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Conserving the Sulu and Sulawesi Seas

- 
- One Vision, One Plan, Common Resources, Joint Management
 - Establishing Marine Protected Area Networks
 - Enforcement of Coastal and Marine Environmental Laws

Partnerships at Work

S. Adrian Ross
Editor

The Seas of East Asia consist of more than seven million square kilometers of sea area, bordered by 234,000 kilometers of coastline. The 8.6 million square kilometers of watershed area draining into these regional seas are governed by 13 coastal nations and 2 non-coastal nations; nations which are home to more than 1.8 billion people.

These basic parameters concerning the Seas of East Asia provide a meager glimpse of the complexities associated with managing a vast geographic sea area that is rich in shared historical, cultural, economic and ecological features, but, at the same time, spans countries with disparate sociopolitical and economic conditions and scientific and technical capacities. It is from this perspective that the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA), which was adopted in December 2003 with the signing of the Putrajaya Declaration, is regarded as a significant milestone in the journey to improving the governance of the East Asian Seas. For the first time in the history of the region, concerned countries agreed to a common management framework and platform for cooperation to collectively address natural and man-made transboundary threats to the sustainable development of their shared seas and common resources.

The SDS-SEA provides countries and their partners with practical guidance to coastal and ocean management, founded on the 30 to 40 years of experience at the national, subnational and subregional levels, as well as lessons and good practices from the global community. But the essence of the SDS-SEA is not simply the objectives and actions that are delineated in the document, but also recognition that the goal of sustainable development of marine and coastal resources entails a new paradigm in governance, that being a mechanism that promotes and facilitates government and nongovernment entities working in partnership in order to achieve their collective — as well as their respective individual — social, economic and ecological targets.

This innovative approach to coastal and ocean governance was formally endorsed by 11 Country Partners and 12 non-Country Partners with the signing of the Haikou Partnership Agreement for the Implementation of the Sustainable Development Strategy for the Seas of East Asia^{*}, in December 2006. Since the signing of the Haikou Partnership Agreement, the concept of coastal and ocean governance through partnership arrangements has been gaining momentum in the region. For example, in January 2007, Cambodia, Thailand and Vietnam signed a Framework Programme for Joint Oil Spill Preparedness, Response and Cooperation in the Gulf of Thailand, setting up subregional governance system for preventing and responding to oil spills from sea-based sources. Similarly, management mechanisms are also now being considered by countries for the implementation of Strategic Action Plans that have

been crafted under the GEF-supported South China Sea and Yellow Sea LME projects, as well as the emerging six-country Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security, a partnership of six countries (i.e., Indonesia, Malaysia, Papua New Guinea, Philippines, the Solomon Islands and Timor-Leste).

This issue of *Tropical Coasts* focuses on an LME within the Seas of East Asia, the Sulu and Sulawesi Seas, which is in the process of developing and implementing a tri-national partnership arrangement. The Sulu and Sulawesi Seas, also known as the Sulu-Celebes Sea, have been identified as a distinct LME, ecoregion, and seascape by the United States National Oceanic and Atmospheric Administration (US NOAA), World Wide Fund for Nature (WWF), and Conservation International (CI), respectively.

The sea area is flanked by three populous, developing nations — the Philippines, Indonesia and Malaysia. The subregion is inhabited by 35 million people and spans an area of nearly one million km². The seas are located within the East Indies Triangle or Coral Triangle, described as the global center of marine biodiversity. It is home to the Verde Island Passage, which in turn is regarded as the center of the center of marine shorefish biodiversity. The “center of the center” distinction is based on a study conducted by Carpenter and Springer in 2005. The study overlaid distribution maps of 2,983 individual species comprising of algae, corals, crustaceans, mollusks, fishes, marine reptiles and marine mammals. The outcome was confirmation that the highest species richness per unit area of 1,736 species within a 10 km x 10 km grid area was in the Verde Island Passage.

Stakeholders of the Sulu and Sulawesi Seas have been able to share information and jointly identify priority areas for conservation to achieve a common vision. They have crafted a plan known as the Ecoregion Conservation Plan (ECP) for the Sulu-Sulawesi Marine Ecosystem (SSME) and forged a tri-national management mechanism. The three countries, in partnership with local governments, communities, scientific and technical institutions, international NGOs, donors and the business sector, are now in the process of developing the required capacities to implement the ECP, including strengthening environmental law enforcement and exploring sustainable financing mechanisms geared to making the Sulu and Sulawesi Seas one of the most advanced marine ecoregion management initiatives among the East Asian seas.

This issue of *Tropical Coasts* is a joint effort of PEMSEA and Conservation International-Philippines, a non-Country Partner of PEMSEA, as well as contributions from the Tri-National Secretariat for the ECP, (i.e., Malaysia Department of Fisheries – Sabah). It features articles on the SSME covering the development of the ECP, the supporting management framework and governance arrangements, financing and partnerships mechanisms, and enforcement initiatives. A prognosis on future initiatives planned for this large marine ecosystem is also featured.

The ECP and SSME implementing mechanism provide insight into a number of innovative approaches to strengthening coastal and ocean governance, with the application of sound science and multisectoral partnerships. Furthermore, as a subregion of the Seas of East Asia, the potential contribution of the SSME to the objectives and targets of the SDS-SEA merit continuing support, knowledge sharing and interaction among PEMSEA and SSME partners and collaborators. Ultimately, it is envisaged that, by transferring experience, skills, resources and good practices across countries, subregions and projects, the common target of effective and sustainable management of marine and coastal resources, directly benefiting the people of region, will surely be within reach.

* Signatories to the Agreement include the Governments of Cambodia, PR China, DPR Korea, Indonesia, Japan, Lao PDR, Philippines, RO Korea, Singapore, Timor-Leste and Vietnam. From the initial 12 stakeholder organizations, there are now 16 non-Country Partners. These include Conservation International-Philippines (CI), Coastal Management Center (CMC), Intergovernmental Oceanographic Commission Subcommission for the Western Pacific (IOC/WESTPAC), International Ocean Institute (IOI), International Environmental Management of Enclosed Coastal Seas Center (EMECS), Korea Environment Institute (KEI), Korea Maritime Institute (KMI), Korea Ocean Research and Development Institute (KORDI), Northwest Pacific Action Plan (NOWPAP), Ocean Policy and Research Foundation (OPRF), Oil Spill Response and East Asia Response Limited (OSRL/EARL), Plymouth Marine Laboratory (PML), Swedish Environmental Secretariat for Asia (SENSA), UNDP/GEF Small Grants Programme (SGP), UNEP Global Programme of Action (UNEP/GPA) and UNDP/GEF Yellow Sea LME Project (YSLME).



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Tri-National Governance of the Sulu-Sulawesi Marine Ecoregion



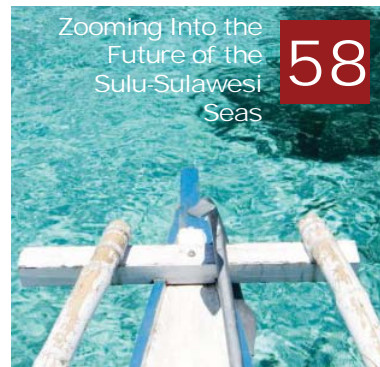
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Conservation International-Philippines

One Vision, One Plan, Common Resources, Joint Management

In 2001, Indonesia, Malaysia, and the Philippines formed a common 50-year vision for biodiversity and sustainable productivity in the large marine ecosystem (LME) (Miclat and Trono, 2002; and Stakeholders of the SSME, et al., 2004) called the Sulu-Sulawesi Seas¹ (SSS).

More than 70 marine scientists, socioeconomic experts, resource managers and policymakers from the three countries participated in the formulation of the vision for this marine ecosystem, which is characterized by overlapping boundaries, shared resources and marine life, and transboundary issues.

The vision consists of 58 priority conservation areas identified through overlaying locations of importance for mangroves and estuaries, marine plants, coral reefs, demersal fishes and invertebrates, pelagic fishes, and charismatic species such as sea turtles and marine mammals, among others. These 58 priority conservation areas represent the known range of biodiversity and ecological and evolutionary processes that maintain biodiversity in the Sulu-Sulawesi Seas

¹ Sulu-Celebes large marine ecosystem in the Global Environment Facility-International Waters (GEF-IW) portfolio; Sulu-Sulawesi Marine Ecoregion in the ratified tri-national Memorandum of Understanding.

² ECP or Ecoregion Conservation Plan for SSME is the official term used by the governments.

(Miclat, et al., 2006; and Stakeholders of the SSME, et al., 2004).

From the vision, an ecosystem-wide Conservation Plan for Sulu-Sulawesi Marine Ecoregion (SSME)² was developed through a participatory process. The consultation process entailed 12 workshops across the three countries and engaged the participation of 153 stakeholder organizations from the local and national levels. The SSME Plan consists of country action plans and an ecoregion-level action plan, all hinged on a set of 10 objectives and aligned to the national priorities of the countries and their commitments to common relevant international instruments and conventions (Stakeholders of the SSME, et al., 2004).

The Ecoregion Conservation Plan (ECP) plan aims to:

1. Establish management strategies and coordinated institutions for effective ecoregional conservation;
2. Establish a functional integrated network of priority conservation areas to ensure ecological integrity;
3. Develop sustainable livelihood systems that support marine and coastal conservation across the ecoregion;

The Vision for the Sulu-Sulawesi Seas

A marine ecoregion that remains to be globally unique and a centre of diversity with vibrant ecological integrity, including all species assemblages, communities, habitats and ecological processes.

