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# Planning across boundaries for the conservation of the Sulu-Sulawesi Marine Ecoregion

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## Abstract

The Sulu-Sulawesi Marine Ecoregion (SSME) is an outstanding ecoregion situated within the center of global marine biodiversity. Three countries—Indonesia, Malaysia and the Philippines—share, and directly benefit from, the rich resources of the SSME. The deterioration of environmental conditions in the ecoregion indicates that the resource extraction has exceeded the natural capacity of this marine ecosystem for recovery. Shared boundaries, ecosystem dynamics and resources, as well as transboundary environmental issues (including human migration) justify an ecoregion approach to conserve the SSME.

In 1999, the World Wide Fund (WWF) for Nature and its partners launched the SSME Conservation Program. The Program adopts a two-pronged approach: planning for the conservation of the SSME and the implementation of immediate conservation actions on the ground. The ecoregion planning process involves the formulation of a Biodiversity Vision—a 50-year conservation goal—and the development of a stakeholders' Ecoregion Conservation Plan (ECP) based on the ecoregion's Biodiversity Vision. Notable was a shift from a non-government organization-facilitated to a government-led planning process, and the establishment of interim governance mechanisms to ensure coordination in the development of the ECP. These interim mechanisms that operate within country and across countries during the planning phase of the SSME Program are perceived to evolve into formal institutional arrangements that are appropriate for the implementation of the ECP.

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## 1. Introduction

The Sulu-Sulawesi Marine Ecoregion (SSME) forms part of Southeast Asia, a region characterized by high level of inter-governmental cooperation where marine environmental protection, research and management are concerned [1,2]. Under the United Nations Environment Programme (UNEP) Regional Seas Programme, the Action Plan for the East Asian Seas (EAS) was developed and adopted in 1981 to initially cover the countries of Indonesia, Malaysia, Philippines, Singapore and Thailand [3]. While a Coordinating Body for the Seas of East Asia was formed and a trust fund was set up, few projects were undertaken, thus the Action Plan was only partially implemented.

In the 1990s, an increased global interest to develop large biogeographic areas as units for management emerged due to the recognition that critical processes that affect biodiversity and productivity operate over large scales [4]. Such biogeographic areas, in most cases, fall under the jurisdiction of two or more countries and thus require multi-country involvement. The large marine ecosystems (LMEs) approach is one of the regional initiatives that build on the intergovernmental cooperation that the UNEP Regional Seas Programme either developed or enhanced [5].

In the UNEP EAS Region, the South China Sea LME project—participated in by China, Cambodia, Indonesia, Malaysia, Philippines, Thailand, and Vietnam, and coordinated by an inter-ministerial Project Steering Committee—has completed a Transboundary Diagnostic Analysis (TDA) in 1999 [6] and is in the process of preparing a Strategic Action Programme under the International Waters Portfolio of the Global Environment Facility (GEF). As for the Sulu-Celebes LME, the boundaries were redefined to become what is now known as the Sulu-Sulawesi Marine Ecoregion or SSME [7]. In the SSME, an ecoregion conservation approach is implemented by Indonesia, Malaysia and the Philippines in partnership with the World Wide Fund (WWF), and with multi-stakeholder participation. This tri-national initiative has resulted in the development of an Ecoregion Conservation Plan for the SSME.

This paper provides an overview of the SSME and the ecoregion conservation approach and presents the process, results and mechanisms of a transboundary conservation planning in this ecoregion.

