instruments, such as public-private partnerships, environmental user fees, user pay schemes, and corporate social responsibility (CSR) programs are among the tools being considered. The indicator also considers policies and programs put in place to enhance the climate for public and private sector financing of coastal management activities and for constructing and operating environmental infrastructure.

Rationale	Financial support for coastal management implementation may come from different sources. The sustainability of ICM programs is dependent on how revenue sources are developed and managed. Transparency in all financial transactions is necessary to avoid suspicion from stakeholders. Apart from regular allocation from the government, various financing options must be explored to sustain financial inputs for coastal management activities and environmental infrastructure and service.
Data Requirements	• Corporate social responsibility • Private sector financing (e.g., PPP) • Environmental user fees • Percentage of environment user fees allocated to environment projects • Private sector investment for environmental infrastructure • Standard procurement process in place (e.g., defined ceilings for bidding, canvassing, and shopping) • Provincial/city/municipality authorized to engaged in public-private partnership
Guide Questions	1. What financing instruments are being implemented by the local government in support of environmental programs, such as polluter pays, environment user fees, public-private partnerships, etc.? Please indicate the amount of revenue generated through the different instruments. 2. If there are existing environment user fees, what proportion of the collection is allocated for environmental projects? How has this changed over time? 3. Is the local government authorized to engage in public-private partnerships (PPP)? What (if any) are the past and current PPP transactions? 4. What is the procurement process of the local government for environmental infrastructure?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.

B: Sustainable Development Aspects

Category	**Natural and man-made hazard prevention and management**
[ID] Indicator Name	**[015] Level of preparedness for disasters**
Description	This indicator measures the availability of disaster preparedness and management plans, capable people, equipment, budget and preparations to anticipate, reduce, respond to, and recover from various hazards/disasters.
Rationale	Local communities and disaster management personnel must be prepared to respond to various hazards, if the number of deaths and property losses due to natural and man-made hazards are to be minimized. Moreover, proper preparation and mitigation measures can reduce the frequency (of man-made disasters) and severity of disasters.
Data Requirements	• Availability of natural/man-made disaster/environmental emergency response plan • Scope of natural/man-made disaster/environmental emergency response plan (e.g., floods, earthquakes, oil spill, etc.) • Identification of mitigation strategies • Institutional mechanism for the implementation of the emergency response plan • Number of trained and non-trained personnel allocated • Early warning system in place • Availability of adequate equipment • Budget allocation for natural/man-made disaster
Guide Questions	1. Has a natural/man-made disaster/environmental emergency response plan(s) been prepared for the area. What is the scope of the response plan(s), including description of the institutional mechanism(s) for implementation? 2. Has the local government developed a mitigation strategy to reduce the risk(s) associated with identified hazards? 3. How many trained and non-trained personnel are allocated for the implementation of the disaster response plan(s)? 4. What equipment is available for implementation of the disaster response plan(s) and is the equipment fully compliant with the plan(s)? 5. What is the annual budget allocation for operations relating to natural/man-made disaster prevention? What changes (increase/decrease) have occurred in the financial allocation over time? 6. Is there any early warning system in place? What is it, including year of its establishment and coverage?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Natural and man-made hazard prevention and management**
[ID] Indicator Name	**[016] Degree of vulnerability to disasters**
Description	This indicator measures the degree to which populations are at risk of exposure to natural and man-made hazards; that is, populations living within various multi-hazard zones.
Rationale	The greater the degree of potential exposure to natural and man-made hazards, the more that government and local communities should be prepared and must put in place mitigation measures for disasters. Identification of the levels of threat from various hazards can also help focus preparations on the most relevant types of threat.

Data Requirements	• Availability of multi-hazard (landslides, storms, floods, etc.) map • Number of people located in hazard prone areas • Number of people relocated or moved away from hazard prone areas
Guide Questions	1. Are there any hazard maps or environmental sensitivity maps developed for the area indicating potential disaster risks (natural and man-made)? Briefly describe who prepared the maps, year of preparation and coverage. Are these maps considered in the preparation of the emergency response plan? 2. How many people are living within the disaster risks zones? How many have been permanently relocated away from the hazard zones? 3. Is there any mechanism for the local government to permanently relocate those living in hazard zones? What is it?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Natural and man-made hazard prevention and management**
[ID] Indicator Name	**[017] Social and economic losses due to disasters**
Description	This indicator measures the population affected, deaths and economic losses due to each type of disaster (including the severity of the cause of disaster). It is a measure that integrates: (a) the level and location of hazards vis-à-vis populations and (b) the level of preparedness and response mechanisms that result in the frequency and severity of actual disasters.
Rationale	Disasters set back development and especially impacts those least developed. The number of deaths, people and property affected are what hazard prevention and management ultimately aims to reduce.
Data Requirements	• Frequency of disaster incidents by type • Number of people severely affected by natural/ man-made disaster incidents • Number of people that have died due to natural/man-made disaster incidents • Total amount of economic losses due to natural/man-made disaster incidents
Guide Questions	1. What changes/trends have occurred in the area, relative to the frequency and extent of disaster incidents by type (e.g., typhoons, floods, earthquakes, oil spill, harmful algal blooms, etc.), the number of people affected/died, and amount of economic losses due to natural/man-made disaster incidents?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Habitat protection, restoration and management**
[ID] Indicator Name	**[018] Habitat management plan and implementation**
Description	This indicator measures the availability of plans, people, and budget to manage coastal habitats and heritage.
Rationale	Coastal habitats serve as critical life-support systems for a multitude of aquatic living resources. The quality of these habitats must be maintained and improved to sustain their benefits. Local governments need to identify specific strategies and action plans for habitats and the means to implement these action plans indicate the degree to which habitats will be effectively managed.
Data Requirements	• Availability of habitat management plan • Staff and budget allocation for habitat management

Guide Questions	1. Has a coastal habitat management plan been developed? When? What are its main features and scope, including the agency/ies responsible for implementation? 2. What is the local government's allocation of human (number of staff) and financial resources for habitat management, over time?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Habitat protection, restoration and management**
[ID] Indicator Name	**[019] Areal extent of habitats**
Description	This indicator measures the area of various natural habitats (coral reefs, seagrass beds, mangrove forests, beaches, forests, urban green areas).
Rationale	Natural habitats and associated species help sustain products and services that support and benefit human activities. The extent and condition of various habitats also indicate the populations of associated species.
Data Requirement	• Total area (km^2) of coastal habitats [coral reef, seagrass, mangrove, natural beach, forest (excluding mangroves), and urban "green" area]
Guide Question	1. Are there any significant changes in the area of natural habitats (coral reefs, seagrass beds, mangrove forests, beaches, forests, urban green areas) over time? What changes/trends have occurred in terms of area coverage and quality of habitats?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Habitat protection, restoration and management**
[ID] Indicator Name	**[020] Protected areas for coastal habitats and heritage**
Description	This indicator measures the area of coastal habitats and heritage effectively protected from degradation, as well as the extent of rehabilitation.
Rationale	The protection of coastal habitats and heritage reflects the commitment of local governments to prevent habitat loss and degradation. The protection of these habitats helps sustain the environmental, social and economic benefits derived from them.
Data Requirements	• Number and area of terrestrial, marine and coastal heritage areas protected by law • Management effectiveness rating of terrestrial, marine and coastal heritage protected areas • Natural areas rehabilitated (km^2)
Guide Questions	1. Has there been an increase in efforts to protect coastal habitats, resources, and heritage (e.g., establishment of protected areas)? What are the changes, in terms of number and areal extent of established/proclaimed protected areas? 2. Is there a mechanism to assess the effectiveness/benefits derived from protected areas? What are the principal results? 3. What is the extent of efforts to rehabilitate natural areas? Have efforts been made to monitor and evaluate ecological improvements/trends in these areas? What are the main results?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.

Category	Habitat protection, restoration and management
[ID] Indicator Name	**[021] Reclamation and conversion**
Description	This indicator measures the area of coastal habitat that has been converted for other uses (e.g., mangrove to fishpond). This also includes the extent of reclamation in the coastal areas.
Rationale	The costs (limited access for some sectors, stability and safety of those using structures built on reclaimed land, destruction of mangrove nursery grounds of marine life, loss of fisheries fry gathering grounds, erosion, etc.), benefits (ports that would benefit society, etc.) and the sectors that would be affected should be considered before reclamation or land conversion is authorized.
Data Requirements	• Total length of coastline and area reclaimed • Total coastal area converted to other uses (e.g. mangrove to fishpond)
Guide Questions	1. Are there any significant changes in the area covered by mangroves, corals, seagrass, etc. resulting from reclamation and conversion activities? What are they? 2. Is coastal reclamation/conversion activities covered by existing laws? 3. How effective are the laws in controlling/reducing illegal activities in the coastal area? Is the mechanism sufficient or effectively implemented?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Water use and supply management**
[ID] Indicator Name	**[022] Water conservation and management**
Description	This indicator measures the demand of the population for freshwater and accounts the intensity of freshwater management efforts through availability of water management and conservation plans, strategies adopted, and staff and budget allocated.
Rationale	Freshwater is essential for life and effective management for its sustainable use is of utmost importance for a healthy community
Data Requirements	• Availability of water management and conservation plan • Mitigation and adaptation strategies identified • Water use per capita • Staff and budget for water management
Guide Questions	1. Has an assessment of freshwater sources been conducted? What is the projected level of availability over time? How are demands changing over time? 2. Has a water management and conservation plan been developed? What is the scope of the plan? What is the implementing mechanism for the plan? What are the staff and budget allocations for water management in the local government? 3. What is the local government's strategy/ies in terms of water management and conservation?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.

Category	**Water use and supply management**
[ID] Indicator Name	**[023] Access to improved water source**
Description	This indicator estimates the population with access to an improved water source, the amount delivered and the price paid by households for water supply.
Rationale	Freshwater resources whether scarce or abundant may not necessarily be accessible or equitably accessible. Difficulty of access including high prices disproportionately burdens those with less resources especially more vulnerable individuals and households within communities.
Data Requirements	• Population using improved water sources • Volume produced from piped water sources • Water pricing per cubic meter
Guide Questions	1. Are there any significant changes in the number of people having access to improved water sources? What are the changes? 2. How much water is produced from piped water sources? What is the extent to which piped water sources can meet the demand from the community in the future? 3. What are the strategy/ies and program/s for ensuring access to safe potable water to the community, including the poor?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Water use and supply management**
[ID] Indicator Name	**[024] Incidences/deaths due to waterborne diseases**
Description	This indicator measures the number of reported cases and number of deaths due to diarrhea and other waterborne diseases.
Rationale	While other factors (such as food handling practices, etc.) may affect these figures, the prevalence of diarrhea and waterborne diseases also indicate the level of sanitation services and the cleanliness of freshwater supplies and of bodies of water for recreation.
Data Requirement	• Number of incidences of illness/infections and deaths due to waterborne diseases (e.g., diarrhea; typhoid fever; cholera; amoebiasis; schistosomiasis; giardiasis; etc.)
Guide Question	1. What are the current morbidity/mortality statistics related to waterborne disease? What are the trends/changes?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Food security and livelihood management**
[ID] Indicator Name	**[025] Fishery management plan and implementation**
Description	This indicator estimates the extent of fisheries management efforts through availability of fisheries management plans, staff and budget allocated.