A highly productive ecoregion that sustainably and equitably provides for the socioeconomic and cultural needs of the human communities dependent on it.

An ecoregion where biodiversity and productivity are sustained through the generations by participatory and collaborative management across all political and cultural boundaries.

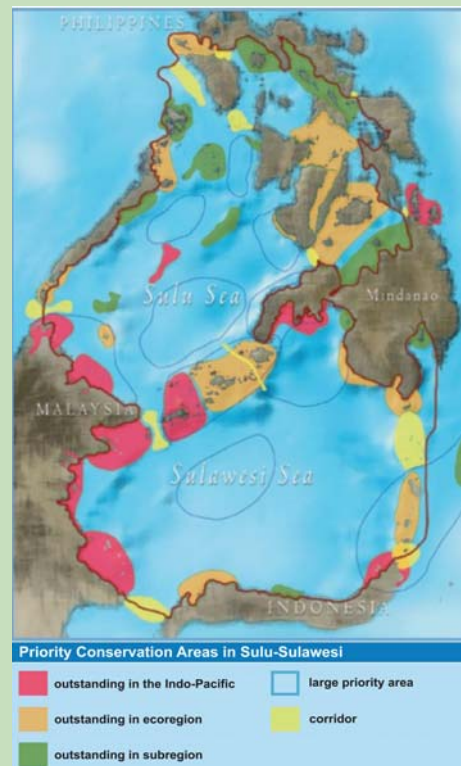
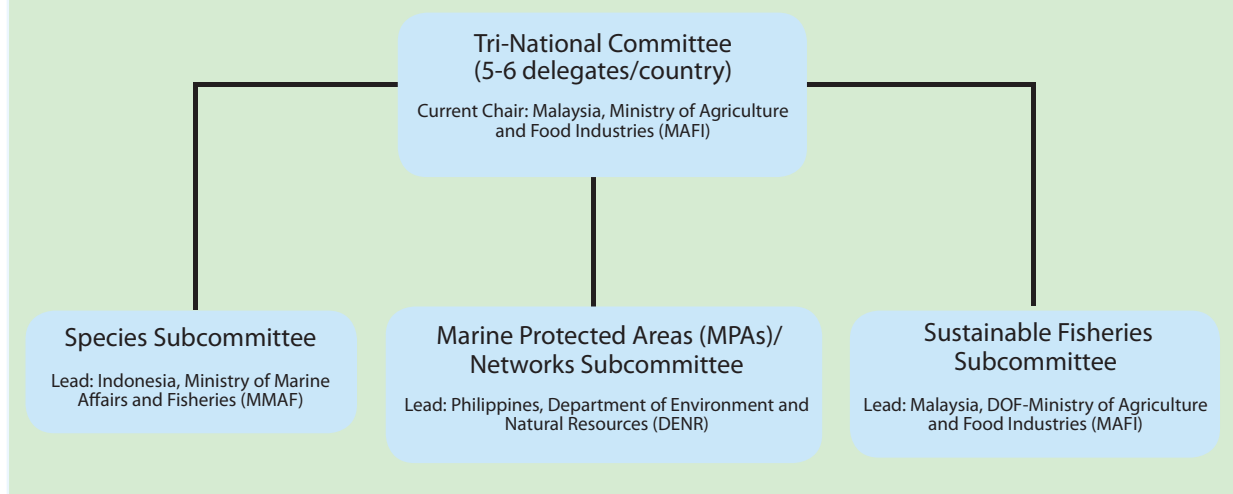


Image Source: WWF-Philippines.

Figure 1. Country-level governance and representation in the Tri-National Committee for Sulu-Sulawesi Marine Ecoregion.

Country-level governance:

- **Indonesia:** Technical Working Group and National Committee for SSME [Ministry of Marine Affairs and Fisheries (MMAF) - Lead and Head of Delegation, Ministry of Environment, Ministry of Forestry, Ministry of Foreign Affairs, World Wide Fund for Nature]
- **Malaysia:** Technical Working Group for SSME [Department of Fisheries (DOF)-Sabah, Ministry of Agriculture and Food Industries (MAFI) - Lead and Head of Delegation, Ministry of Environment, Ministry of Tourism and Culture, Sabah Parks, Sabah Wildlife Department, Fisheries Department-Malaysia, University of Malaysia Sabah, Sabah Forestry Department, World Wide Fund for Nature]
- **Philippines:** Philippine Presidential Commission for the Integrated Conservation and Development of Sulu-Celebes Seas or PCSCDSCS [Department of Environment and Natural Resources (DENR) - Lead and Head of Delegation, Department of Agriculture-Bureau of Fisheries and Aquatic Resources, Autonomous Region of Muslim Mindanao, Philippine Council for Aquatic and Marine Research and Development (PCAMRD), Presidential Adviser on Mindanao Affairs, World Wide Fund for Nature, Conservation International, Department of Foreign Affairs]



4. Shape economic development compatible with biodiversity conservation;
5. Enhance understanding of biodiversity resources and factors affecting them to form a basis for management decisions;
6. Develop communication, education and outreach programmes and strategies to motivate people to take conservation action;
7. Develop sustainable financing mechanisms to support the cost of conservation and resource management;
8. Build and enhance the capacity of

- stakeholders to effectively manage the conservation of the SSME;
9. Implement coordinated protection of threatened marine species to ensure maintenance of viable populations and protection of critical habitats; and
10. Improve coastal, oceanic and other types of fisheries resource conditions and management by developing a framework strategy, institutions and appropriate interventions.

Intergovernmental Coordination Mechanisms

In Sulu-Sulawesi Seas, the formulation of a vision was a technical

exercise while the development of the conservation plan was a political process. The latter then required the establishment of inter-governmental mechanisms that would set the tone for the establishment of a formal tri-national management body.

The case of Sulu-Sulawesi Seas showed three stages in the formation of a tri-national governance. The first one covered the period January-June 2003 when interim mechanisms were put in place within each country and across countries to ensure coordinated development of the ECP. Lead agencies from the Indonesian National Committee for SSME, the Malaysian Technical Working Group for SSME Development Programme, and the Philippine Presidential Commission

for the Integrated Conservation and Development of Sulu-Celebes Seas served as members for a Tri-National Technical Working Group (TWG) for the SSME. These mechanisms were responsible for the completion of the ECP development in June 2003.

The second stage started with the termination of the Tri-National TWG and the formation of another interim intergovernmental mechanism, called the Preparatory Committee (PrepCom) for SSME. The Prep-Com, which included the original members of the Tri-National TWG as well as other government and NGO representatives from the respective countries, was seen as an appropriate mechanism for facilitating the adoption of the ECP among the SSME countries. During its term (June 2003 to February 2006), the Prep-Com was able to facilitate the adoption of the ECP, the ratification of the tri-national MOU on the adoption of the ECP, and the formation of a tri-national governance mechanism.

On 13 February 2004, Ministers representing each of the countries signed a tri-national Memorandum of Understanding adopting the ECP and providing for the formation of a tri-national governance arrangement for the implementation of the ECP. (*Editor's note: The MOU is featured in page 34.*) The Preparatory Committee continued to facilitate the ratification of the tri-national MOU in each of the SSME countries. The Government of Malaysia ratified the MOU in January 2005, the Philippine Government in June 2005, and the Indonesian Government in February 2006. The MOU will remain in effect until 23 February 2016. The last meeting of the PrepCom drafted the terms of reference of the Tri-National Committee for SSME on 29 February 2006. The Tri-National Committee for the SSME was formally established on 1 March 2006. This was the final stage in the formation of the SSME governance arrangement.

Box 1. Subcommittee on the Endangered, Charismatic and Migratory Species (Marine Turtle).*

Goal: To provide technical advice and recommendations to improve the policies on the protection and management of endangered, charismatic and migratory species and their habitats in order to maintain the full range of biodiversity and provide for the long-term socioeconomic and cultural needs of human communities in the SSME.

Objective 1: Develop technical advice and recommendations on marine turtle management and protection in nesting, feeding and developmental habitats.

Objective 2: Develop technical advice and recommendations on marine turtle management and protection through overfishing or as by-catch in specific fisheries or fishing gear types.

Objective 3: Develop technical advice and recommendations on specific features/criteria in MPA design and MPA-network design in relation to the protection and management of marine turtles in SSME waters.

Objective 4: Disseminate information generated from country reports and other relevant sources and promote the implementation of the best practices for, and successes/learnings in, marine turtle population and habitat conservation and management in the SSME.

* The Subcommittee shall work on Marine Turtles, Napoleon Wrasse, Cetaceans and Elasmobranchs. For the period 2007-2009, it will be concentrating on marine turtles.

Over the course of the following two years and five months, the Tri-National Committee for the SSME met on three occasions. Major outcomes of these three meetings have been:

1. The finalization of the Terms of Reference of the Tri-National Committee;
2. The establishment of three technical/scientific subcommittees to respond to major issues in the SSME, namely:
 - a. Sustainable Fisheries

Subcommittee: fisheries, aquaculture, living aquatic resources use, trade and livelihood systems;

- b. MPAs and Networks
Subcommittee: identification, establishment and management of MPAs, including caves and wetlands; and
- c. Endangered, Charismatic and Migratory Species
Subcommittee: protection and management of endangered,

Box 2. Subcommittee on Marine Protected Areas and Networks.

Goal: Conservation and sustainable management of biodiversity in the Sulu-Sulawesi Marine Ecoregion through the establishment and effective management of MPAs and Networks.

Objective 1: Support the effective management of existing and new MPAs and networks and to maintain the full range of sustainable marine resources and provide the long-term socioeconomic and cultural needs of human communities in the SSME.