## 2. The Sulu-Sulawesi Marine Ecoregion

The SSME is an outstanding marine ecoregion shared by Indonesia, Malaysia, and the Philippines. It is an integral part of the global center of marine biodiversity, specifically located within the Coral Triangle, an area of highest coral and reef fish diversity in the world [8,9]. Within the SSME are rare, endangered, threatened and commercially valuable species, such as the gigantic whale shark, the coelacanth (believed to have been extinct millions of years ago), small and large tunas, a variety of reef and pelagic food fish, five of the world's seven species of sea turtles, migratory birds, the dugong, at least 22 species of dolphins and whales, and the proboscis monkey [10]. The SSME is characterized by a variety of habitats and productive coastal ecosystems—mangrove forests, extensive seagrass beds and coral reefs—as well as resource-rich soft-bottom and pelagic environments. Among the globally important areas are: the Tubbataha Reef National Marine Park and World Heritage Site (Philippines); the Tun Mustapha Park (Malaysia); the Turtle Islands Heritage Protected Area (Malaysia and the Philippines), and the

Derawan Islands (Indonesia), which are two major nesting sites in Southeast Asia for green turtles and hawksbills; and the Bunaken National Park (Indonesia), which is one of two coelacanth sites in the SSME.

The SSME is economically significant to Indonesia, Malaysia and the Philippines in terms of fisheries, tourism and navigation for trade and commerce, transportation and communication. It is a major source of live reef food fish [11] and produces an average annual production of 2.3 million tons (valued at US\$1 billion) in capture fisheries alone [12]. About 35 million inhabitants belonging to at least 50 indigenous cultural groups benefit directly from the resources of the SSME [13]. However, this ecoregion is in peril. The unsustainable use of resources has risen as a result of the increasing demands of a growing population and the international markets and changing patterns of consumption. The overall deterioration of environmental conditions in the SSME indicates that its capacity for natural recovery has been exceeded by the rate of resource use and destruction of habitats. The prevalence of unsustainable resource uses, poverty, and the continuous increase in human population can only result in a bleak future for both the people and environment of the SSME [14] unless management measures that can commensurately deal with the gravity of current and future threats are put in place.

An ecoregion approach to the conservation and sustainable development of the SSME is espoused, given that this ecoregion is characterized by shared boundaries, shared resources and transboundary environmental problems, which include threats to biodiversity of human migration at the borders [15,16]. The last one must not be overlooked in view of the direct link between population, consumption and the environment [17,18] and in recognition that environmental changes are major consequences of human activities. Ecoregion conservation provides the vehicle for Indonesia, Malaysia and the Philippines to view the SSME as a single ecological unit (and management should approach it as such) for which common goals, harmonized policies, orchestrated actions, and coordinating mechanisms must be jointly determined, agreed upon, and pursued to guard against a further decline in biodiversity and environmental degradation.

### 3. The ecoregion conservation approach

WWF launched the concept of “ecoregion approach” as a means to meet the conservation challenges of the 21st century, with an overall goal to conserve and restore the fullest possible range of biodiversity over large scales, in adherence to the fundamental goals of conservation [19]. Its analysis of the distribution of global biodiversity resulted in the identification of over 200 ecoregions—terrestrial, freshwater and marine—termed “Global 200”, which represents the earth’s biological wealth [20].

The SSME was selected as one of the priorities for the development of an ecoregion conservation program. Thus, in 1999 the WWF and its partners launched the SSME Conservation Program with a two-pronged goal: biodiversity conservation and development compatible with conservation. The Program adopted a two-pronged approach: planning for the conservation and sustainable development of the ecoregion and implementation of conservation actions directed to key sites and species.

The guideline for ecoregion conservation [21], appropriately modified to suit the conditions in the SSME (Fig. 1), involves the formulation of a Biodiversity Vision or a 50-year conservation goal. The vision is based on a biological assessment, which results in the identification of priority representative areas as well as broader areas that when conserved