Rationale	Fish is a direct product of the coastal zone, providing both food and livelihoods to coastal dwellers, and to consumers far from the coast. Fisheries management is a challenging but necessary aspect of managing marine and coastal resources in order to ensure the sustainability of this valuable natural asset. A management strategy, being supported by adequate resources and equipment, are markers of local government to managing this resource.
Data Requirements	• Fisheries Management Plan • Staff and budget allocation for fishery management
Guide Questions	1. Has a fisheries management plan been developed? When? What is the scope of the plan and the agency/ies responsible for its implementation? 2. What is the resource commitment (i.e., personnel and budget allocation) for fisheries management?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Food security and livelihood management**
[ID] Indicator Name	**[026] Fisheries Production**
Description	This indicator measures the trend in fisheries production and tries to estimate whether fisheries stocks are sustainable (using changes in catch composition and/or the frequencies of various sizes per species).
Rationale	The increasing fish catch would mean either greater dependence of the population to fisheries' resources or improved condition of resources.
Data Requirements	• Municipal (small-scale), commercial (large-scale) and aquaculture fishery production • Size and composition of fish catch
Guide Questions	1. Are there any significant changes in terms of fisheries (municipal, commercial, aquaculture) production over time? What are they? 2. Are there any changes in terms of sizes and composition of fish catch over time? What are they?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Food security and livelihood management**
[ID] Indicator Name	**[027] Malnutrition rate**
Description	This indicator measures the proportion of population with access to sufficient daily dietary requirements.
Rationale	Nutrition status is an indicator that integrates availability and equitability of access to food and livelihood. While other factors (such as agriculture and trade) may affect these figures, nutrition status is also affected by the availability of seafood.
Data Requirements	• Number of undernourished males (all ages) • Number of undernourished females (all ages) • Number of undernourished males (less than 5 years old) • Number of undernourished females (less than 5 years old)
Guide Questions	1. What is the current level of malnutrition among children (below 5 yrs old), as well as the general population? What are the trends over time? 2. Are there differences between the male and female populations in terms of malnutrition rates? What are the trends over time?

Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Food security and livelihood management**
[ID] Indicator Name	**[028] Poverty, education and employment**
Description	This indicator estimates the degree of poverty, education and the potential for employment
Rationale	The degree of poverty reflects an area's degree of social development. Productive employment is a foundational element needed to provide households with goods and services in their struggle against poverty, while education is a key to productive employment.
Data Requirements	• Poverty threshold • Poverty incidence • Income per capita (male/female) • Total employment (male/female) • Education; proportion of population (male/female; primary/secondary/tertiary)
Guide Questions	1. Has there been a change in the number of impoverished individuals/families in the area? What are the trends over time? 2. Has there been a change in the employment rate in the area? What are the trends over time? 3. Has there been a change in the proportion of population attending primary, secondary and tertiary schools? What are the trends over time?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Food security and livelihood management**
[ID] Indicator Name	**[029] Livelihood programs**
Description	This indicator measures the availability of programs, people, and budget to help enhance coastal livelihoods. It also looks into the sectors benefited and the impacts of these livelihood programs.
Rationale	Livelihood programs help optimize productivity of coastal areas and help households maximize their potential for income.
Data Requirements	• Existing livelihood programs • Staff and budget allocation for livelihood programs • Accessibility and budgets • Sectors covered • Impacts of livelihood programs
Guide Questions	1. What livelihood programs are available and accessible in the area? Which organizations are implementing livelihood programs and which sectors of the community benefit from these programs? 2. What impacts have occurred/been felt by the concerned sectors as a consequence of livelihood programs? 3. What is the local government's allocation of staff and budget for livelihood programs? What are the trends over time?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.

Category	Pollution and waste management
[ID] Indicator Name	**[030] Pollution management plans**
Description	This indicator accounts the presence of specific policies, plans and programs for pollution reduction and waste management. It further looks into the commitment of local government to implement the plans through allocation of human and financial resources.
Rationale	Specific strategies and action plans are essential to address issues on pollution and waste management. These action plans must be implemented through the commitment of facilities and equipment, as well as financial and human resources.
Data Requirements	• Availability of pollution management plans and their scope (water, air, land) • Monitoring programs • Budget for pollution and waste management • Staff allocation for pollution and waste management • Adequacy of equipment/facilities
Guide Questions	1. Has/have a pollution reduction/waste management plan(s) been developed and adopted? When? What is/are the scope of the plan(s), and the agencies responsible for the implementation? 2. Has an environment monitoring program been established? When? What is its coverage (i.e., geographic areas, media, and parameters)? How is the monitoring data recorded, analyzed and disseminated? 3. What facilities and equipment are available for pollution reduction and waste management? 4. What is the local government's resource commitment (i.e., personnel; budget) to pollution reduction and waste management?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Pollution and waste management**
[ID] Indicator Name	**[031] Water Quality**
Description	This indicator measures the level to which coastal waters and river waters that discharge into the coastal area are within the water quality standards prescribed for the specific water use (e.g., drinking, swimming, boating, fishing, aquaculture, etc.).
Rationale	Criteria and standards for water quality are based on scientific information related to water use and potential risks to human health (e.g., transmit waterborne diseases), productivity (e.g., decrease fisheries productivity) and/or the ecosystem health (e.g., destruction and degradation of habitats). Different parameters provide indications of ecosystem health and potential threats to water use.
Data Requirements	**Priority parameters (temporal/spatial)** • Water transparency (secchi depth/total suspended solids) (marine/river/beach) • Dissolved oxygen (DO) concentrations (marine/river/beach) • Total/fecal coliform counts (marine/river/beach)
	Secondary parameters (temporal/spatial) • Chlorophyll concentrations (marine/river/beach) • Nutrient (nitrates, phosphates) concentrations (marine/river/beach) • Biochemical oxygen demand (BOD) concentrations (marine/river/beach) • Groundwater quality (nitrates and heavy metals)

Guide Questions	1. What changes are occurring in water quality in terms of the priority (TSS, DO, coliform) and secondary (BOD, nutrients, chlorophyll) parameters. What are the trends over time? 2. What are the water quality standards/criteria for the area and different uses? Are these standards/criteria being met? What are the trends over time?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Pollution and waste management**
[ID] Indicator Name	**[032] Air quality**
Description	This indicator reports on the quality of air in terms of total suspended particulates, sulfur oxide, nitrogen oxide, carbon monoxide and volatile organic carbon
Rationale	Air pollution is harmful to human health and the quality of the environment. Air quality can be measured through different parameters which can serve as basis for management interventions.
Data Requirements	• Total suspended particulates (TSP) • Other air pollutants (particulate matter, sulfur oxide, nitrogen oxide, carbon monoxide, volatile organic carbon)
Guide Questions	1. What changes are occurring in the levels of total suspended particulates (TSP) and other air pollutants? What are the trends over time? 2. What are the air quality standards/criteria for the area and different uses? Are these standards/criteria being met? What are the trends over time?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Pollution and waste management**
[ID] Indicator Name	**[033] Sanitation and domestic sewerage**
Description	This indicator reports the proportion of population with access to sanitation and sewerage systems.
Rationale	The lack of sanitation facilities can affect human well-being and have negative impact on the quality of the environment especially when disposed untreated to the coastal and marine environment. Moreover, data on access to sanitation also monitors progress in meeting one of the Millennium Development Goals (MDG) targets for environmental sustainability.
Data Requirements	• Population with access to improved sanitation • Households connected to septic tanks • Volume of septage collected/treated • Population served by public sewerage system (collection) • Location of sewage treatment plants and discharge pipes • Level of treatment and volume of sewage treated • Volume of domestic wastewater generated, treated, recycled or reused
Guide Questions	1. What changes are occurring in the proportion of population having access to improved sanitation? What are the trends over time? 2. What is the proportion of households connected to septic tanks? What is the volume and proportion of septage collected and treated?

	3. Is there an existing sewerage system/sewage treatment plant in the area? What is the proportion of population being served by the sewerage system? 4. Where is/are the sewage treatment plant(s) located? What are the treatment technology, the volume of sewage treated, and the design capacity/ies of the plant/s? How is the treated waste disposed? Where is the treated waste disposed? 5. What proportion of treated domestic wastewater is recycled or reused?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Pollution and waste management**
[ID] Indicator Name	**[034] Municipal solid waste**
Description	This indicator measures the tonnage of solid waste generated, the proportion being recycled or reused and amount received in dumpsites or sanitary landfills.
Rationale	Uncontrolled waste handling and disposal impact negatively on human and ecological health as well as the aesthetic and recreational values of coastal areas.
Data Requirements	• Volume of solid waste generated • Volume of solid waste received in landfills/dumpsites • Volume of solid waste received at recycling facilities
Guide Questions	1. What changes have occurred in the number of dumpsites, landfills and recycling facilities in the area? What are the trends over time? 2. What trends are occurring in the volume of solid waste generated, received in landfills/dumpsites, and sent to recycling facilities?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.
Category	**Pollution and waste management**
[ID] Indicator Name	**[035] Industrial, agricultural and hazardous waste**
Description	This indicator measures the quantity of hazardous and toxic wastes being generated and properly managed within the local government's jurisdiction.
Rationale	Agricultural, commercial, institutional and industrial sectors generate income and employment but they also generate wastes that may affect human health and livelihoods in communities. Hazardous and toxic wastes (e.g., oily waste, pesticide residues; cleaning compounds; hospital wastes; etc.) are by-products of various goods, services, processes and systems that customers/citizens demand. The proper management of these wastes is a major challenge to local governments and to sustainable development.
Data Requirement	• Volume of hazardous and toxic waste generated, handled, treated and disposed
Guide Questions	1. What trends are occurring with regard to the quantities of industrial, agricultural, and toxic hazardous waste being generated in the area? 2. What proportion of these wastes are handled, treated and disposed in accordance with local and/or national laws? What are the trends over time?
Data Sources	List all data sources, references used for each indicator including names of persons and organizations where data/information was achieved.

Annex B. SOC Reporting Template

Part I: General Information

Information relevant to the country/site

(Please provide map of the area showing the watershed area, administrative boundaries and other relevant information.)