Objective 2: Support the establishment of new MPAs and Networks in the context of ecosystem-based management.

charismatic and migratory species; and

3. The organization of a work program for the subcommittees (Boxes 1-3).

Challenges and opportunities in transboundary governance building

In view of the many divisive issues that normally characterize transboundary semi-enclosed seas where national boundaries overlap and resources are shared, governance building in Sulu-Sulawesi Seas is challenging. The formation of the Tri-national Committee for SSME in the midst of complex political, social, cultural and economic issues mirrors the emphasis that the Governments of Malaysia, Indonesia, and the Philippines place on oneness: one Vision, one Plan, common set of resources, common fate, and joint management (Miclat, 2004).

Certain political activities internal to the countries may slow down governance building. For example, the 2004 election in Indonesia warranted special attention of the government and the citizenry since it was the first direct presidential election in the country. In the same year, the Malaysian Government had a reorganization, which included dividing the responsibilities of the Ministry of Science, Technology and Environment (MOSTE) between two agencies, namely the Ministry of Science, Technology and Innovation, and the Ministry of Natural Resources and Environment. MOSTE had been a major stakeholder in the development of the SSME on behalf of the Government of Malaysia.

Similarly, in 2004, presidential, legislative and local elections were held in the Philippines.

Box 3. Subcommittee on Sustainable Fisheries.

Objective 1: Promote regeneration, rehabilitation and restoration of degraded coastal wetlands including abandoned shrimp farms, degraded coastal wetlands, degraded forest reserves and other coastal areas.

Objective 2: Determine the status and issues of IUU fishing along the borders of SSME and implement joint and parallel monitoring, controlling and surveillance to effectively address cross-border IUU fishing.

Objective 3: Develop and implement a common communication strategy to increase public awareness on the issues and threats to sustainable fisheries and its implementation, aquaculture, and living aquatic resources exploitation and trade.

Objective 4: Develop joint pilot projects in establishing experimental farms for the culture of high-value seaweed species other than *Kappaphycus* and *Euचेuma* species, and the establishment of integrated multi-species (e.g., mollusks, sea cucumbers, siganids, and other invertebrates) seaweed farms; jointly develop and share improved quality seed stocks for seaweed farms; implement and adopt Best Management Practice (BMP) among aquaculture smallholders; and rehabilitate abandoned shrimp farms for other sustainable aquaculture uses.

Objective 5: Conduct joint and parallel population studies on shared fish stocks specifically on tunas and other highly migratory species as well as small pelagics; share information on existing legislation and policies on the management of tuna and small pelagics; implement joint and parallel research on the artificial propagation of high value species for aquaculture as an alternative to wild catch; share information and data on shared fish stocks and aquaculture research; implement collaborative oceanographic surveys in the SSME.

Objective 6: Collect and collate baseline information on groupers, humphead wrasse, other Live Reef Fish Trade (LRFT) species as well as marine ornamentals; study cross-border trade of groupers, humphead wrasse and other LRFT species as well as marine ornamentals; exchange information of each country's policies and legislation on LRFT; work towards the voluntary adoption by traders of a proposed Code of Practice and for sustainable LRFT; conduct an in-depth study on the chain of custody in LRFT to generate a basis for more effective policies.

Objective 7: Assess the status of turtle predation in seaweed farms in the three countries.

Objective 8: Assess and formulate policy on the incidence of turtles as by-catch in capture fisheries (longline, trawl nets, gill nets, lift nets).

Objective 9: Collaborate to develop a harmonized fisheries management regime for tunas and small pelagics (sardines, mackerel, round scads, anchovies etc).

Objective 10: Conduct an assessment for the needs of HRD to address gaps in capabilities for effective sustainable fisheries management; develop and implement capacity-building programs based on the needs identified in the assessment mentioned above; organize reciprocal programs among the three countries for capacity building where the host country will train stakeholders from the other two countries in their respective fields of expertise and strengths as it relates to sustainable fisheries, aquaculture, living aquatic resources exploitation, trade and livelihood systems.

Objective 11: Find ways and means to raise internal and external funds to implement the programs and projects identified under the Subcommittee on Sustainable Fisheries including from international conservation organizations.

A reorganization in the Cabinet resulted in the designation of a new Secretary to the Department of Environment and Natural Resources (DENR), the lead agency in the country for the SSME.

These changes resulted in a cumulative effect, slowing down of the ratification of the MOU in each country and the subsequent delay in the formation of the Tri-National Committee. Nonetheless, the ability of the countries to move forward with the SSME process, in spite of interruptions, is evidence of the spirit of cooperation which has been built around the Sulu-Sulawesi tri-national initiative.

The role of the nongovernmental organizations in SSME governance building is noteworthy. The World Wide Fund for Nature (WWF), through its SSME Programme, played a critical role in the formation of the Tri-National Committee in 2006. The WWF SSME Directorate/Coordination Unit, served as the secretariat of the Preparatory Committee for SSME. Conservation International (CI), on the other hand, has played a major supporting role to strengthen the Tri-National Committee since its formation. CI also significantly and actively contributed to the implementation of the ECP through the implementation of its Sulu-Sulawesi Seascape Project, in partnership with the SSME countries (See **Box 4**). The purposeful role of NGOs is demonstrated by the membership of CI and WWF in the Tri-National Committee and its subcommittees.

³ Brunei Darussalam-Indonesia-Malaysia-Philippines-East ASEAN Growth Area or BIMP-EAGA

⁴ Partnerships in Environmental Management for the Seas of East Asia

⁵ Association of Southeast Asian Nations

Box 4. Partnerships across political boundaries for global biodiversity.

In 2005, the Sulu-Sulawesi Seascape (SSS) Project was launched by Conservation International (CI) to protect critical species and habitats in the marine biodiversity conservation corridors of Verde Passage, Cagayan Ridge, Balabac Strait and the Tri-National Sea Turtle Corridor, through partnership with major stakeholders in Indonesia, Malaysia and the Philippines.

Using marine protected area (MPA) as the basic conservation and resource management tool, work in the SSS Project involves strengthening existing MPAs, establishment of new sites, and designing scientifically-based networks of MPAs. The SSS Project also involves implementation of conservation interventions, including law enforcement enhancement, capacity building of stakeholders, sustainable financing, policy review and formulation, and necessary information, education and communications (IEC) activities in the marine biodiversity conservation corridors. Parallel to these are seascape-wide development of strategies for law enforcement, capacity enhancement, IEC, private sector engagement and policy formulations related to fisheries, oil and gas, and ecotourism.

These interventions are geared towards a desired long-term outcome of conserving the full range of biodiversity in the Sulu-Sulawesi Seascape. They are coupled with research through a consortium of partners to provide a scientific basis for conservation and management and the implementation of sustainable strategies in critical marine corridors. The CI-SSS Project contributes to the implementation of the Ecoregion Conservation Plan (ECP) for Sulu-Sulawesi Seas. The project is hinged on the tri-national vision of biodiversity conservation and sustainable development through partnerships across political boundaries. The project enables direct participation in forming and strengthening the governance for the seascape through CI's membership in the Tri-National Committee of the ECP and in its three subcommittees.

Source: CI-Philippines, 2007.

While the Tri-National Committee welcomes NGO representation and participation, it must be emphasized that governments expect NGOs to observe and remain respectful of protocols for intergovernmental meetings and cooperation mechanisms that the SSME upholds. The Tri-National Committee is a new mechanism for regional seas governance and thus has new requirements for capacity building and networking. It is important to reiterate the need for the committee to link to the structure of a higher, politically stable body (Lejano, 2006).

Regional programmes and bodies such as the BIMP-EAGA³, PEMSEA⁴, ASEAN⁵, have noted with interest the progress made by the Sulu-Sulawesi tri-national initiative. The Coral Triangle Initiative (CTI), which is a partnership

of six countries (Indonesia, Malaysia, Philippines, Papua New Guinea, the Solomon Islands and Timor-Leste), sees the case of SSME as a model in seascape development. A fully functional Tri-National Committee can effectively implement the ECP and can be an important vehicle in enhancing the implementation of regional and international instruments and conventions for conservation and sustainable development in the seas of East Asia through the Sustainable Development Strategy for the Seas of East Asia or SDS-SEA (PEMSEA, 2003), Convention on Biological Diversity (CBD), and Chapter 17 of Agenda 21, UNCED (1992).

New Opportunities

Wherein existing bilateral and multilateral platforms in the region

may not have had sufficient time to focus on biodiversity and fisheries concerns specific to Sulu-Sulawesi Seas, the Tri-National Committee opens up new opportunities to discuss and address such matters, including for example:

- a. The protection of the sea turtles beyond what the Philippine-Malaysia Joint Management Committee for the Turtle Islands Heritage Protected Area can address;
- b. A sea turtle corridor that encompasses northeastern Sabah, Malaysia, the Turtle Islands (jointly owned by Malaysia and Philippines), and Eastern Kalimantan, Indonesia, where major nesting populations of green and hawksbill turtles in Southeast Asia are located;
- c. Possibilities for transborder enforcement to address illegal wildlife trade and illegal, unreported and unregulated (IUU) fishing; and
- d. Pursuit of joint projects, such as the development of the GEF-International Waters (IW) project on the Sulu-Celebes Sea Large Marine Ecosystem and Adjacent Area Sustainable Fisheries Management Project under the CTI Programme for Small Pelagic Fisheries.