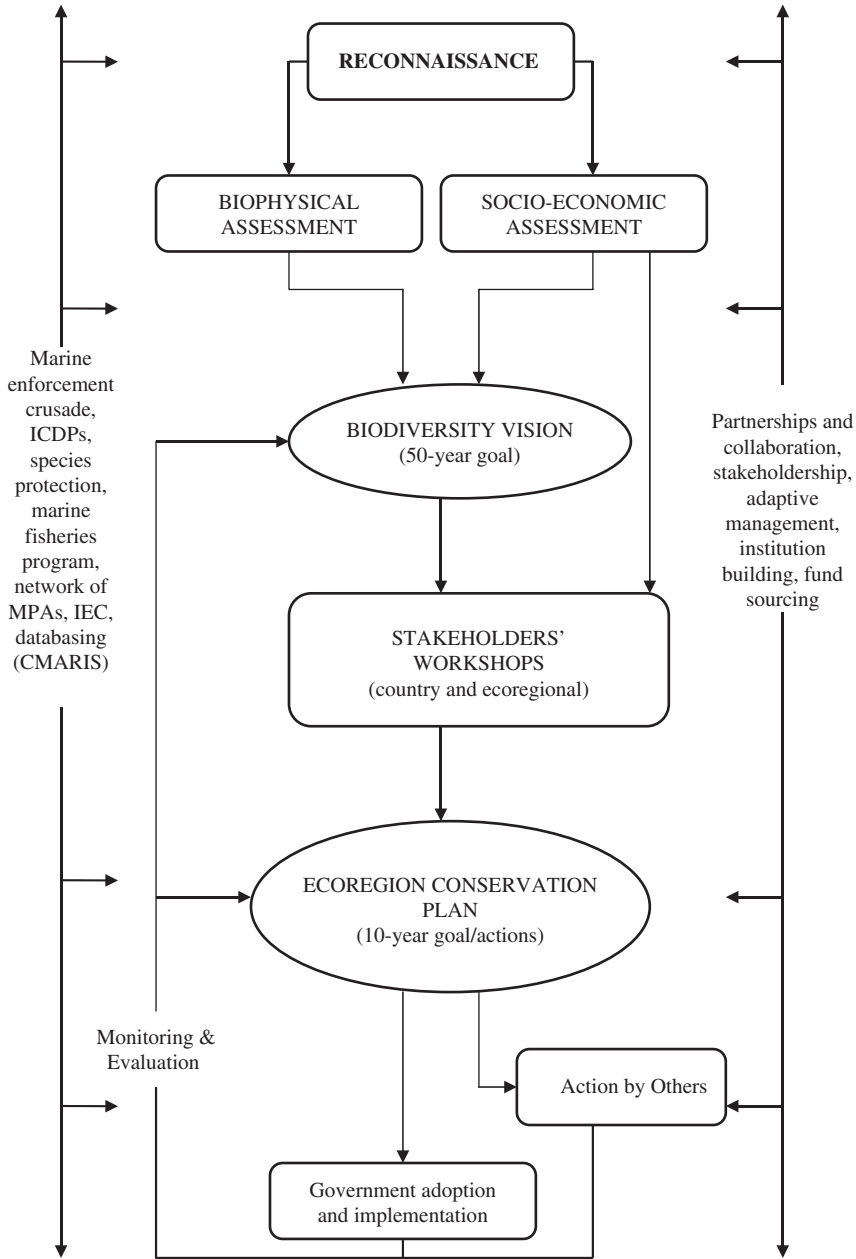


Fig. 1. Process of ecoregion conservation planning in the SSME (Modified from [21]).

will greatly contribute to the persistence of biodiversity, ecosystem dynamics, and ecological integrity of the ecoregion. The goals of the vision are translated into an Ecoregion Conservation Plan (ECP) as informed by the socioeconomic assessment. The ECP sets out the shorter-term conservation goals and identifies actions to achieve them.

Consideration of multiple disciplines, multi-stakeholder participation, and partnerships with key players during planning and in plan implementation is imperative in ecoregion conservation.

#### **4. Multi-stakeholder conservation planning for the SSME**

The Sulu-Sulawesi Marine Ecoregion Program recognizes that stakeholders are key to the success in the conservation of the ecoregion. Involvement of a broad range of interest groups facilitates the generation of innovative ideas on plausible approaches to an ecosystem-based multi-country marine initiative for which models are scant.

Stakeholders hold an understanding and knowledge of the resources gained through generations that can make them dedicated and effective guardians of resources. They have institutions, both formal and informal, that can provide the manpower requirements and mechanisms for the management of the conservation efforts. Thus, even if multi-stakeholder involvement in planning takes up more time, funds and other resources than are required by other procedures, the SSME Program exerted an effort to enable multi-country and multi-sectoral participation in the formulation of the vision and in the development of an ecoregion conservation plan.