Information	Local[1]				
Area					
Total	km^2				
Land	km^2				
Water (Inland)	km^2				
Watershed					
Coastline	km^2				
Territorial sea (up to 12 nm)	km				
Exclusive Economic Zone (200 nm)	km^2				
Continental shelf (up to 200 m depth)	km^2				
Coastal waters	km^2				
Oceanic waters	km^2				
Major rivers					
Catchment basins					
Number of islands					
	1990	1995	2000	2005	2007
Demographic					
Population					
Population growth rate					
Coastal population					
Coastal population density					
Ethnic groups (please indicate major groups)					
Religions (please indicate major religions)					
Administrative Divisions:					
Provinces					
Cities					
Coastal municipalities					
Economic indicators					
GDP					
GDP per capita					
Contribution of the site to national GDP by sector:					
Agriculture, Fisheries and Forestry					
Industry (Manufacturing and Mining)					
Services (Trade and Finance)					
Other sectors (please specify)					
Number of manufacturing establishments (by size)					
Small					
Medium					
Big					
Number of manufacturing establishments (by type;					
please specify by types of activity)					
Number of tourists arrivals in the area					
Ports and harbors (please list major ports and harbors)					
Merchant marine (Number of ships by size or tonnage)					
Pipelines:					
Pipelines:					
Petroleum products					
Natural gas					

National[2]					Targets[3]			Remarks
					Local[4]	National[5]	MDG[6]	
		km^2						
		km^2						
		km^2						
		km^2						
		km						
		km^2						
		km^2						
		km^2						
		km^2						
1990	1995	2000	2005	2007				

Information	Local[1]				
	1990	1995	2000	2005	2007
Employment					
Labor force					
Labor Force Participation Rate					
Employment Rate					
Unemployment Rate					
Underemployment Rate					
Sectoral employment					
Agriculture, fishery and forestry					
Community and social services					
Banking and finance					
Transportation and storages					
Wholesale and retail trade					
Construction					
Electricity, gas and water					
Manufacturing					
Mining and quarrying					
Other sectors (please specify)					
Millennium Development Goals[7]					
Poverty eradication					
Poverty Incidence					
Percentage distribution of the poor					
Annual poverty threshhold					
Poverty headcount ratio at $1 a day (PPP) (% of population)					
Poverty gap at $1 a day (PPP) (%)					
Poverty headcount ratio at national poverty line (% of population)					
Income share held by lowest 20%					
Prevalence of underweight children under-five years of age					
Prevalence of undernourishment (% of population that is undernourished)					
Achieve universal primary education					
Net enrollment ratio in primary education					
Proportion of pupils starting Grade 1 who reach Grade 5 (Primary completion rate)					
Literacy rate of 15-24 years					
Reduce child mortality					
Under-five mortality rate (expressed as rate per 1,000 live births)					
Infant mortality rate (per 1,000 live births)					
Proportion of one-year-old immunized against measles					
Improve maternal health					
Maternal mortality rate (per 100,000 live births)					
Proportion of births attended by skilled health personnel					
Promote gender equality and empower women					
Ratio of girls to boys in primary, secondary and tertiary education					
Ratio of literate women to men, 15-24 years old					
Share of women in wage employment in the non-agricultural sector					
Proportion of seats held by women in national parliaments (local governments)					

Notes:

Shaded areas mean not applicable

[1] Data at the local/site level

[2] Data at the national/country level

[3] Sustainable development targets

[4] Sustainable development targets at the local/site level

[5] Sustainable development targets at the national/ country level

[6] Millennium Development Goals targets

[7] The Millennium Development Goals (MDG) are set of time-bound targets agreed to by all the world's countries and all the world's leading development institutions of eradicating extreme poverty, which is considered as the main challenge for sustainable development.

National[2]					Targets[3]			Remarks
1990	1995	2000	2005	2007	Local[4]	National[5]	MDG[6]	
							Halve between 1990 and 2015, the proportion of people whose income is less than $1 a day	
							Halve, between 1990 and 2015, the proportion of people who suffer from hunger	
							Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	
							Reduce by two-thirds, between 1990 and 2015, the under-five mortality	
							Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio	
							Eliminate gender disparity in primary and secondary education, preferable by 2005, and in all levels of education no later than 2015	

Part II: Core Indicators for SOC Reporting

Indicators	Status				
	Local[1]				
	1990	1995	2000	2001	2002
GOVERNANCE					
Policy, Strategies and Plans					
[001] **Coastal profile and environmental risk asssessment**					
Total length of coastline					
Coastal environmental profile/environmental risk assessment/ other similar assessments *(Pls. specify)*					
Length of coastline covered by environmental assessment					
[002] **Coastal strategy and action plans**					
Coastal Strategy/ Coastal Strategy Implementation Plans/ Strategic Environmental Management Plans *(Pls. specify name of plans and timeframe of implementation)*					
Management boundary (geographic) of the plan					
Scope of the Plan – aspects considered					
Bio-physical (Yes/No)					
Sociopolitical (Yes/No)					
Economic (Yes/No)					
Natural and Man-made Hazards (Yes/No)					
Natural Habitats and Cultural Heritage (Yes/No)					
Water supply (Yes/No)					
Food Security and Livelihood (Yes/No)					
Pollution and waste (Yes/No)					
Multisectoral participation considered in the development of the plan (Yes/No)					
CS/CSIP/SEMP adopted at the provincial level (Yes/No)					
CS/CSIP/SEMP adopted at the city/ municipal level (Yes/No) *Specify cities/municipalities*					
Monitoring and evaluation of the plan (Frequency)					
Updating and revision of plan (Frequency)					
Percentage accomplished of activities identified in the plan					
[003] **Local government development plan integrating coastal and marine areas**					
Availability of development plan at national level (Yes/No) *Pls. specify*					
Availability of development plan at the regional level (Yes/No) *Pls. specify*					
Availability of development plan at the provincial level (Yes/No) *Pls. specify*					
Total number of local government units (cities and municipalities)					
Number of local government units with development plan					
Development plan at the regional level integrate coastal environmental management (Yes/No) If No, separate Environmental Management Plan available *(Pls. specify)*					
Development plan at the provincial level integrate coastal environmental management (Yes/No) If No, Separate Environmental Management Plan available *(Pls. specify)*					
Development plans at the city/municipality integrate coastal environmental management? Provide list of municipalities If No, Separate Environmental Management Plan available *(Pls. specify)*					

Status					Targets[2]			Remarks
Local[1]					Local[3]	National[4]	Regional/ International[5]	
2003	2004	2005	2006	2007				

Indicators	Status				
	Local[1]				
	1990	1995	2000	2001	2002
Institutional Arrangements					
[**004**] **Coordinating mechanism**					
Coordinating mechanism established at the provincial level (Yes/No)					
Legal basis of the coordinating mechanism					
Organizational structure of the coordinating mechanism					
Coordinating mechanism at the municipal level					
Legal basis of the coordinating mechanism					
Organizational structure of the coordinating mechanism					
Coordinating office established at the provincial level					
Legal basis of the coordinating office at the provincial level					
Organizational structure of the coordinating office established at the provincial level					
Number of staff allocated at the coordinating office established at the provincial level					
Budget allocation of the coordinating office					
Coordinating office established at the municipal level					
Legal basis of the coordinating office at the municipal level					
Organizational structure of the coordinating office established at the municipal level					
Number of staff allocated at the coordinating office established at the municipal level					
Budget allocation of the coordinating office					
[**005**] **Participation of stakeholders in the coordinating mechanism**					
Government agencies represented in the coordinating mechanism					
City/municipality represented in the coordinating mechanism					
Civil society represented in the coordinating mechanism					
Private sector represented in the coordinating mechanism					
Academe represented in the coordinating mechanism					
Established sub-groups of the coordinating mechanism (e.g., executive committee, fisheries committee, monitoring committee, finance committee, etc.)					
Number of agencies in the coordinating mechanism which incorporated implementation plans in their work programs					
Number of staff allocated of the agencies in the coordinating mechanism					
Budget allocation of the agencies in the coordinating mechanism for coastal management implementation					
Legislation					
[**006**] **ICM enabling legislation**					
Provincial/City/Municipal level					
Legislation adopting ICM as an approach (Yes/No)					
Legislation on coastal use zoning (Yes/No)					
Legislation on permit issuances for fisheries, mining and other extraction activities (Yes/No)					
Legislation on permit issuances for pollution-related activities (Yes/No)					
Legislation on permit issuances on building structures in the coastal environment, including aquaculture structures (Yes/No)					
Access to rules and regulations					
[**007**] **Administration and enforcement of legislation**					
Environmental compliance/inspection					
Frequency of market inspection for fishery violations					
Frequency of aquaculture inspections					

Status					Targets[2]			Remarks
Local[1]					Local[3]	National[4]	Regional/ International[5]	
2003	2004	2005	2006	2007				

Indicators	Status				
	Local[1]				
	1990	1995	2000	2001	2002
Frequency of inspections of manufacturing establishments					
Frequency of inspections of coastal tourism establishments					
Frequency of inspections of ports and water transportation (shipping)					
Frequency of inspections of other coastal polluting establishments (piggeries, etc.)					
Frequency of inspections of groundwater use and extraction					
Frequency of coastal/sea-borne patrols					
Total number of permits issued					
Total number of permits issued for fisheries, mining and other extraction activities					
Total number of operating permits (including industries) issued at the provincial/city/municipal level					
Total number of permits issued for building structures in the coastal environment, including aquaculture structures					
Team/office established for monitoring and inspection (e.g., sea/ fish wardens, anti-illegal logging and anti-illegal fishing team or task force, environmental compliance, etc.)					
[**008**] **Environmental cases filed and resolved**					
Total number of reported complaints					
- Fishery-related					
- Zoning-related					
- Pollution-related					
- Related to extraction of resources other than fishing (mining, sand and gravel, logging, oil extraction, etc.)					
Total number of violations where violators were arrested					
- Fishery-related					
- Zoning-related					
- Pollution-related					
- Related to extraction of resources other than fishing (mining, sand and gravel, logging, oil extraction, etc.)					
Total number of violations penalized					
- Fishery-related					
- Zoning-related					
- Pollution-related					
- Related to extraction of resources other than fishing (mining, sand and gravel, logging, oil extraction, etc.)					
Total value of fines collected for non-compliance with relevant legislations					
- Fishery-related					
- Zoning-related					
- Pollution-related					
- Related to extraction of resources other than fishing (mining, sand and gravel, logging, oil extraction, etc.)					
Information and Public Awareness					
[**009**] **Public education and awareness**					
Communication plan available (Yes/No)					
Budget allocation for implementation of communication plan					
Staff allocation for implementation of communication plan					
Local government have facilities for public access of information					
- Library					
- Internet					
Local awareness programs					

Status					Targets[2]			Remarks
Local[1]					Local[3]	National[4]	Regional/ International[5]	
2003	2004	2005	2006	2007				

Indicators	Status				
	Local[1]				
	1990	1995	2000	2001	2002
Communicators group/organizations					
Number of community participation/mobilization activities initiated per sector (List of activities and initiator)					
Frequency of community participation/mobilization activity per year					
Number of participants in community participation/mobilization activities					
[010] Stakeholder participation and mobilization					
Civil society and other stakeholders' organizations in the area					
Number of membership per organizations					
Programs and activities of civil society and other stakeholders' organizations					
Stakeholder participation in environment-related programs and activities					
Capacity Development					
[011] Availability/accessibility					
Number of government personnel at the provincial level allocated to coastal management? (add up time allocations of personnel, for example half-time personnel, etc.)					
Number of government personnel at the city or municipal level allocated to coastal management? (add up time allocations of personnel, for example half-time personnel, etc.)					
Number of skilled personnel (e.g., graduates in natural sciences, social sciences, management, economics)					
Budget allocation for capacity development					
List of experts in the area					
Universities and research institutions in the area					
Number of graduates in ICM related courses (e.g., natural and social sciences, management, economics) in the university/ research institutions					
[012] Human resource capacity					
Number of people at the provincial/city/municipal level trained (formal and informal training) in ICM (indicate provincial/city/ municipal leaders (e.g., Mayors, Governors) trained					
Trainings can be conducted by the local government					
Number of people trained by the local government					
Financing Mechanisms					
[013] Budget for integrated coastal management					
Total amount requested for coastal management					
Total amount allocated for coastal management					
Total amount actually spent for coastal management					
Regular annual government budget for ICM [include allocations (internal revenue allocations) at the provincial and at the city/ municipal level]					
Grants from financing institutions					
Loans					
Government investment for environmental infrastructure					
Co-financing with partner private sector and civil society organization					
[014] Sustainable financing mechanisms					
Defined procurement process in place (e.g., defined ceilings for bidding, canvassing, and shopping)					
Corporate social responsibility					