The Tri-National Committee also has the potential to serve as a vehicle to elevate SSME issues and accomplishments to broader platforms and to generate support for ECP implementation in the ASEAN Working Group on Nature Conservation and Biodiversity, the ASEAN Working Group on Coastal and Marine Environment, and the ASEAN Senior Officials for the Environment (which recognized the Tri-National initiative

in 2004); and the Natural Resource Development Cluster of BIMP-EAGA (which endorsed in its December 2007 meeting the proposal to develop a Sulu-Sulawesi small pelagics management project for submission to GEF).

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By Sulu-Sulawesi Marine Ecoregion Tri-National Secretariat in Malaysia (Department of Fisheries-Sabah)

Tri-National Governance of the Sulu-Sulawesi Marine Ecoregion

The 13th of February 2004 marks a significant event for Indonesia, Malaysia and the Philippines. The date marks the signing of the Memorandum of Understanding (MOU) between the three countries on the adoption of the Ecoregion Conservation Plan (ECP) for the Sulu-Sulawesi Marine Ecoregion (SSME).

The signing of the MOU led to the creation of the Tri-National

Committee on the SSME, composed of representatives of the designated national authorities of all three countries, which facilitates conservation efforts. The Committee serves as a forum to coordinate and harmonize the implementation of the ECP and likewise reviews, updates and revises the ECP when necessary. The Committee also initiates, maintains and provides the mechanisms for consultation between

the parties on the development and the implementation of conservation initiatives outside the scope of the ECP.

The First Meeting of the Tri-National Committee elected a Chair with tenure of one year, after which subsequent Chairs are automatically designated on a rotational basis in alphabetical order: Indonesia, Malaysia, Philippines, with a tenure of two years. The Chair oversees all aspects of the work programs of the Committee and the Subcommittees.

The Tri-National Committee is composed of a maximum of five members from each country. However, the host country is allowed one additional delegate. The heads of the delegations of the respective countries are senior officials.

The Secretariat of the Tri-National Committee is also rotated with the Chairmanship. The incumbent Chair and the incoming Chair ensure the smooth transition of the Secretariat's work.

The first meeting of the Tri-National Committee was convened in Balikpapan, Indonesia, in 2006. During the Meeting, the Committee



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formed three (3) subcommittees and the Task Group on the Directory of Experts. The three subcommittees were: the Subcommittee on Threatened, Charismatic and Migratory Species; the Subcommittee on Sustainable Fisheries; and the Subcommittee on Marine Protected Areas and Networks.

It was agreed that each country shall lead one subcommittee for a two-year period. The Republic of Indonesia holds the position as the focal point of the Subcommittee on Threatened, Charismatic and Migratory Species, while the Malaysian and Philippine governments lead the Subcommittee on Sustainable Fisheries and the Subcommittee on Marine Protected Areas and Networks, respectively. All subcommittees are represented by members from all three countries.

Every year, the Tri-National Committee convenes and discusses the achievements, progress and lessons learned from the work programs of each Subcommittee and Task Group. All activities reflect and address the ECP as well as the Terms of Reference (TOR) and work plans of each Subcommittee.

At the recent Tri-National Committee Meeting in Manila, Philippines, on 14 June 2008, work progress and gaps were discussed and identified. Among the issues raised was the need for strengthening marine and coastal resources management programs, including improvements in conservation management through capacity building of stakeholders, and the development of regulations to effectively implement, raise awareness and strengthen enforcement. Such initiatives are designed to beef up efforts in addressing illegal,



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unregulated and unreported (IUU) fishing activities.

The Subcommittee spearheading marine protected areas (MPA) conservation recommended coordination of activities and studies with the other subcommittees, e.g., collaborative fisheries management for shared stocks as well as species protection and control of flagship species. This may involve in-depth studies of fisheries as well as sustainable aquaculture resulting in the development of guidelines for more efficient and effective resource management in the region.

The same meeting also unanimously agreed on the establishment and maintenance of lines of communication as well as the promotion of collaboration with other relevant regional initiatives such as the Brunei Darussalam, Indonesia, Malaysia, the Philippines-East ASEAN Growth Area (BIMP-EAGA),

Bismarck-Solomon Seas Ecoregion (BSSE), Melanesian Spearhead Group (MSG), Arafura-Timor Seas Experts Forum (ATSEF), and the Coral Triangle Initiative (CTI). Parallel to this, a resolution calling for a clarification between the Sulu-Sulawesi Marine Ecoregion (SSME) Tri-National Committee and the CTI secretariat for programmatic consolidation was signed. It was noted that the First Senior Officials' Meeting (SOM 1) for the CTI, held in Bali, Indonesia, last December 2007, declared that programs and projects to be implemented under the six-country initiative should be based and built on existing and relevant forums, agreements and programs. This was articulated in the following Guiding Principles: that CTI should use existing and future forums to promote implementation; that CTI should be aligned with international and regional commitments; and that CTI should emphasize priority geographies.

By Sheila Vergara, Rina Maria P. Rosales, Miledel Quibilan, Nancy Ibuna, Hubert Froyalde, Rochelle Villanueva, and William Azucena

Partnerships at Work in the Seas of Sulu and Sulawesi

Many partnerships have been born. Others have worked. Some are still trying.

Biodiversity conservation of the Sulu-Sulawesi Seas (SSS) requires the coordination of complex interrelationships among diverse stakeholders across sectoral and geo-political boundaries. Like the vast waters of the SSS that mediate complex interactions among diverse marine organisms, partnerships in this large marine ecosystem, which spans nearly a million square kilometers of the Philippines, Malaysia and Indonesia, have resulted in many lessons.

Building an alliance of partners

An alliance of partners to implement the Sulu-Sulawesi Seascape (SSS) Initiative's detailed implementation plan has been engaged* and mobilized by Conservation International (CI). The alliance included government and nongovernmental organizations (NGOs), academic institutions, and experts at the local, national and regional levels. Engaged as co-implementers through grant agreements or operating with their own resources, partners implemented projects consistent with the SSS conservation campaign.

In the process of developing partnerships, a series of multisectoral planning workshops were conducted to identify marine conservation concerns in the Verde Island Passage, Cagayan Ridge, Balabac Strait, and the Sea Turtle Conservation Corridor that originates south of Balabac and span the east of Sabah and East Kalimantan, Indonesia. In addition, a seascape-wide consultation and communication strategy development workshop was organized, which resulted in the identification of various needs-based interventions, the preparation of perception maps (**Figures 1-5** present various perception maps for the Verde Island Passage), and the allocation of roles, responsibilities, funding and expertise among partners to match each identified need. Convergence meetings provided venues for project partners and stakeholders to present, exchange and validate information on

threats, species conservation concerns and locate marine protected areas based on collected scientific information. These meetings also served as mid-project assessments and allowed for necessary changes in implementation strategies.

The Seascape Congress organized in June 2007 was an opportunity for stakeholders and project implementers to share results and lessons learned and plan the future of the Sulu-Sulawesi Seascape. The Congress was participated in by 119 partners and stakeholders representing national and local governments, academic, nongovernmental, community and private organizations, and marine conservation alliances. The Congress contributed to the Verde Passage Framework Plan, as well as plans for the Cagayan Ridge, Balabac Strait and the Sea Turtle conservation corridor.

* The term "engaged" used in this article refers to formal engagements such as a grant agreement, Memorandum of Understanding, Memorandum of Agreement, service contract, consultancy contract, and thesis grant, consistent with CI's process of engaging partners.