##### *4.1. Formulation of a biodiversity vision*

The Biodiversity Vision for the SSME was formulated in March 2001, when over 70 biophysical and socioeconomic experts representing the academe, governments and non-governmental groups from the countries of the SSME, with some from Australia and the United States, came together for a workshop. The vision was formulated based on inputs from the country biophysical assessments that preceded the workshop, the expertise in various fields of marine science represented at the workshop, and the experts' knowledge derived from their work experiences in the SSME. The exercise resulted in the identification of 58 priority conservation areas (PCAs), which represented the biodiversity and natural processes in the SSME (Fig. 2) [22]. Briefly, the 50-year goal for the SSME is to maintain biodiversity and productivity through generations through the establishment of a network of conservation areas managed through partnerships and collaboration across boundaries [23,24].

While the vision is meant to guide the development of an ecoregion conservation plan, it was instrumental in moving stakeholders, and donor organizations, to immediately take action at the PCA level. More importantly, the vision inspired and motivated the governments to lead the development of the ecoregion conservation plan.

##### *4.2. Development of an ecoregion conservation plan (ECP)*

Guided by the Biodiversity Vision, the ECP was developed through 12 stakeholders' workshops (Fig. 3) [24]. Seven workshops generated the Philippine building blocks of the ECP: five were held in strategic locations in the Philippine part of the SSME; one was dedicated to the grassroots fisher groups; and the last was a national workshop, which integrated the inputs from the local stakeholders and incorporated those from national stakeholders. In Indonesia, two local workshops for the stakeholders of East Kalimantan and North Sulawesi, and a national workshop put together the country's contribution to

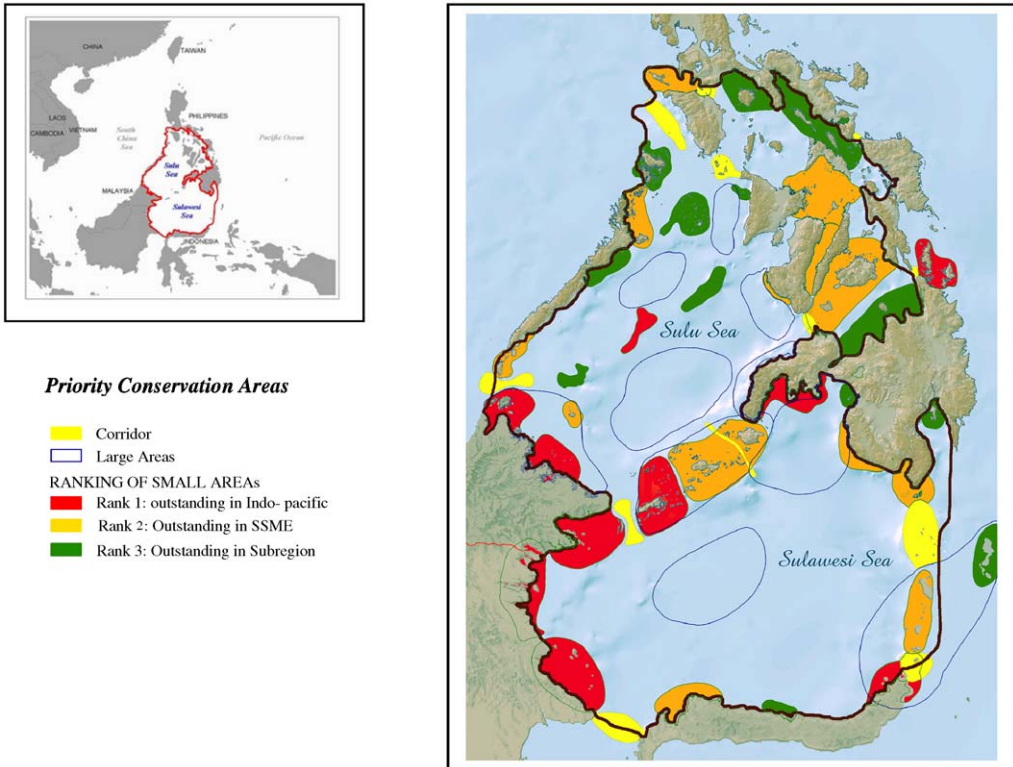


Fig. 2. Priority conservation areas in the SSME and the Biodiversity Vision.