Status					Targets[2]			Remarks
Local[1]					Local[3]	National[4]	Regional/ International[5]	
2003	2004	2005	2006	2007				

Indicators	Status				
	Local[1]				
	1990	1995	2000	2001	2002
Provincial/city/municipality authorized to engaged in public-private partnership					
Private sector financing (e.g., PPP)					
Private sector investment for environmental infrastructure					
Environmental user fees in place					
Percentage of environmental user fees allocated to environment projects					
Environmental fund established					
Payment for environmental services					
STRATEGIC ACTION PROGRAMS					
Natural and man-made hazard prevention and management					
[**015**] **Level of preparedness for disasters**					
Natural/man-made disaster/environmental emergency response plan available (Yes/No) *Pls. specify*					
Scope of natural/man-made disaster/environmental emergency response plan (e.g., floods, landslides, earthquakes, oil spill, etc.) *Pls. specify*					
Mitigation strategies identified					
Institutional mechanism for the implementation of the emergency response plan (Yes/No) *Pls. specify*					
Number of trained and non-trained personnel allocated					
Early warning system in place (Yes/No)					
Adequate equipment available (Yes/No)					
Budget allocation for natural/man-made disaster					
[**016**] **Degree of vulnerability to disasters**					
Multi-hazard (landslides, storms, floods) map available (Yes/No)					
Number of people located in hazard prone areas					
Number of people relocated or moved away from hazard prone areas					
[**017**] **Social and economic losses due to disasters**					
Lives and economic losses due to natural and man-made disaster incidents (typhoons, storm surges, floods, harmful algal blooms, shellfish poisoning, fish kills, oil spills)					
Frequency of disaster incidents by type					
Number of people severely affected by natural/ man-made disaster incidents					
Number of people died due to natural/man-made disaster incidents					
Total amount of economic losses due to natural/man-made disaster incidents					
Total damage cost					
Habitat protection, restoration and management					
[**018**] **Habitat management plan and implementation**					
Habitat management plan available					
Staff allocation for implementation of habitat management plan					
Budget allocation for habitat management					
[**019**] **Areal extent of habitats**					
Total coral reef area (km^2)					
Total seagrass area (km^2)					
Total mangrove area (km^2)					
Total natural beach area (km^2)					
Total forest (excluding mangroves) area (km^2)					
Total mudflat area (km^2)					

Status					Targets[2]			Remarks
Local[1]					Local[3]	National[4]	Regional/ International[5]	
2003	2004	2005	2006	2007				

Indicators	Status				
	Local[1]				
	1990	1995	2000	2001	2002
Total urban "green" area (km^2)					
Natural area rehabilitated (km^2)					
Other coastal/marine habitats (e.g., salt marshes, wetlands, etc.) (km^2)					
[020] Protected areas for coastal habitats and heritage					
Number of terrestrial area protected by law					
Total terrestrial area protected by law					
Management effectiveness rating of terrestrial protected areas					
Number of marine area protected by law					
Total marine area protected by law					
Management effectiveness rating of marine protected areas					
Number of coastal heritage area protected by law					
Total coastal heritage area protected by law					
Management effectiveness rating of coastal heritage protected areas					
Percent and area of habitats under protection, by type					
Area allocated for the protection of rare and endangered species (e.g., marine turtles, wildbirds, etc.) (km^2)					
[021] Conversion and reclamation					
Total area converted					
Types of habitats affected					
Extent of coastal area reclaimed					
Total length of coastline reclaimed					
Total area reclaimed					
Water Use, Supply Management					
[022] Water conservation and management					
Water Management and Conservation Plan available (Yes/No)					
Mitigation and adaptation strategies identified					
Staff allocation for water conservation and management					
Budget allocation for water conservation and management					
Water use per capita					
[023] Access to improved water source					
Access to improved water source					
Population using improved water sources					
Volume produced from piped water sources					
Water pricing per cubic meter					
Coastal area affected by saltwater intrusion					
[024] Incidences/deaths due to waterborne diseases					
Number of incidences of waterborne related diseases (diarrhea, typhoid, cholera, amoebiasis, schistosomiasis, giardiasis, etc.)					
Number of deaths due to waterborne related diseases (diarrhea, typhoid, cholera, amoebiasis, schistosomiasis, giardiasis, etc.)					
Food and other resources Security Livelihood and Management					
[025] Fishery management and implementation					
Fisheries Management Plan available					
Staff allocation for fishery management					
Budget allocation for fishery management					
[026] Fishery					
Municipal (small-scale) fishery production (total volume)					
Commercial (large-scale) fishery production (total volume)					
Aquaculture production (total volume)					
Size and catch composition					
[027] Malnutrition rate					
Number of undernourished population (all ages)					

Status					Targets[2]			Remarks
Local[1]					Local[3]	National[4]	Regional/ International[5]	
2003	2004	2005	2006	2007				

Indicators	Status				
	Local[1]				
	1990	1995	2000	2001	2002
Number of undernourished males (all ages)					
Number of undernourished females (all ages)					
Number of undernourished children (less than 5 years old)					
Number of undernourished males (less than 5 years old)					
Number of undernourished females (less than 5 years old)					
Proportion of undernourished population (less than 5 years old)					
Proportion of undernourished (all ages; male/female)					
[028] **Poverty incidence, employment and education**					
Poverty threshold					
Income per capita (male/female)					
Poverty incidence					
Labor force					
Total employment (male/female)					
Unemployment rate					
Education; proportion of population (male/female; primary/secondary/tertiary)					
[029] **Livelihood programs**					
Current types/sources of livelihood in the area					
Existing supplemental/alternative livelihood programs					
Staff allocation for livelihood programs					
Budget allocation for livelihood programs					
Sectors covered by livelihood programs					
Impacts of livelihood programs					
Pollution Reduction and Waste Management					
[030] **Pollution management plans and implementation**					
Pollution management plans available					
Scope of pollution management plan; *Pls. specify*					
Adequate equipment/facilities available					
Monitoring programs in place					
Budget allocation for pollution and waste management					
Staff allocation for pollution and waste management					
[031] **Water quality**					
Priority parameters (temporal/spatial)					
Water transparency (secchi depth/ total suspended solids) (marine/river/beach/groundwater)					
Dissolved oxygen (DO) concentrations (marine/river/beach/groundwater)					
Total/fecal coliform counts (marine/river/beach/groundwater)					
Secondary parameters (temporal/spatial)					
Chlorophyll concentrations (marine/river/beach)					
Biological oxygen demand concentrations (marine/river/beach)					
Nutrient (nitrates, phosphates) concentrations (marine/river/beach/groundwater)					
Heavy metals					
Planktons and harmful algal blooms					
Hydrocarbons/TBT					
[032] **Air quality**					
Total suspended particulates (TSP)					
Other air pollutants (particulate matter, sulfur oxide, nitrogen oxide, carbon monoxide, volatile organic carbon)					

Status					Targets[2]			Remarks
Local[1]					Local[3]	National[4]	Regional/ International[5]	
2003	2004	2005	2006	2007				

Indicators	Status				
	Local[1]				
	1990	1995	2000	2001	2002
[033] Sanitation and domestic sewerage					
Population with access to improved sanitation (Connection to a public sewer, Connection to a septic system, Pour-flush latrine, Simple pit latrine, Ventilated improved pit latrine) (Note: the following are NOT considered improved sanitation: Public or shared latrine, Open pit latrine, Bucket latrine)					
Households connected to septic tanks					
Volume of septage collected/treated					
Population served by public sewerage system (collection and treatment)					
Location of discharge outfalls					
Volume of domestic wastewater generated					
Volume of domestic wastewater recycled or reused					
[034] Municipal solid waste					
Tonnage of municipal solid waste generated					
Tonnage of municipal solid waste received in landfills/dumpsites					
Tonnage of municipal solid waste received at recycling facilities					
Tonnage of municipal solid waste recycled materials recovered and sold					
[035] Agricultural, industrial and hazardous wastes					
Volume of industrial solid waste generated					
Volume of agricultural solid waste generated					
Volume of toxic and hazardous solid waste generated					
Volume of industrial solid waste recycled or reused					
Volume of agricultural solid waste recycled or reused					
Volume of toxic and hazardous solid waste recycled or reused					
Volume of industrial wastewater generated					
Volume of agricultural wastewater generated					
Volume of toxic and hazardous wastewater generated					
Volume of industrial wastewater treated/level of treatment					
Volume of agricultural wastewatertreated/level of treatment					
Volume of toxic and hazardous waste treated/level of treatment/ method of disposal					
Volume of industrial wastewater recycled or reused					
Volume of agricultural wastewater recycled or reused					
Volume of toxic and hazardous wastewater recycled or reused					

Notes:

[1] Data at the local/site level
[2] Sustainable development targets
[3] Sustainable development targets at the local/site level
[4] Sustainable development targets at the national/country level
[5] Sustainable development targets set by relevant regional/international environmental instruments (e.g., SDS-SEA, Agenda 21, MDG, etc.)

Status					Targets[2]			Remarks
Local[1]					Local[3]	National[4]	Regional/ International[5]	
2003	2004	2005	2006	2007				

Part III: Detailed List of Indicators and Targets for SOC Reporting

(Please use separate sheet(s) for data as necessary, arranged and numbered chronologically based on indicators under each specific elements of governance and strategic action programs.)

Indicators	Status					
		Local[1]				
		1990	1995	2000	2001	2002
GOVERNANCE						
Policy, Strategies and Plans						
Sectoral plans related to ICM						
Agriculture and fisheries						
Integrated Development Plans						
Comprehensive Agriculture & Fisheries Modernization Plan						
National Tourism Plan						
National Energy Plan						
National Forestry Plan						
National Plan on Mining						
National Plan on Climate Change						
Land Use Plans						
Coastal Resource Management Plan						
Marine Sanctuary Management Plan						
Regional Framework Plans	[ ] **Yes** [ ] **No** Pls. specify					
Provincial Framework Plans	[ ] **Yes** [ ] **No** Pls. specify					
Comprehensive Land-use Plans	[ ] **Yes** [ ] **No** Pls. specify					
Local development plan	[ ] **Yes** [ ] **No** Pls. specify					
Other relevant plans, policies and strategies (please specify)						
Institutional Arrangements						
Sustainable development committee/ authority/ council	[ ] **Yes** [ ] **No** Pls. specify					
Coordinating mechanism established	[ ] **Yes** [ ] **No** Pls. specify					
Other relevant information (please specify)						
Legislation						
National Legislations						
Water-related legislation and regulations						
National Sewerage and Septage management Program						
Pollution control law						
National Water Quality Management Fund						
National Water Quality Status Report						
Water Quality and Effluent Standards and Regulations						

Status									
Local[1]					National[2]	Targets[3]			Remarks
2003	2004	2005	2006	2007		Local[4]	National[5]	Regional/Int'l[6]	
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				