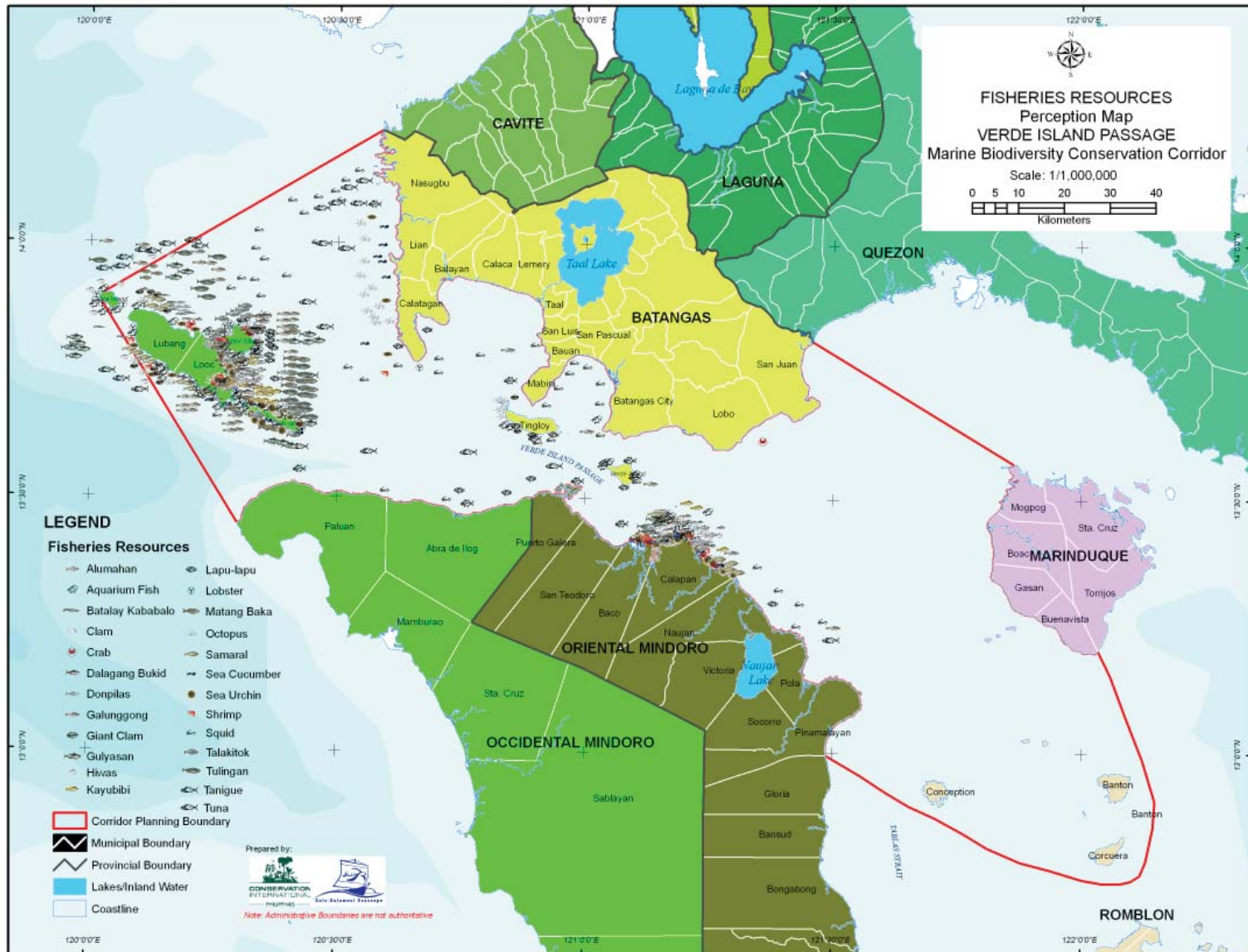


Figure 1. Fisheries Perception Map of the Verde Island Passage Marine Biodiversity Conservation Corridor.

In summary, through partner engagements, 37 grants to 32 institutions totaling US\$1,443,808.46 were shared with partners through the SSS initiative. The external grants portfolio was managed by CI-Philippines' Fundraising and Grant Management Unit with technical oversight from the SSS programme staff and the Finance Unit. The various modes and levels of engagement required an in depth knowledge of the capabilities of

prospective partners to undertake and contribute to the plan, a knowledgeable and committed staff and in-house facility to manage both programmatic and financial deliverables of each partner-grantee.

Partnerships in Governance

The Tubbataha Protected Area Management Board (TPAMB) is an interagency and multi-

sectoral forum, which collectively reviewed and provided input to the Tubbataha Reefs Natural Park Bill. The bill aims to ensure the protection and conservation of the park's reefs through sustainable and participatory management.

Indicators of the strength of a partnership approach in the Sulu-Sulawesi also include the technical and logistical support provided to the *Bantay Dagat* (Seawatch) for surveillance, monitoring



Figure 2. Marine Habitat Perception Map for the Verde Island Passage MBCC.

and enforcement of laws and regulations. The Municipality of Tingloy in Batangas was able to improve apprehension rates of fishers using compressors and spear guns as well as divers who refuse to pay for diving passes. Other illegal activities such as “muro-ami” fishing were also deterred.

At the regional level, the Tri-National Committee for the Sulu-Sulawesi Marine Ecoregion, with

the support of CI-Philippines, facilitated the development of the GEF-UNDP Sulu-Celebes Sea Large Marine Ecosystem and Adjacent Area Sustainable Fisheries Management Project, proposed under the GEF Coral Triangle Initiative Program. The project, which has potential funding for three years, was endorsed by the Governments of Indonesia and the Philippines and has been cleared by the GEF Secretariat.

Partnerships with the Private Sector

First Gas, First Philippine Conservation, Inc. and CI have forged a partnership that is implementing initiatives on Verde Island, Tingloy and Apo Reef. In addition, workshops entitled, “Engaging the Private Sector in Marine Conservation: Developing Partnerships” have been organized to raise the awareness of conservation

practitioners on trends and interests in corporate social responsibility (CSR) portfolios. These workshops opened opportunities for scientists and businesses to discuss strategies in support of marine conservation. With the private and business sectors, collaborative strategies were identified to optimize investments in conservation programmes for the marine environment (CI-Philippines, 2007).

Capacity-building Partnerships

To achieve a common understanding on the needs of marine conservation throughout the seascape, a seascape-wide capacity-building campaign for local partners and future implementers of the SSS conservation campaign was initiated.

Based on an assessment of training needs, 20 training courses were designed and attended by 1,049 staff, partners and stakeholders (**Table 1**). Topics included strengthening capabilities on ICM, coastal governance and enforcement, responsible information collection and management, and species-specific management.

The Philippine Council for Aquatic and Marine Research and Development conducted an integrated coastal management (ICM) Training for participants from three provincial and nine municipal/city governments of Batangas, Oriental Mindoro and Palawan. It also conducted a training on Sustainable Fisheries Management in the Context of the Code of Conduct for Responsible Fisheries (SFM-CCRF) for fisheries managers from provincial and municipal/city governments of Batangas and Oriental Mindoro. The latter training

Table 1. List of training courses and number of attendees

Title of Course	No. of attendees
Tri-National Training Workshop on Marine Sea Turtle Biology and Conservation	33
Marine Mammal and Turtle Stranding Rescue Training	33
Assessment of the Seaweed Resources and Farming as Livelihood in the Balabac Marine Biodiversity Conservation Corridor and the Potential for Seaweed Farming Development of Adjacent Areas	25
IUCN Red List Training	32
Integrated Coastal Management Training Course in the Verde Passage	29
Environmental Governance Training	416
Law Enforcement Trainings for local stakeholders in the Balabac Strait Corridor (1)	46
Law Enforcement Trainings for local stakeholders in the Balabac Strait Corridor (2)	82
Paralegal and Deputy Fish Warden Training for Police Environment Desk Officer (PEDO) of Batangas Province and Oriental Mindoro	49
Sustainable Fisheries Management in the Context of the Code of Conduct for Responsible Fisheries	24
Socioeconomic Monitoring – Southeast Asia Training Course (SocMon 1)	30
Socioeconomic Monitoring: Data Analysis Training (SocMon 2)	19
Microsoft Access (database) Training	21
Basic Fishery Law Enforcement Training for Batangas Baywatch Network	26
Advance Fishery Law Enforcement Training	36
Paralegal Training for Bantay Dagat Members of Calapan, Oriental Mindoro	48
Marine Mammal and Sea Turtle Stranding Rescue Training for Verde Island Passage MBCC	26
Local Facilitators' Training-Workshop for Cagayancillo	14
Total (as of July 2008)	1,049

used participatory approaches and case methodology in discussing scenarios and issues on the state of the fisheries resources, sustainable fisheries management, national and local adaptation of CCRF in the Philippines, and integration of sustainable fisheries management into ICM.

Tanggol Kalikasan (Defense of Nature), in partnership with the Batangas State University conducted several Environmental

Governance training workshops for municipalities in Batangas Province for over 400 trainees. *Tanggol Kalikasan* also provided municipal staff, village chairpersons, navy, coast guard, and police in Balabac with an orientation on Philippine environmental laws and proper procedures for boarding boats and arresting violators. A second enforcement training for fisher volunteers deputized to arrest violators of environmental laws was conducted in Balabac. An

impact evaluation was undertaken by Haribon Foundation to determine the effectiveness of the ICM and governance trainings. Similar trainings in law enforcement were also conducted for Batangas and Mindoro.

The Marine Research Foundation, Malaysia, facilitated a tri-national sea turtle training for participants from the Philippines, Indonesia and Malaysia on marine turtle biology, ecology, value, research



Figure 3. Issues and Threats Perception Map for the Verde Island Passage MBCC.

Partnership Map of the Sulu-Sulawesi Seascape Initiative.