the ECP. In the case of Malaysia, one workshop captured the inputs from the concerned stakeholders of the State of Sabah and the Federal Government. The 12th and final workshop held in June 2003 integrated the country action plans and an ecoregion-level action plan into a stakeholders' Ecoregion Conservation Plan [24].

The ECP for the SSME is goal-centered; the Vision is the goal. It identified 10 objectives and sets of actions to be undertaken by the countries, individually or jointly, in the next 10 yr as first steps towards the attainment of the Biodiversity Vision. The ECP reflects the depth of participation of various players; 153 stakeholder groups participated in providing inputs and writing the plan. The stakeholders own the plan and will implement it. The ECP has semblance of existing plans and priorities and is aligned to the international commitments of the countries of the SSME. Its implementation will help the countries meet their national and international commitments and provide opportunities to these countries to enhance their impacts in marine environmental management through collaborative efforts.

#### 4.3. Implementation of the ECP

To implement the ECP for SSME, the governments of Indonesia, Malaysia and the Philippines must adopt it. The ECP implementation will contribute towards the fulfillment of the countries' international commitments to implement the Convention on Biological

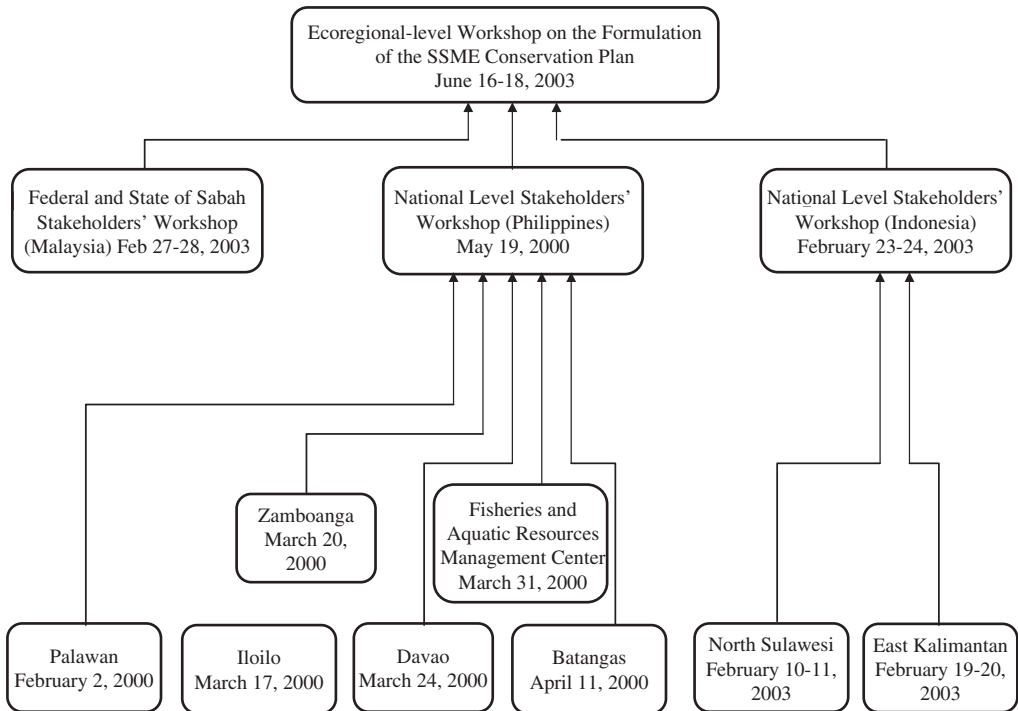


Fig. 3. Geographic flow of stakeholder planning process in the SSME.