Indicators	Status					
		Local[1]				
		1990	1995	2000	2001	2002
Water Pollution Permits and Charges						
Water Quality Monitoring & Surveillance						
Domestic Sewage Collection, Treatment and Disposal						
EIS System						
Anti-Dumping law						
ICM						
Other relevant national legislations (please specify)						
Information and Public Awareness						
Integrated Information Management System (IIMS) established	[ ] **Yes** [ ] **No**					
Other relevant information (please specify)						
Capacity Development						
Number of staff trained in ICM						
a. Line agencies						
b. LGUs						
c. People's Organizations						
Types and names of coastal & marine-oriented NGOs & POs						
Activity level						
Number of people per organization involved						
Other relevant information (please specify)						
Financing Mechanisms						
National and local level allocation (% of total expenditure)						
Regular annual government budget for Environment						
Regular annual government budget for ICM						
Regular annual government budget for SAP						
Loans for Environment						
Private-Public Sector Investments						
Investments in pollution reduction						
Corporate contributions to environmental initiatives & projects						
Capital investments for environmental projects						
Other relevant information (please specify)						
STRATEGIC ACTION PROGRAMS						
Natural and man-made hazard prevention and management						
• **Condition**						
Frequency of disaster incidents by type						
a. Earthquakes						
b. Tsunamis						
c. Storm surges						
d. Sea level rise						
e. Floods						
f. Typhoons						
g. Harmful algal blooms						
h. Shellfish poisoning						
i. Fish kills						
j. Oil/chemical spill						
j.1. Frequency						
j.2. Volume of spill						

Status									
Local[1]					National[2]	Targets[3]			Remarks
2003	2004	2005	2006	2007		Local[4]	International[5]	Regional/Int'l[6]	
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				

Indicators	Status						
		Local[1]					
		1990	1995	2000	2001	2002
j.3. Extent of area affected							
Number of people severely affected by natural/ man-made disaster incidents							
a. Earthquakes							
b. Tsunamis							
c. Storm surges							
d. Sea level rise							
e. Floods							
f. Typhoons							
g. Harmful algal blooms							
h. Shellfish poisoning							
i. Fish kills							
j. Oil spill							
Number of people died due to natural/man-made disaster incidents							
a. Earthquakes							
b. Tsunamis							
c. Storm surges							
d. Sea level rise							
e. Floods							
f. Typhoons							
g. Harmful algal blooms							
h. Shellfish poisoning							
i. Fish kills							
j. Oil spill							
Total amount of economic losses due to natural/ man-made disaster incidents							
a. Earthquakes							
b. Tsunamis							
c. Storm surges							
d. Sea level rise							
e. Floods							
f. Typhoons							
g. Harmful algal blooms							
h. Shellfish poisoning							
i. Fish kills							
j. Oil spill							
Volume of marine debris							
Ballast waters (discharge volume)							
Discharge of other pollutants (volume)							
Shipping							
a. Total number of vessels							
b. Total cargo throughput							
c. Total passengers embarked and disembarked							
• **Response**							
Natural Hazards Response Plan	[ ] **Yes** [ ] **No** Pls. specify						
Man-made Hazards Response Plan	[ ] **Yes** [ ] **No** Pls. specify						
Oil/chemical spill contingency plan adopted	[ ] **Yes** [ ] **No** Pls. specify						

Status									
Local[1]					National[2]	Targets[3]			Remarks
2003	2004	2005	2006	2007		Local[4]	International[5]	Regional/Int'l[6]	
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				

Indicators	Status						
		Local[1]					
		1990	1995	2000	2001	2002
Harmful Algal Blooms Response Plan	[ ] **Yes** [ ] **No** Pls. specify					
Fish Kill Response Plan	[ ] **Yes** [ ] **No** Pls. specify					
Functional Disaster Coordinating Council	[ ] **Yes** [ ] **No** Pls. specify					
Habitat protection, restoration and management						
• **Condition**						
Total coral cover						
Reefs at Risk Threat Index						
Total seagrass cover						
Total mangrove cover						
Total wetlands area (km^2)						
Total softbottom, mudflats, rocky shores, area (km^2)						
Total coastal vegetation area (km^2)						
Total forest cover						
Total area of forest land						
Total urban "green" area (km^2)						
Natural area rehabilitated (km^2)						
Vegetation Index of Municipality/City - vegetation index vis-a-vis						
"Green cities"						
Coastal erosion						
Shoreline changes						
Density of public green area (m^2 per capita)						
Species Richness						
Marine fishes(all)						
Marine reef associated fishes						
Marine "cartilaginous" fishes						
Seagrasses						
Corals						
Marine mollusks						
Other marine invertebrates						
Marine mammals (cetaceans)						
Other marine mammals (dugong)						
Marine reptiles (sea turtles)						
Marine reptiles (sea snake)						
Seabirds						
Endangered and exotic species						
Mammals						
Birds						
Reptiles						
Amphibians						
Fishes						
Molluscs						
Other Invertebrates						
Plants						
Change in species and trophic structure of fish species caught						
• **Response**						
Operating budget and manpower complement of agencies in wildlife						
protection						
Threatened and legally protected marine species						

Status									
Local[1]					National[2]	Targets[3]			Remarks
2003	2004	2005	2006	2007		Local[4]	International[5]	Regional/Int'l[6]	
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				
					[ ] **Yes** [ ] **No** Pls. specify				

Indicators	Status					
		Local[1]				
		1990	1995	2000	2001	2002
Estimated number of threatened species taken						
Expenditure on rehabilitation programs implemented in rehabilitated areas						
Restoration initiatives						
Watershed reforestation activities (total area reforested)						
Water Use, Supply and Management						
• **Condition**						
Water supply						
Hot spots rating for water quantity						
Groundwater availability (volume)						
Surface water availability (volume)						
Water production data of water districts						
No. of water districts						
Cubic meters produced						
Cubic meters billed						
Mean annual rainfall						
Surface water quality						
Well water tested for TDS; coliform						
Classification of fresh surface water						
Water use						
Water use per capita						
Water Demand by City/Municipality						
Water Demand by Major Cities						
Water Demand by Sector						
a. Industry						
b. Agriculture						
c. Domestic						
Water rights granted for surface water abstraction						
Water rights granted for groundwater abstraction						
• **Response**						
Water reuse						
Percentage wastewater recycled						
Water investment						
Food and other resources Security Livelihood						
• **Condition**						
Fishery						
Aquaculture production (total voume)						
Value of municipal fishery production						
Value of commercial fishery production						
Value of aquaculture production						
Net change in fish catch						
a. Marine						
b. Inland						
c. Aquaculture						
d. Commercial						
Growth rates in fish production by sector						
Catch per unit effort						
Illegal Unregulated & Unreported (IUU) fishing - Illegal fishing incidents/apprehensions						
Species overfished						

Status									
Local[1]					National[2]	Targets[3]			Remarks
2003	2004	2005	2006	2007		Local[4]	International[5]	Regional/Int'l[6]	

Indicators	Status						
		Local[1]					
		1990	1995	2000	2001	2002
Demand for fish and fishery products - Projected population and fish consumption levels							
Total shellfisheries production							
Total value of shellfisheries production							
Total production of other resources (e.g., oil, gas, sand, minerals)							
Total value of other resources (e.g., oil, gas, sand, minerals)							
• **Response**							
Livelihood Opportunities increased							
Increase of Income of fishing households over time							
Livelihood options pursued							
Number of households engaged in aquaculture activities							
Number of households engaged in other alternative livelihoods							
Poverty among municipal fishing households reduced							
Code of conduct for responsible fisheries implemented	[ ] **Yes** [ ] **No**						
Sustainable aquaculture practices adopted	[ ] **Yes** [ ] **No**						
Pollution Reduction and Waste Management							
• **Condition**							
Water quality							
Heavy metals concentrations							
Pesticides concentrations							
Sediment quality							
Nutrients							
Organic compounds							
Metals							
Biota							
Organic compounds							
Metals							
• **Response**							
Pollution and waste management							
Monitoring programs in place	[ ] **Yes** [ ] **No**						
IEIA adopted	[ ] **Yes** [ ] **No**						
Hazardous waste management in place	[ ] **Yes** [ ] **No**						
Investment plan for sanitation							
Number of solid waste disposal facilities							
Sanitary landfill							
a. Number							
b. Size							
c. Volume							
Sludge treatment and disposal							
Port reception facilities							
Investments							
Investments in waste reduction infrastructure							
Investments in port reception facilities							
Capital investments for environmental projects							
Other relevant indicators							
Use of biofuels and other renewable forms of energy							
Rate of municipal waste collection							
Waste segregation activity in the area							
Other relevant information *(please specify)*							

Notes:

[1] Data at the local/site level
[2] Data at the national/country level
[3] Sustainable development targets
[4] Sustainable development targets at the local/site level
[5] Sustainable development targets at the national/country level
[6] Sustainable development targets set by relevant regional/international environmental instruments (e.g., SDS-SEA, Agenda 21, MDG, etc.)

Status									
Local[1]					National[2]	Targets[3]			Remarks
2003	2004	2005	2006	2007		Local[4]	International[5]	Regional/Int'l[6]	
					[ ] Yes [ ] No				
					[ ] Yes [ ] No				
					[ ] Yes [ ] No				
					[ ] Yes [ ] No				
					[ ] Yes [ ] No				

Annex C. Sample of an Accomplished SOC Reporting Template

(**Note**: Blank Spaces indicate no data/information)

Part I: General Information

A: Information relevant to the country/site

(Please provide map of the area showing the watershed area, administrative boundaries and other relevant information.)

Information	Local								
Area									
Total	km^2								
Land	3,165.81 km^2								
Water (Inland)	15,411 has (CY 2005 ENR info & Stat) km^2								
Watershed	11,800 has (Palico watershed)								
Coastline	336 kms. (total Batangas coastline); 127 kms. (coastline, fish landings)								
Territorial sea (up to 12 nm)	km^2								
Exclusive Economic Zone (200 nm)	km^2								
Continental shelf (up to 200 m depth)	km^2								
Coastal waters	km^2								
Oceanic waters	km^2								
Major rivers	Pansipit; Lian-Palico-Lumindac; Dacanlao; Molino-Obispo; Calumpang								
Catchment basins									
Number of islands	2 (Tingloy and Verde Island, Batangas City								
	1990	**1995**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2007**
Population	1,476,783	1,658,567	1,905,348						12,283,351
Population growth rate	2.32	2.2	3.02						3.02
Coastal population									
Coastal population density									7 per ha
Administrative Divisions:									
Provinces									3
Cities									26 (out of 31)
Coastal municipalities									
GDP									
GDP per capita									
Labor force	889,000	1,029,000	1,164,000			1,195,000			
Labor Force Participation Rate	62.54	60.54	63.83			66.86			
Employment Rate	90.11	90.05	87.89			87.73			
Unemployment Rate	9.89	9.95	12.11		12.3	13.3			
Underemployment Rate			12.5			8.4			
Poverty Incidence									
Percentage distribution of the poor									
Annual poverty threshhold by province					15,362.30				
Ports and harbors (please list major ports and harbors)									Batangas Port and smaller ports (26 private and 5 government ports).
Merchant marine (Number of ships by size or tonnage)									
a. Domestic	6,466	13,994	21,975						23,729
b. Foreign	310	89	143						143