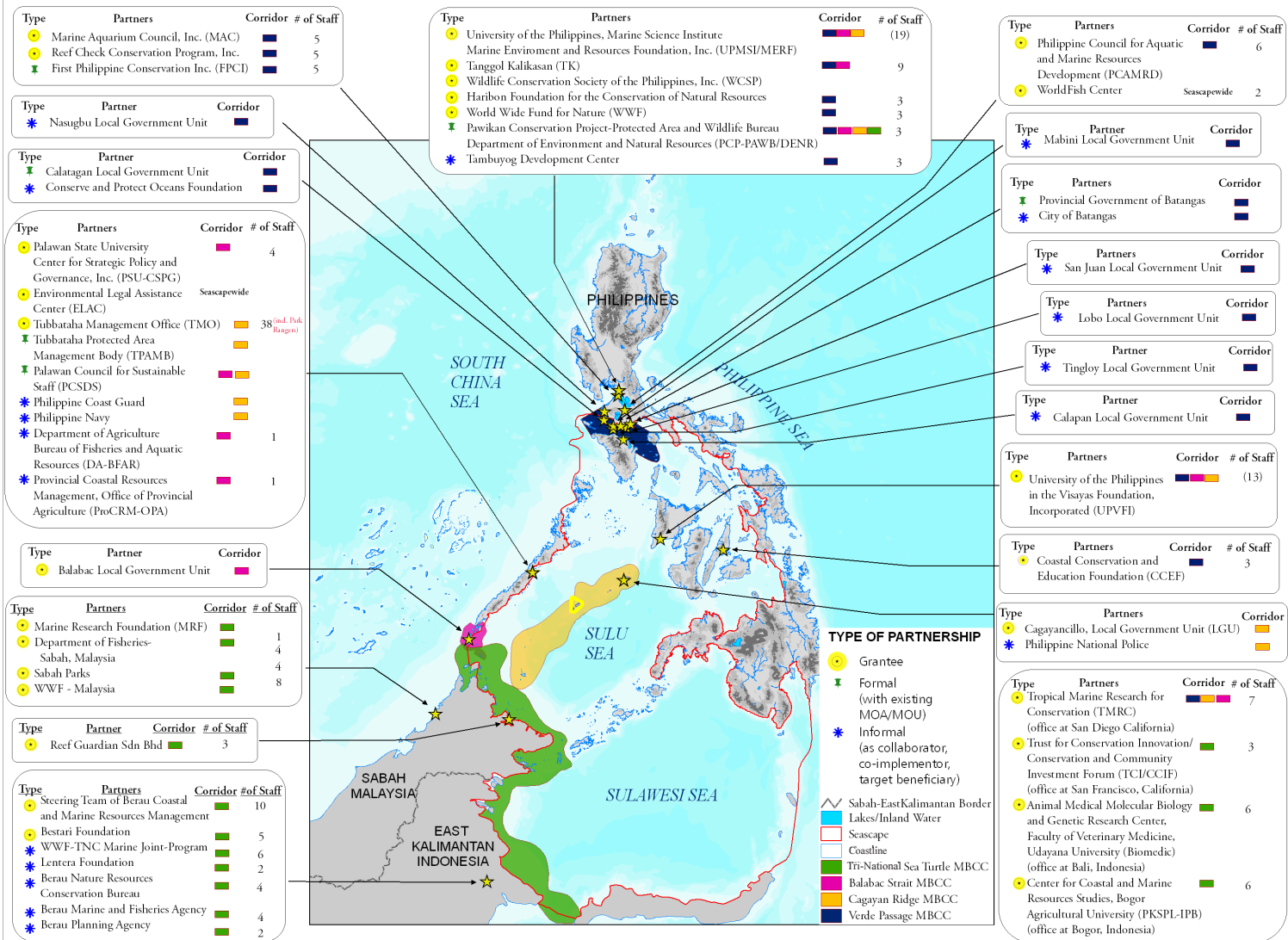


Image Source: Conservation International-Philippines

methods, legislation, conservation and management, and practical interventions. Priorities for management action and a general framework for a network of protected areas for sea turtles within the SSS were identified. The Tubbataha Management Office organized a marine mammal and turtle stranding rescue training workshop which focused on the conservation of marine mammals and turtles, data collection and

handling techniques during stranding. A similar training was likewise conducted for Verde Island partners. The University of the Philippines-Marine Science Institute (UP-MSI) conducted a training-workshop on farming and seaweed biodiversity (taxonomy) in Balabac for local stakeholders.

A training on socioeconomic monitoring for coastal management was conducted for participants from

Palawan in cooperation with the City Government of Puerto Princesa, Palawan Council for Sustainable Development, the Palawan State University with support from the US National Oceanic and Atmospheric Administration. A follow-up training on data analysis was also conducted.

Learning the Lessons

The Sulu-Sulawesi Seascape Programme (SSS) has expanded the

Working Together for the Verde Island Passage

Consider this: a nongovernmental organization with a track record of 20 years promoting global biodiversity and a private company operating three power plants. What could be the tie that binds them? Marine conservation.

The NGO was Conservation International (CI), which has identified land and sea areas in the Philippines as biodiversity hotspots. The private company was the First Gen Corporation (First Gen) of the Lopez of Companies, which had acquired the only legislative franchise in the Philippines to own, construct, install and operate a natural gas transmission and distribution pipeline in the island of Luzon. Both CI and First Gen envision to make conservation a part of the lives of communities and as a way to protect the environment.

One of the biodiversity hotspots in the Philippines is the Verde Island Passage, which traverses between the provinces of Batangas, Mindoro Occidental and Mindoro Oriental. This hotspot is considered to be the center of marine biodiversity in the world. It is rich in marine life, yet it is also a busy thoroughfare of commercial and industrial vessels, fishing boats and tourist ships, which pose a threat to a very high density of diverse species.

The conservation of Verde Passage is one of CI-Philippines' biggest projects. As part of its corporate social responsibility, First Gen, which operates two natural gas power plants in Batangas, wanted to be proactive in marine conservation but lacked the scientific capacity and experience.

Forging the Partnership

In February 1999, First Gen and CI-Philippines established the First Philippine Conservation, Inc. (FPCI) with a mission to undertake environmental conservation in the country. First Gen provides the main source of funds for FPCI, which can also receive monetary or similar donations from other companies/organizations. CI-Philippines provides technical support and guidance to FPCI, specifically on biodiversity conservation of the Verde Passage.

Through FPCI, funds were made available for the conservation of the Verde Passage. Some PhP50 million (US\$1 million) were allocated for the project for a span of five years to implement a Coastal Resources Management (CRM) Programme, the main strategy of conservation for Verde Passage. CI-Philippines ensured the project's supervision and technical guidance. FPCI made a long-term commitment and agreed to extend its work beyond the Sulu-Sulawesi Seascape Project.

Beyond the Formalities at Board Meetings

Before Mr. Federico Lopez took the helm of FPCI, he was chief operating officer of First Gen. He was also a student of scuba diving, a hobby that gave him a closer look at the gems of the sea. With the regular dives, he developed a keen interest in marine life and soon became a diving buddy of Mr. Romeo Trono, the country representative of CI-Philippines.

Lopez's business vision began to take the color of the blue seas while Trono's advocacy of conserving the depths of the Sulu-Sulawesi Seascape

with business enterprises continued to become a passion.

Making a Mark

An ecosystem-based protection programme of the Verde Passage covering the four provinces of Batangas, Mindoro Oriental, Mindoro Occidental, and Marinduque is the biggest project of FPCI.

The exhaustive work of the programme encompassed activities ranging from raising awareness of the people in the areas, introducing environmental management to local government units, completing scientific studies crucial to identifying priority areas for marine preservation like oceanographic and larval dispersal studies and surveys on marine habitat and threatened species. Through these efforts, CI estimates that the marine protected area coverage in the Verde Passage could be realistically increased in the short-term by 15 percent or a coverage of up to 693 ha.

The signing of Executive Order No. 578 was one significant accomplishment of FPCI together with CI-Philippines, First Gen, the local communities and the government. The Executive Order (EO) was a national policy on biological diversity for national implementation. Signed on 8 November 2006 by President Gloria M. Arroyo, the EO specifically targeted the conservation of the SSS with a focus on the Verde Island Passage. The EO paved the way for the creation of an ad hoc task force to prepare the Verde Island Passage Framework Plan, which aims to improve biodiversity management of more than 1.14 million ha of the coastal and marine areas of Verde Passage.

Efforts paid off. A Memorandum of Agreement set up a marine protected area network among eight municipalities and one city in Batangas province. The network will facilitate the sharing of experiences, knowledge and skills; facilitate conflict resolution and complement law enforcement; and coordinate operations against illegal and destructive fishing methods.

The gains of the partnership have been extended to other areas. FPCI supports the "hotspots" approach of CI-Philippines in conserving the remaining old-growth forests and the highest number of threatened species in the Sierra Madre mountain range and in Palawan. FPCI also engaged in a project with the Critical Ecosystems Partnership Fund (CEPF) to help save hectares of threatened habitats and species in Mindanao.

Creating Ripples

First Gen began developing a regular programme for its employees to take paid leaves of absences for doing coastal resource management (CRM) work for Verde Passage. Beyond being a donor, First Gen proactively encouraged its employees to take part in conservation efforts. The programme was welcomed by the employees, who have regarded themselves as stakeholders in conserving Verde Passage.

The FPCI experience clearly exhibits that public-private partnerships can succeed. It is moving to engage other business entities and NGOs to be united in conserving the seas, oceans, forests, and species. It is engaging governments to put in and implement conservation policies, and setting up business models with corporations willing to be key players in protecting the environment.



Figure 4. Marine Threatened Species Perception Map for the Verde Island Passage MBCC.

partner-base of the area. But what lessons have been learned in this process? After the first three years of implementing the SSS, some of these lessons include:

1. **Stakeholder assessment is critical in identifying the mode of partner engagement particular to a specific situation.** Working under the premise that not all partnerships are the same, stakeholder assessment is

an integral step in partner engagement. Establishing clear objectives or conservation targets is essential. Stakeholder mapping assesses the different players in a given area as well as available manpower or expertise. For the SSS, formal partnership engagements are made through Memorandum of Understanding/ Agreement (MOU/MOA) or grant agreements. Informal partnerships are likewise

promoted to support formal arrangements.

2. **Integration meetings serve as effective feedback mechanisms that promote interaction among partners and provide direction to project implementation.** Convergence meetings held in each corridor enabled exchanges among stakeholders and project implementers, served as mid-term project

evaluations and allowed for necessary adjustments in implementation strategies.

The Sulu-Sulawesi Seascape Congress held towards the end of the project's Phase 1 provided a venue to share project results, lessons learned and plans for the next phase of conservation interventions. The convergence meetings and SSS Congress allowed partners and

other stakeholders to look at the bigger picture and see how their respective outputs feed into the overall goal of the SSS, thus strengthening the holistic approach in implementing conservation actions in the seascape. Complemented with site visits and regular communication with partners, these formal meetings became an integral part of project monitoring and evaluation.

3. Local government units (LGUs) are critical public sector partners for on-the-ground conservation and natural resources management efforts. Conservation projects implemented by different sectors have identified the LGUs as the most critical public sector partner for on-site interventions. The SSS experience showed that LGUs were granted significant



Figure 5. Marine Resource Use Perception Map for the Verde Island Passage MBCC.

authority over a broad range of issues through the Local Government Code of 1991 and other policy instruments. The last five years saw an increased commitment and investment in natural resource management by LGUs. These partnerships, though short-term and co-terminus with the SSS, were able to build long-term results, i.e., strengthened local capacity and an enabling environment. Like other government agencies, limited resources and different views regarding the balance between conservation priorities and development remain one of the major challenges facing conservation work in the country and in the region.