Diversity (CBD) and the World Summit on Sustainable Development (WSSD). The ECP for SSME is aligned to the Sustainable Development Strategy for the Seas of East Asia [25], which was developed by the GEF/UNDP/IMO Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), and adopted by the 12 countries in the East Asian Seas region in December 2003, for the regional implementation of the requirements of WSSD for coasts and oceans.

A tri-national Preparatory Committee for SSME was formed following the completion of the ECP to work for the tri-national adoption of the ECP (see Section 6). While tri-national adoption is being worked on, other stakeholders will already be able to pick out parts of the plan that they can implement. For example, the WWF has drafted its Action Plan for the SSME based on the ECP and the organization's conservation agenda and priorities. This shall serve as the basis of WWF's actions in the SSME with its partners in the next 10 yrs. A monitoring and evaluation system must be established to determine how well the actions contribute to the realization of the vision and how well the ECP is being implemented. Such a system will also help provide some basis for adaptive management strategies.

## 5. Activities that supported ecoregion conservation planning

In the course of planning, the WWF and its partners implemented various initiatives that helped the planning process for the entire ecoregion, provided inputs to the ECP, or



set the stage for ECP implementation [26]. The numerous activities brought actions to specific issues or areas, not only to immediately protect key sites and species without waiting for the ECP to be developed and implemented but also as a strategy to keep stakeholders engaged in ecoregion conservation planning. Examples of the initiatives are provided below.

### 5.1. *Country-level initiatives*

- Marine enforcement implemented to protect key biodiversity sites—e.g. the Tubbataha Reefs National Marine Park and Apo Reef Natural Park in the Philippines and the Bunaken Marine Park in Indonesia;
- Integrated Conservation and Development Program supported in Quinluban Islands in Sulu Sea, Philippines;
- Species protection component supported the biodiversity research on sharks and rays, which resulted in, among others, the preparation of manuscripts for two species potentially new to science;
- Information, education and communication campaign implemented for local communities in Sabah, Malaysia in support of marine protected areas;
- Coastal and Marine Resource Information System (CMARIS) developed to store and organize SSME information in GIS format and relational databases of non-geocoded data and information.

### 5.2. *Ecoregion-level initiatives*

- Initiative on tri-national protection of sea turtles resulted in the formulation (by stakeholders) of a proposed Tri-National Sea Turtle Conservation Program for SSME. The proposed program is adopted by the Philippine National Action Plan in the ECP for SSME. The initiative has also been adopted as an activity of the Indian Ocean-Southeast Asia Conservation and Management of Marine Turtles and Habitats.
- A Fisheries Management component of the SSME Program has formulated with the stakeholders a Framework for Improved Fishery Management in the SSME. This activity has been recognized by the Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area trade body as one of its priority projects. A Detailed Implementation Plan (DIP) based on the framework has to be developed. Development of the DIP is part of the Ecoregion-level Action Plan in the ECP.
- Initiative on networking of marine protected areas (MPAs) based on biological connectivity formulated with MPA network experts a Framework for a Network of MPAs in the SSME [27]. Pilot-testing of the framework in priority PCAs is provided for in the Ecoregion-level Action Plan in the ECP.

## 6. **Governance of the SSME conservation initiative**

The governance of the tri-national conservation initiative for the SSME is still evolving. Informal but effectively functional governmental mechanisms were put in place for the purpose of ecoregion conservation planning. In the case of the WWF, mechanisms for coordinating SSME initiatives across National Offices (NOs) have been evolving since 1999. Since SSME conservation planning is carried out through government–non-