National							
			300,000 km^2				
			298,170 km^2				
			1,830 km^2				
			36,289 km				
			679,800 km^2				
			2.2 million km^2				
			244,500 km^2				
			226,000 km^2				
			1.93 million km^2				
			7,100				
1990	**1995**	**2000**	**2002**	**2003**	**2004**	**2005**	**2007**
				84.6 million			
				1.92			
			39 million				
			285 person per km^2				
				79			
				61			
				822 (out of 1,502)			
			$4,200				
			33.9 million				
							64.5
							92.6
							7.4
							18.9
							36.8
						14,046	14,866
				Batangas, Cagayan de Oro, Cebu, Davao, Guimaras Island, iligan, Iloilo, Jolo, Legaspi, Manila, Masao, Puerto Princesa, San Fernando, Subic Bay, Zamboanga			

Information	Local								
	1990	1995	2000	2001	2002	2003	2004	2005	2007
Pipelines:									
Petroleum products									242
Natural gas									526.5
International disputes									
Ethnic groups (please indicate major groups):									
Religions (please indicate major religions):	Roman Catholic - 96.64		Roman Catholic - 95.7						
Contribution of the site to national GDP by sector:									
Agriculture, Fisheries and Forestry									
Industry (Manufacturing and Mining)									
Services (Trade and Finance)									
Other sectors (please specify)									
Sectoral employment									
Agriculture, fishery and forestry						200,000 28.71%			
Community and social services									
Banking and finance									
Transportation and storages									
Wholesale and retail trade									
Construction									
Electricity, gas and water									
Manufacturing									
Mining and quarrying									
Other sectors (please specify)						165,000 (Industry) 23.24%; 336,000 (Sevices) 47.32%			
Number of manufacturing establishments (by size)									232
Small									102
Medium									36
Big									94
Number of manufacturing establishments (by type; please specify by types of activity)									
Number of tourists arrivals in the area			40,264	114,968	169,782	171,132	195,189		

National							
1990	1995	2000	2002	2003	2004	2005	2007
				357			
				100 km			
				a) a complex dispute over Kalayaan Islands (Spratlys) with China, Malaysia, Taiwan, Vietnam and possibly Brunei; b) RP government represents heirs of the Sultan of Sulu in pursuing sovereignty claims over Malaysian-held Sabah			
				Christian Malay- 91.5%; Muslim - 4%; Chinese - 1.5%; Other - 3%			
				Roman Catholic - 83%; Protestant - 9%; Islam – 5%; Buddhist and others – 3%			
			16				
			31				
			53				
					474,438	501,378	

B: Information relevant to MDG Targets

Indicators	Status						
	Local						
	1990	1995	2000	2003	2004	2005	2006
Poverty eradication							
Poverty headcount ratio at $1 a day (PPP) (% of population)							
Poverty gap at $1 a day (PPP) (%)							
Poverty headcount ratio at national poverty line (% of population)			207			24.5	
Income share held by lowest 20%							
Prevalence of underweight children under-five years of age							
Prevalence of undernourishment (% of population that is undernourished)					8.32	7.37	
Proportion of households with income less than the food threshold				6			
Achieve universal primary education							
Net enrollment ratio in primary education				83.34			78.63
Proportion of pupils starting Grade 1 who reach Grade 5 (Primary completion rate)							
Literacy rate of 15-24 years							
Proportion of 13-16 years old children who are in secondary school				44.16			
Reduce child mortality							
Under-five mortality rate (expressed as rate per 1,000 live births)		54.04					
Infant mortality rate (per 1,000 live births)		41.42			8	10.88	
Proportion of one-year-old immunized against measles						90	
Improve maternal health							
Maternal mortality rate (per 100,000 live births)		139.11					
Proportion of births attended by skilled health personnel							
Promote gender equality and empower women							
Ratio of girls to boys in primary education							
Ratio of girls to boys in secondary education							
Ratio of girls to boys in tertiary education							
Ratio of literate women to men, 15-24 years old							
Share of women in wage employment in the non-agricultural sector							
Proportion of seats held by women in national parliaments (local governments)							

Status						Targets			Remarks
National						Local	National	MDG	
1990	1995	2000	2003	2005	2006				
19.8				14.8			9.9	Halve between 1990 and 2015, the proportion of people whose income is less than $1 a day	
4.2				2.9			2.1		
40.6							20.3		
5.9				5.4			2.95		
34.5					24.6		17.25	Halve, between 1990 and 2015, the proportion of people who suffer from hunger	
26				18			13		
85.1			90.15	84.44			100	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	
68.4			69.8				83.3		
97				95					
80			40				53.3	Reduce by two-thirds, between 1990 and 2015, the under-five mortality	
57			29				38		
85				80			56.7		
209			172				156.8		
	53			60				Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio	
95.8			101.8				100	Eliminate gender disparity in primary and secondary education, preferable by 2005, and in all levels of education no later than 2015	
104.5			115.9						
100				101					
39.7				40.4					
9				15					

Part II: Core Indicators for SOC Reporting

Indicators	Status						
	Local						
	1990	1995	1996	1997	1998	1999	2000
GOVERNANCE							
Policy, Strategies and Plans							
[001] Coastal profile and environmental risk asssessment							
Total length of coastline	~449 km						
Coastal environmental profile/environmental risk assessment/other similar assessments (Pls. specify)			CEP of Batangas Bay Region				Environmental Profile of BABR
Length of coastline covered by environmental assessment			92 km (20.5%)				300 km (66.8%)
[002] Coastal strategy and action plans							
Coastal Strategy/ Coastal Strategy Implementation			SEMP BBR	⇨			
Plans/ Strategic Environmental Management Plans (Pls. specify name of plans and timeframe of implementation)			1996-2020				
Management boundary (geographic) of the plan			Batangas Bay Region	⇨			
Scope of the Plan - aspects considered							
Bio-physical (Yes/No)			Yes	⇨			
Sociopolitical (Yes/No)			Yes	⇨			
Economic (Yes/No)			Yes	⇨			
Natural and Man-made Hazards (Yes/No)			Yes (man-made)	⇨			
Natural Habitats and Cultural Heritage (Yes/No)			Yes	⇨			
Water supply (Yes/No)			No	⇨			
Food Security and Livelihood (Yes/No)			Yes	⇨			
Pollution and waste (Yes/No)			Yes	⇨			
Multisectoral participation considered in the development of the plan (Yes/No)			Yes	⇨			
CS/CSIP/SEMP adopted at the provincial level (Yes/No)			Yes				
CS/CSIP/SEMP adopted at the city/ municipal level (Yes/No) Specify cities/municipalities			Yes (Batangas and Lipa City Municipalities of San Pascual, Bauan, Mabini, Tingloy, Alitagtag, Cuenca, San Jose, Padre Garcia, Rosario, Ibaan, Lobo, Taysan), as members of the BBREPC				

Status								Remarks
Local								
2001	2002	2003	2004	2005	2006	2007	2008	
								Coastline = Batangas Bay + Balayan and Adjacen Bays + San Juan + Lobo
							87.30%	
			ICM Plan (BABR)	SEMP Batangas	ICRM Plan for	SEMP		
			2004-2023	Province 2005-2020 developed (integrates BBR SEMP and ICM Plan for BABR); CRM Plan of Nasugbu (2005-2011) adopted through Resolution 57, 2005	Mabini (2006-2010)	Batangas Province 2005-2020 adopted		
			Balayan and Adjacent Bays Region	Nasugbu	Mabini	Batangas Province		
			Yes	Yes	Yes	Yes	⇨	
			Yes	Yes	Yes	Yes	⇨	
			Yes	Yes	Yes	Yes	⇨	
			No	Yes (flooding)	No	Yes (man-made)	⇨	
			Yes	Yes	Yes	Yes	⇨	
			No	No	No	Yes	⇨	
			Yes	Yes	Yes	Yes	⇨	
			Yes	Yes	Yes	Yes	⇨	
			Yes	Yes	Yes	Yes	⇨	
			Approved and endorsed by the PDC to the Sangguniang Panlalawigan on Nov. 2004 but was not adopted.			Yes, Sangguniang Panlalawigan Resolution No. 129, March 22, 2007		
			Prov. Devt. Council (PDC) adoption and endorsement represents adoption of the 12 municipalities in the BABR as the Municipal Mayors constitute the PDC	Yes, Nasugbu (but not implemented)	Yes, Mabini	PDC adoption and endorsement represents adoptions of cities and municipalities as the various Municipal Mayors constitute the PDC		

Indicators	Status						
	Local						
	1990	1995	1996	1997	1998	1999	2000
Monitoring and evaluation of the plan (Frequency)			None in place; only programme evaluation	⇨			
Updating and revision of plan (Frequency)							
Percentage accomplished of activities identified in the plan			No quantified data. Annual PG-ENRO accomplishment report available.	⇨			
Institutional Arrangements							
[**004**] **Coordinating mechanism**							
Coordinating mechanism established at the provincial level (Yes/No)			Yes, Batangas Bay Region Environmental Protection Council	⇨			
Legal basis of the coordinating mechanism			Ordinance 001 Series -1996				
Organizational structure of the coordinating mechanism			Appendix [004]-1				
[**006**] **ICM enabling legislation**							
Provincial/City/Municipal level							
Legislation adopting ICM as an approach (Yes/No)							
Legislation on coastal use zoning (Yes/No)							
Legislation on permit issuances for fisheries, mining and other extraction activities (Yes/No)							
a) fisheries	Yes, Mabini; Nasugbu; Calatagan		Yes, Calatagan; Lobo; Batangas City	Yes, Tingloy		Yes, Calaca; San Juan; Tingloy	
b) mining and quarrying			Yes, Batangas Province		Yes, Tingloy		
Total number of permits issued for fisheries, mining and other extraction activities							
a. Total number of mining permits issued			27	33	5	9	35
b. Total number of fishery permits issued			No data	⇨			
Legislation on permit issuances for pollution-related activities (Yes/No)		Yes, Batangas City	Yes, Batangas City			Yes, Calaca	

Status								Remarks
Local								
2001	2002	2003	2004	2005	2006	2007	2008	
			None	None	None	None		
				Development of the Province SEMP and served as updating of the BBR SEMP				
					PEMSEA.2006. Batangas Case Study highlights major accomplishments of ICM implementation in Batangas.			As there is no M & E in place for SEMP, there is no quantification as to the percentage accomplished of the activities identified in the plan. PG-ENRO publishes yearly accomplishment reports that integrates accomplishment with respect to ICM.
	CRM Board of Mabini	CRM Board of Tingloy	No, coordinating mechanism for Balayan Bay ICM not established	CRM Board for Nasugbu established				
	Res. No. 204 S. 2002	Mun. Ordinance 2 S. 2003	None	Resolution 58 S. 2005				
	[005]	[005]	None	None, not functional				
						No	No	
					Yes, Mabini			Data covers only municipalities included in the SOC field survey. Details of ordinances refer to summary of town level data
	Yes, Batangas City		Yes, San Juan; Nasugbu	Yes, Batangas City	Yes, Calatagan; Lobo; Nasugbu	Yes, Batangas City	Yes, Calaca; Balayan	For Balayan, exact year of fishery ordinance is not indicated but reflects only current status
16	12	11	6	15	32	28	229	2008: total from 1996-2007
						639		Balayan + San Juan (Number of fishers registered)
Yes, Batangas City					Yes, Calatagan			