4. Partnering with private corporations that have corporate social responsibility portfolios is a major future resource for expanding stakeholder support base and fund source for both species and habitat conservation initiatives. Local, provincial and national governments are limited by annual allocations which are inadequate to support planned activities, leaving meager funds for actual conservation needs. NGOs may have resources at certain periods but do not have the mandate to lead local and national conservation objectives. Private corporations as drivers of local, national or regional economies are resources for sustainable coastal and marine conservation.



Training on Integrated Coastal Management for Local Government Units (of Verde Passage and Palawan), held in Batangas City on 16-27 October 2006.

Their participation is crucial in changing industry practices towards more marine environment-friendly practices as well as supporting marine conservation action at all levels.

5. Matched funds and fund leveraging from partners serve as catalyst in establishing ownership and outcomes achieved by the SSS. Of the US\$1,526,068.02 total grants awarded in Indonesia, Malaysia and the Philippines, grantees were able to provide match funding of US\$408,776.40 in implementing the different activities under the SSS external grants portfolio. Leveraged funds amounted to US\$124,000 at the end of project implementation. The amount shows that partners value the conservation of the Sulu-Sulawesi Seascape and have taken the initiative to provide counterpart funding, and leverage additional resources to achieve maximum

impact. Matched funds and fund leveraging are essential in grant-making and prove that partners have a sense of ownership on the achievements of the project and help ensure that results are being utilized to pursue conservation goals for the Sulu-Sulawesi Seascape Project beyond the project's duration.

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By Miledel Christine C. Quibilan, Ruth Grace R. Ambal and Sheila G. Vergara
Conservation International-Philippines

Evolving Processes in Developing Site Conservation Targets

How can networks of globally important biodiversity sites be safeguarded?

Site conservation is one of the most effective means to reduce global diversity loss. Identifying and prioritizing sites where biodiversity must be conserved immediately, is a basic and necessary step to focus resources to revert the declining trends.

Marine protected areas (MPAs) figure prominently in marine conservation work. MPAs are often proxies that ultimately aim to safeguard species by protecting their habitats.

MPAs are defined by the International Union for the Conservation of Nature (IUCN) as “any area of the intertidal or subtidal terrain together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment.”

In order to identify relevant sites for conservation, a process similar to the steps outlined below¹ (CI, 2008)

is followed:

1. Compilation of a list of species that could potentially trigger **Key Biodiversity Areas** (KBAs) within the region. This list includes: (a) species that are currently recognized on the IUCN **Red List of Threatened Species** as globally threatened; (b) species that possess highly restricted ranges; (c) species that congregate in high densities; and (d) species that qualify using IUCN criteria as globally threatened but have not yet been assessed for listing;
2. Compilation of existing data on population sizes of species that could potentially trigger KBAs, and mapping of the localities at which they occur;
3. In consultation with the **Global Marine Species Assessment**, initiation of the IUCN Red List process for species that qualify using Red List criteria as globally threatened but have not yet been assessed for listing;
4. Identification of **vagrant**

¹ Definitions of key terms used in the steps:

Key Biodiversity Areas (KBAs) – “sites of global significance for biodiversity conservation. They are identified using globally standard criteria and thresholds, based on the needs of biodiversity requiring safeguards at the site scale. These criteria are based on the framework of vulnerability and irreplaceability widely used in systematic conservation planning” (Langhammer, et al., 2007).

IUCN Red List of Threatened Species – is the most widely accepted standard for information on extinction risk and conservation status of species (More information at www.iucnredlist.org).

Global Marine Species Assessment – is a project that aims to conduct the first global review of the risk of extinction for every marine vertebrate species, plants and selected invertebrates—approximately 20,000 marine species—using the IUCN Red List Categories and Criteria.

Vagrant – “a taxon that is currently found only very occasionally within the boundaries of a region, a region that would therefore only have a very small share of the global population” (Gärdenfors, et al., 2001).



threatened species that should be excluded from the KBA process;

5. Application of thresholds to populations of each trigger species to identify KBA sites;
6. As resources allow, undertaking directed surveys of candidate KBAs where trigger species are suspected to occur or population size is unknown;
7. Delineation of KBA boundaries by overlaying locations of non-vagrant threatened species and populations of other species that could trigger KBAs with available maps describing management units;

8. As resources allow, identification and taking appropriate actions to safeguard KBAs and populations of trigger species within KBAs; and
9. Documentation of data used and all steps undertaken during the KBA identification and delineation processes. Information is then published.

The following sections describe the processes involved in the identification and prioritization of site conservation targets at the ecoregion/seascape scale and how it was refined at the national level (i.e., Philippines) using the Key Biodiversity Areas (KBA) approach.

Sulu-Sulawesi Marine Ecoregion Priority-setting

The identification of priority conservation areas (PCAs) in the Sulu-Sulawesi Marine Ecoregion followed a process similar to that previously described, but identified a set of groups of species (taxa) or habitats, which are representative of the range of biological diversity in the Ecoregion: i.e., mangroves and estuaries; marine plants; coral reefs; demersal fishes and invertebrates; pelagic fishes; and charismatic species such as marine mammals. The process used locations of groups of species or habitats, which experts deemed

important, considering the lack of detailed information at the species level such as population sizes. Expert rankings of the importance of particular sites were used in place of threshold populations.

In March 2001, maps of these important areas for each taxa were overlaid to identify areas of frequent overlap or areas of special importance to a particular taxa (Stakeholders of the SSME, et al., 2004). Corridors linking the different biogeographic regions were identified as priorities for conservation. These were established as priority conservation areas (PCAs) for the marine ecoregion and included in the Ecoregion Conservation Plan (ECP), which was adopted by the governments of Indonesia, Malaysia and the Philippines.

While the PCAs are not expected to be fully-protected, these are to be managed and zoned with fully-protected areas. They address fisheries and threatened species concerns (e.g., marine turtles; dugongs; whalesharks, etc.) since these taxa were among those considered in the selection of PCAs. More detailed planning and zoning work, however, is needed within each PCA.

Philippine Priorities

The Philippines is one of the 17 megadiversity countries in the

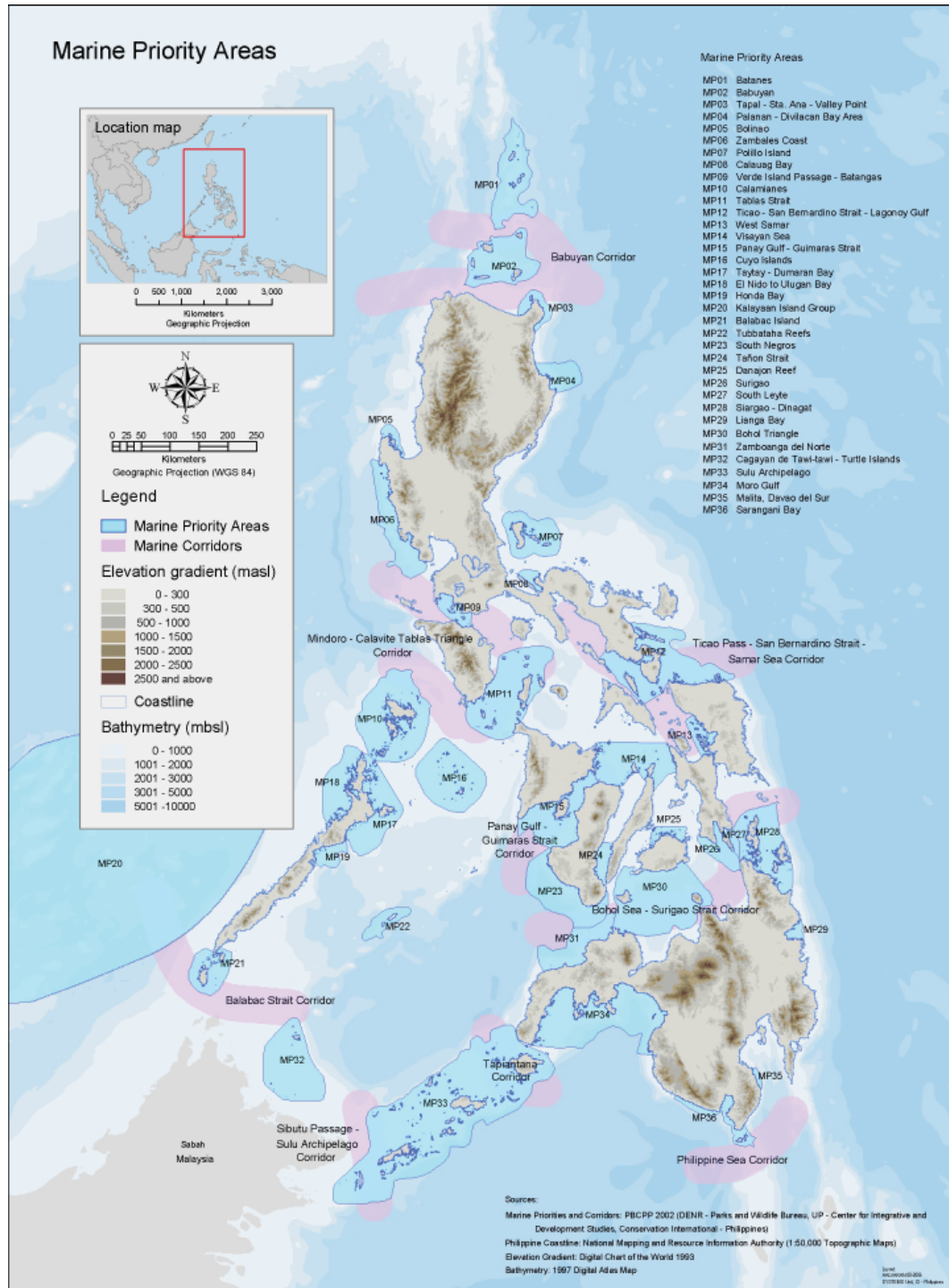


Image Source: CI-Philippines.