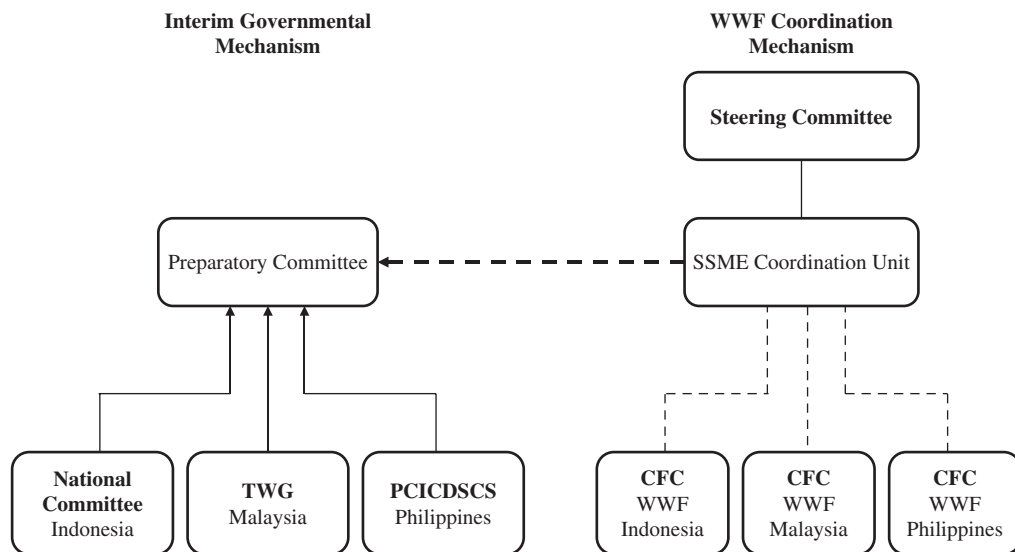


Fig. 4. Interim governance of the SSME tri-national initiative.

government organization (NGO) collaboration, it is important that the structure of the NGO coordinating mechanism appropriately blends with that of the government, interim or otherwise (Fig. 4).

### 6.1. Interim governmental mechanism

The Indonesian National Committee for SSME<sup>1</sup> and the Malaysian Technical Working Group for SSME Development Program<sup>2</sup> were formed in early 2003. The Philippine counterpart is the Presidential Commission for the Integrated Conservation and Development of the Sulu-Celebes Seas (PCICDSCS),<sup>3</sup> which was formally established through a Presidential Proclamation in 1997. The Department of Environment and Natural Resources is chair of the inter-agency commission. Commonly called the Technical Working Groups (TWGs), their general tasks are to refine respective country inputs to the ECP, work together to complete the ECP, and collaborate to have the ECP adopted and implemented.

<sup>1</sup>Head: Ministry of Marine Affairs and Fisheries. Members: Ministry of Environment; Ministry of Forestry; Ministry of Foreign Affairs; WWF—Indonesia.

<sup>2</sup>Chair: Department of Fisheries Sabah. Members: Ministry of Science, Technology and Environment; Ministry of Tourism, Culture and Environment; Sabah Parks; Sabah Wildlife Department; Fisheries Department Malaysia; Universiti Malaysia Sabah; Sabah Forestry Department; Sabah Drainage and Irrigation Department; Sabah Town and Regional Planning Department; WWF—Malaysia.

<sup>3</sup>Chair: Department of Environment and Natural Resources. Members: Department of Agriculture; Department of National Defense; Department of Interior and Local Government; Autonomous Region of Muslim Mindanao; Philippine Council for Aquatic and Marine Research and Development; Presidential Assistant for Mindanao Affairs (Office of the President); WWF-Philippines. Additional participating agency: Department of Foreign Affairs.

At the ecoregional level, the Preparatory Committee (PrepCom) for the SSME was formed following the completion of the tri-national workshop that integrated the country inputs into the ECP for SSME in June 2003. Members of the PrepCom were selected from among the members of the TWGs, WWF NOs included, as well as other government agencies whose engagement is necessary where international cooperation is involved. The tri-national PrepCom invited the WWF SSME Coordination Unit to serve as its secretariat. The role of the PrepCom is to work for the tri-national adoption of the ECP for the SSME and to undertake activities leading to its implementation.