Indicators	Status						
	Local						
	1990	1995	1996	1997	1998	1999	2000
Total number of operating permits (including industries) issued at the provincial/city/municipal level	25	43					213
Legislation on permit issuances on building structures in the coastal environment, including aquaculture structures (Yes/No)			Yes, Calaca				
Total number of permits issued for building structures in the coastal environment, including aquaculture structures							
Access to rules and regulations	Yes	⇨					
STRATEGIC ACTION PLANS							
Food and other resources Security Livelihood and Management							
[025] **Fishery**							
Fisheries Management Plan available							
Budget allocation for fishery management							
Municipal (small-scale) fishery production (total volume)		20,077.0	19,012.0	24,806.0	20,674.0	18,011.0	18,636.0
Commercial (large-scale) fishery production (total volume)		3,374.0	3,672.0	3,348.0	3,411.0	3,857.0	3,350.0
Tonnage of fisheries catch of higher trophic level (please use FAO types); municipal/commercial							
[027] **Malnutrition rate**							
Number of undernourished males (all ages)							
Number of undernourished females (all ages)							
Number of undernourished males (less than 5 years old)							
Number of undernourished females (less than 5 years old)							
Proportion of undernourished population (less than 5 years old)		43.51		38.72	35.53	29.57	

Status								Remarks
Local								
2001	2002	2003	2004	2005	2006	2007	2008	
				210	232			Number of establishments (provincial data)
							Yes, Lobo	Lobo indicated current status not exact year of Ordinance (March 4 questionnaires)
							16; 161.64 has	FLA duly issued by Dept. of Agriculture, Jan. 1973 to present (Batangas Province Fishery Profile)
								Provincial legislations posted on bulletin boards and published on broadsheets. Regulations (particularly in municipalities) are also translated in Tagalog for public dissemination
19,459.0 3,812.0				Yes, Provincial Level: Integrated with SEMP	Municipal Fisheries Code passed in Calatagan (first in the province)		Yes, Fishery Management Plan at the municipal level integrated with the CLUP, AIP and CRM Plan (if available)	Town level summary
	18,658.0	18,641.0	16,600.0	15,956.1	22,702.8	20,514.1		
	3,238.0	3,681.0	3,574.0	4,177.0	5,150.0	5,743.1		
						No data		
								Data are gender aggregated
			8.32	7.37	6.39	6.11		

Indicators	Status						
	Local						
	1990	1995	1996	1997	1998	1999	2000
[028] **Poverty incidence, employment and education**							
Total population	1,476,783	1,658,567					1,905,348
Population growth rate	2.32	2.2					3.02
Poverty threshold				13,312.90			15,305.10
Income per capita (male/female)				29,126.00			32,055
Poverty incidence				25.7			20.7
Employment in the capture fishery sector	No data						
Employment in the aquaculture sector	No data						
Employment in the tourism sector	No data						
Employment in the shipping (including small ferry boats) sector	No data						
Total employment (male/female)	90.11	90.05					87.89
Education; proportion of population (male/female; primary/secondary/tertiary)							
a. Elementary			93.63	94.36			
b. Secondary			64.27	65.48			
Budget allocation for livelihood programs							

Status								Remarks
Local								
2001	2002	2003	2004	2005	2006	2007	2008	
					2,283,351			
					3.02			
15,547.00	15,362.30							
		24.5				22.24		Poverty diagnosis for priority municipalities available
								No provincial data. Lemery reported employment per sector (town level summary)
		87.8						2003: latest provincial data on employment
		83.34				92.77		Provincial data on 14 core poverty indicators
		44.16				83.89		
							250,000-500,000	Some municipalities have no specific budget allocation for livelihood (town level summary)

Part III: Detailed List of Indicators and Targets for SOC Reporting

(Please use separate sheet(s) for data as necessary, arranged and numbered chronologically based on indicators under each specific elements of governance and strategic action programs.)

Indicators	Status									
	Local									
	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003
GOVERNANCE										
Policy, Strategies and Plans										
Sectoral plans related to ICM										
Agriculture and fisheries										
Integrated Development Plans (Yes/No)										
Comprehensive Agriculture and Fisheries Modernization Plan (Yes/No)										
Tourism Plan (Yes/No)										
Energy Plan (Yes/No)										
Forestry Plan (Yes/No)										
Plan on Mining (Yes/No)										
Plan on Climate Change (Yes/No)										
ICM Policy (Yes/No)										
Land Use Plans (Yes/No)										
Coastal Resource Management Plan (Yes/No)										
Marine Sanctuary Management Plan (Yes/No)										
Regional Framework Plans (Yes/No)	Yes									
Provincial Framework Plans (Yes/No)	Yes									
Comprehensive Land-use Plans (Yes/No)										
Local development plan (Yes/No)	Yes; Multisectoral Development Plan of Batangas Province									
Other relevant plans, policies and strategies (please specify)										

Status				National	Targets			Remarks
Local					Local	National	International	
2004	2005	2006	2007					
				Yes; Integrated Development Plans for Strategic Agricultural Fisheries Development Zones (SAFDZs)				
				Yes; RA 8425 Agriculture and Fisheries Modernization Act of 1997				
				Yes; National Tourism Development Plan; Philippine Tourism Action Plan 2003-2010				
				Yes; Integrated Energy Plan				
				Yes; Master Plan for Forestry Development				
				Yes; Mineral National Action Plan				
				Yes; Administrative Order No. 171; creation of the Presidential Task Force on Climate Change				
				Yes; Executive Order 533, 2006				
			Yes	Yes				
			Yes	Yes				
			Yes	Yes				
	Batangas Framework Development Plan							Batangas Frame work Development Plan (Integrated with land and water use plan for the province)
	Yes, Comprehensive Provincial Land Use and Water Use Plan/ Physical Framework Plan Province of Batangas 2005-2020							
				EO 578, 2006; establishment of National Biodiversity Policy (Sulu-Sulawesi Marine Ecoregion and Verde Island Passage)				

Indicators	Status									
	Local									
	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003
STRATEGIC ACTION PROGRAMS										
Water Use, Supply and Management										
• **Condition**										
Water supply										
Hot spots rating for water quantity										
Groundwater availability (volume)										
Surface water availability (volume)										
Water production data of water districts										
No. of water districts		18					18			
Cubic meters produced (Region IV)										45,775
Cubic meters billed (Region IV)										
Mean annual rainfall										
Surface water quality										
Well water tested for TDS; coliform										
Classification of fresh surface water (Region IV)										
a. Class A		11								
b. Class B		3								
c. Class C		33								
d. Class D		1								
e. Class SA		1								
f. Class SB		-								
g. Class SC		1								
Water use										
Water Demand by City/Municipality										
Water Demand by Major Cities										
Water Demand by Sector (for Groundwater; Region IV); million cubic meters (computed based on 250L/day/person consumption										
a. Industry	1,090.11	1,605.26	1,574.09	1,567.49	1,640.91	1,643.56	1,686.21	1,819.27		
b. Agriculture										
c. Domestic	763.49	876.13	899.72	923.24	946.76	970.28	993.86	1,017.32		
Water rights granted for surface water abstraction (Region IV) in liters per second				718,371.1	91,093.16	27,005.528	165.51	10,006.45	2,355.793	
Water rights granted for groundwater abstraction (Region IV) in liters per second				6,122.6	1,612.442	18,880.298	644.859	654.628	920.014	
• **Response**										
Water pricing per cubic meter										
Water reuse										
Water investment										

Status				National	Targets			Remarks
Local					Local	National	International	
2004	2005	2006	2007					
			No data					
			No data					
		18			Establish regulatory measures and market-based instruments that will rationalize the use of water reflecting scarcity value by 2010		Halve by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	
47,017								
			No data					
			No data					
15								
13								
44								
1								
2								
1								
2								
	1003054.783							
	20344.928							
		27.64 (avg. cost)						
			No data					
			No data					

Appendix [031]-1. Water quality data of Batangas Bay

Date	Parameters	Depth	Stations											
			Tabangao	Pinamukan	Simlong	Mabini	San Miguel	Bauan	Sta. Rita	Sta. Clara	San Pascual	Wawa	Pier	Mainaga
Mar 2001	Temp (°C)	T10						18.8		26.8		28.4		
Jul 2001	Temp (°C)	10								30.2				
Aug 2003	Temp (°C)			29.00		29.0		29.0	30	29.0		28.0		28.0
Jul 2004	Temp (°C)		28.00	29.00	28.00			28.0		28				28
Dec 2004	Temp (°C)		24.50	25.00	24.50	25.0	5.0	25.0					25.0	
Apr 2005	Temp (°C)		26.00	27.00	27.00	27.0	27.0	27.0	27.0				27.0	
Jun 2007	Temp (°C)		30.00	30.00	31.00	31.0	30.0	30.0	25.0	25.0				
Jun 2005	Temp (°C)		30.00	30.00	32.00	31.0	31.0	31.0	32.0				30.0	
Sept 2005	Temp (°C)		29.00	28.00	29.00	28.0	29.0	28.0	29.0	29.0				
Dec 2005	Temp (°C)		28.00	28.00	28.00				28.0	28.0	28.0			
Dec 2006	Temp (°C)		27.00	28.00	27.00	27.0	27.0	28.0	28.0	28.0				
Mar 2007	Temp (°C)		29.00	29.00	29.00	29.0		29.0	29.0	29.0		29.0		
Aug 2003	pH			7.00		7		8.00	7	7		7		7
Jul 2004	pH		8.40	8.36	8.39			8.6		8.34				8.48
Dec 2004	pH		8.40	8.35	8.10	8.3	8.3	8.3					8.3	
Apr 2005	pH		8.40	8.35	8.10	8.3	8.3	8.3	8.3				8.3	
Jun 2005	pH		7.00	7.00	7.00	7.0	6.8	7.0	7.0				7.0	
Sept 2005	pH		8.40	8.36	8.32	8.3	8.4	8.3	8.4	8.3				
Dec 2005	pH		8.00	8.00	8.00				8.0	8.0	8.0			
Dec 2006	pH		8.20	8.26	8.17	8.4	8.3	8.3	8.3	8.2				
Jun 2007	pH		8.27	8.23	8.18	8.2	8.2	8.2	8.2	8.1				
Mar 2007	pH		8.30	8.20	8.20	8.4		8.3	8.4	8.2		8.2		
Aug 2003	Salinity			35.00		35		35	35	35		35		35
Jul 2004	Salinity		35.00	35.00	35.00			35		35				35
1998 (annual avg)	DO (mg/L)	1												
1998 (annual avg)	DO (mg/L)	25												
1998 (annual avg)	DO (mg/L)	50												
Feb 2000	DO (mg/L)	1						6.63						
Sept 2000	DO (mg/L)	10				6.41				6.83				
Nov 2000	DO (mg/L)	10				6.4				5.72				
Mar 2001	DO (mg/L)	10						6.02		7.45		5.26		
Jul 2001	DO (mg/L)	10								7.30				
Aug 2003	DO (mg/L)			6.36			6.26	6.52	6.77	5.70		6.11		4.57
Jul 2004	DO (mg/L)		13.19	12.00	7.24			9.5		8.73				12.6
Dec 2004	DO (mg/L)		6.54	6.24	6.41	6.59	6.2	6.3					5.0	
Apr 2005	DO (mg/L)		6.54	6.24	6.41	6.59	6.2	6.3	6.4				5.0	
Jun 2005	DO (mg/L)		6.22	6.29	6.31	6.01	6.5	6.6	6.1				6.0	
Sept 2005	DO (mg/L)		6.30	7.10	7.20	6.65	6.4	6.1	6.8	6.0				
Dec 2005	DO (mg/L)		5.66	6.37	6.59				6.2	5.6	6.0			
Dec 2006	DO (mg/L)		6.79	6.64	6.44	6.75	6.8	6.3	7.0	6.3				
Mar 2007	DO (mg/L)		6.79	6.64	6.44	6.75		6.3	7.0	6.3		6.8		
Jun 2007	DO (mg/L)		4.22	3.48	4.40	3.53	4.6	3.4	4.6	3.5				
1998 (annual avg)	Total Coliform (MPN/100mL)	1												
Dec 2004	Total Coliform (MPN/100mL)		7.00	2.00	2.00	2.00	2.00	2					80	
Apr 2005	Total Coliform (MPN/100mL)		7.00	2.00	2.00	2.00	2.00	2	2				80	

Stations															Water quality std DENR Class SC Water
Ambulong	Sta. Maria	Union Carbide	Coco Chem	FGPC	PSPC	AG&P	Purefoods	Sakamoto	Caltex	Matuko Pt.	JG Summit	BPC	Keppel	Bay (avg)	
		26.7	27.6	26.8	28		26.7	27.6	29.1	19.4	28	28.5			
		29.1	29.6	29.5			29.2		29.7						
28															
	27														
															3°C max.rise
															3°C max.rise
															3°C max.rise
															3°C max.rise
															3°C max.rise
7															
	8.47														
															6.5 - 8.5
															6.5 - 8.5
															6.5 - 8.5
															6.5 - 8.5
															6.5 - 8.5
35															
	35														
														6.78	
														6.39	
														6.07	
			6.45			6.91							6.84		
		6.80	6.38	6.44	6.62	5.98									
			5.09		5.31	5.72									
		6.61	7.03	7.3	6.25		6.43	7.02	7.01	6.48	6.35	7.02			
		6.61	7.03	7.45			6.43		7.01						
5.90															
	12.4														
															5 min.
															5 min.
															5 min.
															5 min.
															5 min.
														114.64	

Date	Parameters	Depth	Stations											
			Tabangao	Pinamukan	Simlong	Mabini	San Miguel	Bauan	Sta. Rita	Sta. Clara	San Pascual	Wawa	Pier	Mainaga
Jun 2005	Total Coliform (MPN/100mL)		80.00	900.00	30.00	13.00	2.2	2	2				130	
Sept 2005	Total Coliform (MPN/100mL)		23.00	23.00	23.00	500	23	240	4	240				
Dec 2005	Total Coliform (MPN/100mL)		500.00	900.00	900.00				300	500 170	300			
Mar 2007	Total Coliform (MPN/100mL)		110.00	23.00	110.00	70		23	50	16		130		
Jun 2007	Total Coliform (MPN/100mL)		1700.00	170.00	3000.00	2800	170	170	9000	000				
Dec 2004	Fecal Coliform (MPN/100mL)		4.00	0.00	0.00	0.00	0.0	2.0					30.0	
Apr 2005	Fecal Coliform (MPN/100mL)		4.00	0.00	0.00	0.00	0.0	2.0	0.0				30.0	
Jun 2005	Fecal Coliform (MPN/100mL)		4.00	300.00	2.00	13.00	<2.2	<2.2	<2.2				80.0	
Sept 2005	Fecal Coliform (MPN/100mL)		13.00	23.00	8.00	500	2	240	2	240				
Dec 2005	Fecal Coliform (MPN/100mL)		240.00	80.00	70.00				23	500	50			
Aug 2003	TSS (mg/L)			62.30			57.1	46.5	45.1	57.3		36.8		27.0
Jul 2004	TSS (mg/L)		38.40	63.00	46.00			32		47.4				35.2
Dec 2004	TSS (mg/L)		25.00	42.50	49.00	27.0	7.0	57					17	
Apr 2005	TSS (mg/L)		25.00	42.50	49.00	27.0	7.0	57	20				17	
Jun 2005	TSS (mg/L)		25.00	42.50	49.00	27.0	7.0	57	20				17	
Sept 2005	TSS (mg/L)		47.00	27.00	72.00	75.0	23.0	46	61	57				
Dec 2005	TSS (mg/L)		38.00	51.00	46.00				24	24	18			
Mar 2007	TSS (mg/L)		46.00	76.00	109.00	67		83	61	141		72		
Jun 2007	TSS (mg/L)		240.00	258.00	242.00	265	241	247	268	210				
1998 (annual avg)	Transparency (Secchi depth)													
Feb 2000	TSS (mg/L)							67.5						
Sept 2000	TSS (mg/L)	10				64.20				73.8				
Nov 2000	TSS (mg/L)	10				61.0				61.0				
Mar 2001	TSS (mg/L)	10						57.2		59.4		53.0		
Jul 2001	TSS (mg/L)	10								66.6				
Dec 2004	BOD (mg/L)		0.92	0.48	0.82	0.91	0.5	0.3					1.7	
Apr 2005	BOD (mg/L)		0.92	0.48	0.82	0.91	0.5	0.3	0.6				1.7	
Jun 2005	BOD (mg/L)		1.01	1.53	0.76	0.76	0.8	0.7	0.9				1.2	
Sept 2005	BOD (mg/L)		0.19	1.11	1.02	1.03	0.1	0.7	0.6	1.1				
Dec 2005	BOD (mg/L)		0.43	1.04	0.33				0.1	0.8	0.5			
Dec 2006	BOD (mg/L)		0.44	0.47	0.12	0.57	0.3	0.2	2.1	0.7				
Mar 2007	BOD (mg/L)		2.58	0.27	0.98	0.46		0.8	0.2	1.1		1.4		
1998 (annual avg)	NH3 (µM)	1												
1998 (annual avg)	NH3 (µM)	25												

Stations															Water quality std DENR Class SC Water
Ambulong	Sta. Maria	Union Carbide	Coco Chem	FGPC	PSPC	AG&P	Purefoods	Sakamoto	Caltex	Matuko Pt.	JG Summit	BPC	Keppel	Bay (avg)	
															5,000
															5,000
															5,000
															5,000
															5,000
															no standard value
															no standard value
															no standard value
67.9															
	36														
															not more than 30mg/L increase
															not more than 30mg/L increase
															not more than 30mg/L increase
															not more than 30mg/L increase
															not more than 30mg/L increase
			72.0			59.2							65.92	10.36	
		66.6	73.8	66.6	69.6										
			61.0												
		60.2	15.8	58.8	58.0		52.0	112.0	9.0	58.4	58.0	53.0			
		47.2	53.2	58.4			51.6		51.4						
															7(10)
															7(10)
															7(10)
															7(10)
														1.59	
														1.80	

Date	Parameters	Depth	Stations											
			Tabangao	Pinamukan	Simlong	Mabini	San Miguel	Bauan	Sta. Rita	Sta. Clara	San Pascual	Wawa	Pier	Mainaga
1998 (annual avg)	NH_3 (µM)	50												
Feb 2000	NH_3 (µM)	1						0.231						
Sept 2000	NH_3 (µM)	10				0.33				3.9				
Nov 2000	NH_3 (µM)	10				0.43				1.45				
Mar 2001	NH_3 (µM)	10						1.960		0.41		11.200		
Jul 2001	NH_3 (µM)	10								0.54				
Aug 2003	NH_3 (µM)			0.29			0.357	0.286	0.143	0.21428		0.143		0.286
1998 (annual avg)	NO_2(µM)	1												
1998 (annual avg)	NO_2 (µM)	25												
1998 (annual avg)	NO_2 (µM)	50												
Feb 2000	NO_2 (µM)	1						0.116						
Sept 2000	NO_2 (µM)	10				0.158				0.515				
Nov 2000	NO_2 (µM)	10				0.11				0.430				
Mar 2001	NO_2 (µM)	10						0.640		0.150		0.530		
Jul 2001	NO_2 (µM)	10								0.690				
Aug 2003	NO_2 (µM)			0.14			0.071	0.143	0.214	0.000		0.143		0.143
1998 (annual avg)	NO_3 (µM)	1												
1998 (annual avg)	NO_3 (µM)	25												
1998 (annual avg)	NO_3 (µM)	50												
1998 (annual avg)	PO_4 (µM)	1												
1998 (annual avg)	PO_4 (µM)	25												
1998 (annual avg)	PO_4 (µM)	50												
Feb 2000	PO_4 (µM)	1						0.327						
Sept 2000	PO_4 (µM)	10				0.183				1.879				
Nov 2000	PO_4 (µM)	10				0.4				1.540				
Aug 2003	PO_4 (µM)			0.06			0.032	0.226	0.194	0.387		14.613		0.129
Mar 2001	PO_4 (µM)	10						0.480		2.090		0.430		
Jul 2001	PO_4 (µM)	10								1.460				
1998 (annual avg)	Oil and grease (mg/L)	1												
Feb 2000	Oil and grease (mg/L)	1						0.00						
Sept 2000	Oil and grease (mg/L)	10				3.7				7.40				
Nov 2000	Oil and grease (mg/L)	10				0.01				0.01				
Mar 2001	Oil and grease (mg/L)	10						1.71		28.28		36.54		
Jul 2001	Oil and grease (mg/L)	10								30.20				
Aug 2003	Oil and grease (mg/L)			1.43			5.43	0.86	8.57	2.57		3.14		6.29
Jul 2004	Oil and grease (mg/L)		2.00	0.00	2.00			3.140		1.430				0.000
1998 (annual avg)	Chlorphyll (mg/m^3)	1												
		25												
		50												

Stations															Water quality std DENR Class SC Water
Ambulong	Sta. Maria	Union Carbide	Coco Chem	FGPC	PSPC	AG&P	Purefoods	Sakamoto	Caltex	Matuko Pt.	JG Summit	BPC	Keppel	Bay (avg)	
														1.92	
			0.366			0.129							0.129		
		0.250	0.620	0.540	0.330										
		1.190	2.650		0.610										
		0.620	1.790	1.910	1.830		0.330	0.860	0.540	0.330	0.370	0.130			
		0.770	0.640	0.590			0.630		0.540						
0.214															
														1.79	
														1.80	
														0.29	
			0.197			0.034							0.020		
		0.158	0.158	0.163	0.158										
		0.160	0.090		0.160										
		0.130	41.850	0.460	0.510		0.140	6.010	0.320	0.540	0.600	0.510			
		0.330	0.730	0.490			0.420		0.600						
0.214															
														0.86	
														0.50	
														2.92	
														0.66	
														0.29	
														0.32	
			0.237			0.357							0.375		
		0.043	0.105	0.074	0.183										
		0.490	0.640		0.330										
0.613															
		0.310	6.990	1.010	0.270		0.290	0.490	4.050	0.640	0.550	0.410			
		1.920	1.420	2.750			0.340		0.820						
														3.76	
			0.20			0.00							1.70		
			0.01		0.00	0.01									
		57.57	64.57	0.00	34.86		5.40	134.28	174.86	7.71	26.29	38.00			
		23.14	39.14	35.42			22.28		20.28						
1.86															
	1.430														
														0.96	
														0.88	
														0.65	