## 6.2. WWF mechanism

A Steering Committee,<sup>4</sup> at the highest level, governs the WWF SSME Conservation Program. An SSME Coordination Unit (CU), headed by an Ecoregion Coordinator, serves as the secretariat of the SC and PrepCom. The CU develops the links between SSME and relevant international programs and coordinates the implementation of SSME initiatives in the three countries through the designated Country Focal Coordinators (CFCs) who, in turn, coordinate and ensure the implementation of these initiatives up to the level of project sites. The CFCs usually represent the WWF in the country TWGs.

## 7. Discussion/lessons learned in large-scale, multi-lateral conservation planning

Large-scale, multi-lateral conservation planning efforts resulted in a number of lessons learned.

1. Ecoregion conservation planning should involve stakeholders early on in the planning process and at all levels. Interim, though informal mechanisms work effectively if the most appropriate players are involved. Visionary, motivated, determined, creative and focused stakeholders, open and eager to try new approaches and exhibiting strong leadership qualities, make an impact in this undertaking.
2. The appreciation of the governments of the significance of, and the urgency for, large-scale conservation efforts in addressing the imbalance between human pressures on biological resources and the capacity of ecological systems for natural recovery is imperative. However, such appreciation must be coupled with an immense recognition of the governments that the ecoregion conservation initiative is highly relevant in meeting the needs of the people, improving state of biological resources, implementing national plans and priorities, and fulfilling obligations of the countries to international commitments. These are major considerations for governments to assume leadership and desire to take forward and institutionalize ecoregion conservation.
3. Ecoregion conservation is a technical-based initiative, thus the processes involved are politically neutral. The Biodiversity Vision, which is a biological vision, is the powerful driving force that inspires stakeholders and makes them work together effectively, in spite of their differences in political and cultural structures. Shared boundaries, shared resources and common fate are the common language thus veering away from the

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<sup>4</sup>Members: Chief Executive Officers (CEOs) of WWF Indonesia, Malaysia and Philippines and two donors (WWF—US is one). Chairmanship is rotated among the CEOs.

political issues of overlapping boundaries that usually deter multi-country initiative from advancing.

4. Central to the success of cooperation in the SSME is the prevalence of the Association of Southeast Asian Nations (ASEAN) spirit—building trust, deciding by consensus, exercising mutual respect among key players, and observing sensitivities—and the strong working relationships and friendships that have been established and cultivated under previously implemented regional programs.
5. The credibility of an NGO-partner is a significant factor for three governments to agree to a partnership in an ambitious and cutting-edge conservation program. The WWF has a strong presence in each of the countries of the SSME; has developed partnerships at the local, national, and international levels; and exhibited capability to realize great achievements in conservation.

## **8. Concluding remarks**

The conservation and sustainable development of the SSME is a direct responsibility of the countries that have jurisdiction over it. Given the significance of the SSME as an integral part of the center of marine biodiversity from where goods and services extend to the international community, however, its persistence is a global responsibility as well.

The uncertainties of the future are immense and the time to act big is now. While problems in the ASEAN region are politically complex, the countries of the SSME have exhibited high capability to handle politically complex issues and move the spotlight away from these in order to give emphasis to collaborative efforts in pursuit of a common goal as in the case of the tri-national initiative in the SSME.

The tri-national adoption of the Ecoregion Conservation Plan for the SSME through the ministerial signing of a Memorandum of Understanding (MOU) during a side event at the Seventh Conference of Parties to the Convention on Biological Diversity in February 2004 is a welcome development in the Seas of East Asia region as it is expected to attract the engagement of more players and to result in the expansion of the current government-NGO partnership in the SSME. The MOU provides for the formation of a tri-national committee for the SSME to provide the transboundary means of engagement in exchanging information, discussing issues, and making joint decisions during the implementation of the ECP. Once domestic requirements are satisfied, the countries can implement their respective National Action Plan for SSME and participate in the implementation of the Ecoregion-level Action Plan in the ECP. Given that such implementation will contribute to the fulfillment of the concerned countries of their commitments to CBD and WSSD, it is expected that the transboundary conservation initiative for SSME will strengthen political cooperation.

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