Figure 1. Integrated biodiversity conservation priority areas in the Philippines.

world. Its biological diversity is under threat from habitat destruction and overexploitation. In 1997, the Department of Environment and Natural Resources (DENR) developed and adopted

the National Biodiversity Strategy and Action Plan (NBSAP) in an attempt to address the country's biodiversity crisis.

In 2000, a refinement of the

national biodiversity plan was done through the Philippine Biodiversity Conservation Priority-Setting Program (PBCPP). Drawing inputs from more than 300 natural and social scientists from about 100 local and international institutions, government and nongovernmental organizations, academia, peoples' organizations, donors and the private sector, the results of the PBCPP represent the national consensus on the priorities and strategies for conserving Philippine biodiversity.

A total of 206 biodiversity conservation priority areas were identified, out of which, 170 are terrestrial and 36 are marine (Figure 1).

Five strategic actions needed to address the biodiversity crisis were identified to ensure that conservation activities are to be directed to the 206 PBCPP priority areas (Ong, et al., 2002):

1. Harmonize research with conservation needs;
2. Enhance and strengthen the protected areas system;
3. Institutionalize innovative and appropriate biodiversity conservation approaches — the Biodiversity corridors;
4. Institutionalize monitoring and evaluation (M&E) systems of projects and of biodiversity; and
5. Develop a national constituency for biodiversity conservation in the Philippines.

Refining Priority Sites for Conservation in the Philippines Using the KBA Approach

Building on the results of the PBCPP, the Key Biodiversity Areas

Table 1. Criteria and thresholds that were provisionally considered appropriate for the identification of marine KBAs (Edgar, et al., 2008a).

Criterion	Sub-criterion	Provisional thresholds for triggering KBA status
Vulnerability Regular occurrence of a globally threatened species (according to the IUCN Red List) at the site		Regular presence of a single individual for Critically Endangered (CR) and Endangered (EN) species; regular presence of 30 individuals or 10 pairs for Vulnerable species (VU)
Irreplaceability Site holds X% of a species' global population at any stage of the species' lifecycle 5% of the global population at site	a. restricted-range species	Species with a global range less than 100,000 km ² ;
	b. Species with large but clumped distributions	5% of the global population at site
	c. Globally significant congregations	1% of global population seasonally present at site
	d. Globally significant source populations	Site is responsible for maintaining 1% of global population

(KBA) approach (Eken, et al., 2004) was employed to further refine the terrestrial and marine biodiversity priority areas in the Philippines. KBAs are "sites of global significance for biodiversity conservation" which are identified using widely accepted criteria and thresholds (See Table 1) based on the conservation planning principles of vulnerability and irreplaceability.

The identification and delineation of terrestrial KBAs in the Philippines utilized the 117 Important Bird Areas (IBAs) previously identified by Haribon Foundation and Birdlife International and the 206 conservation priority areas of the PBCPP (CI-DENR-Haribon, 2006). Using the 2004 IUCN Red List as the primary reference for the list of globally threatened species, a total of 128 KBAs were identified for 209 globally threatened and

419 endemic species of freshwater fishes, amphibians, reptiles, birds and mammals and 62 species of congregatory birds. Only one third (35%) of these KBAs are under legal protection status. Areas that are equally important but have no data to satisfy KBA criteria were designated as candidate KBA which can be considered priority areas for research. There are 51 candidate terrestrial KBAs identified for the Philippines.

The KBA criteria which were applied to terrestrial species needed modifications to be applicable for marine species (Table 1) (CI, 2008; Edgar, et al., 2008a). Prior to its application in the Philippines, initial testing of the modified KBA criteria was done in the Galapagos (Edgar, et al., 2008b).

In 2008, the application of the KBAs to marine areas in the Philippines

was tested through a series of expert workshops. The first of these workshops was the Marine Key Biodiversity Areas Definition Workshop where the 2007 IUCN Red List was used as a primary reference. Workshop participants were experts in various areas of marine life, classified as follows: highly mobile (elasmobranchs, fish, marine turtles, cetaceans); site-attached (reef fish, marine invertebrates, giant clams, groupers); and the habitat-forming group (corals, seagrass, mangroves, seaweeds).

The workshop validated the list and distribution of species that trigger the vulnerability and irreplaceability criteria (**Table 1**), and determined the applicability of the marine KBA process to the Philippines. Marine KBAs in the country were also identified. Map overlays showing the distribution of KBA trigger species were produced and later integrated to show the first-cut version of the marine KBAs for the Philippines (**Figure 2**). A total of 70 marine KBAs were identified.

A second workshop was conducted to develop a set of criteria to refine the boundaries of the marine KBAs identified during the first workshop. It also established priorities for these KBAs.

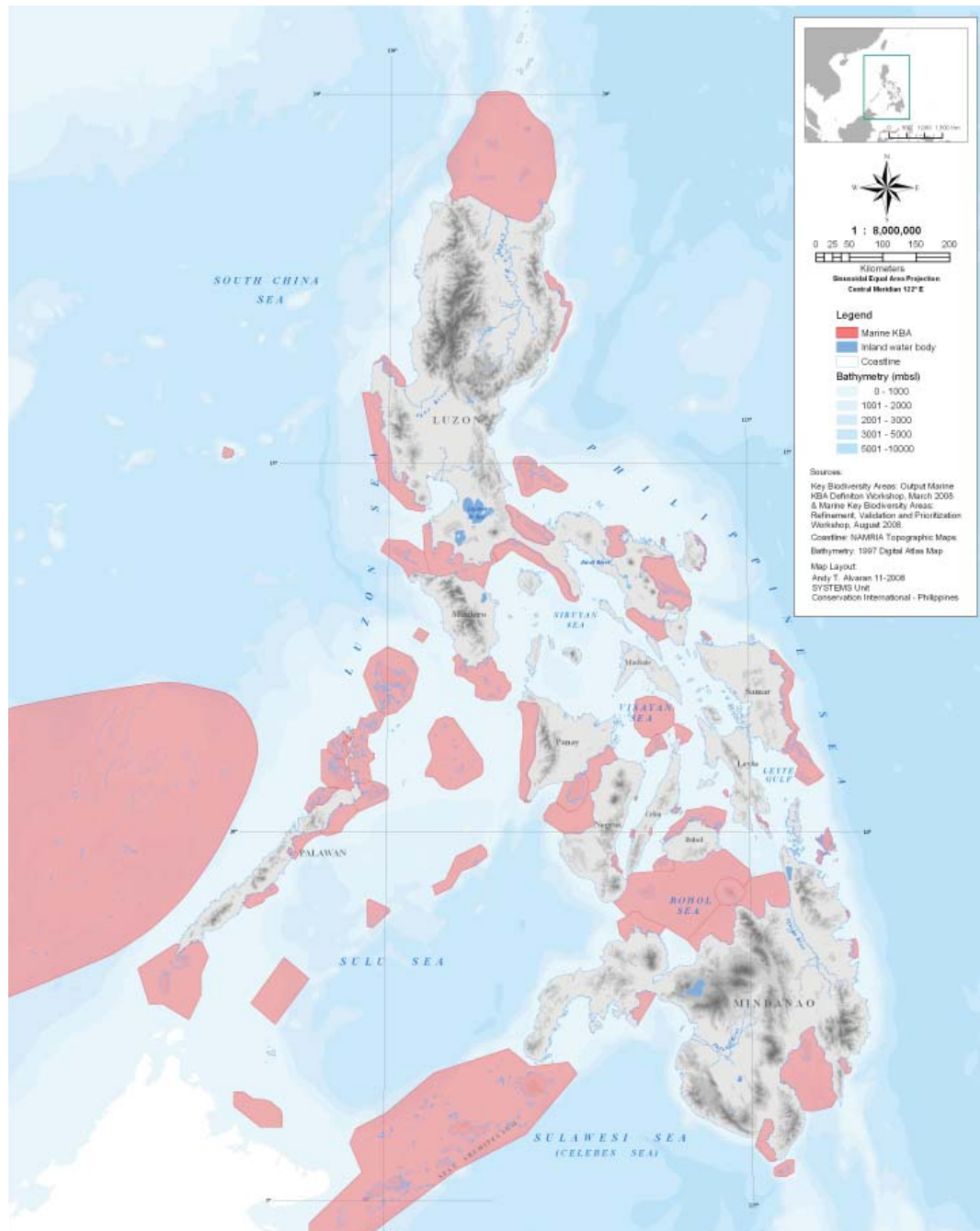


Image Source: CI-Philippines.

Figure 2. Initial marine key biodiversity areas identified for the Philippines based on the two expert workshops conducted by Conservation International in 2008.

Conclusion

The overlap of identified marine KBAs with existing MPAs in the Philippines is currently being analyzed. It is expected that the

integration of the terrestrial and marine KBAs for the Philippines will provide an enhanced decision-making framework for stakeholders and decision-makers at local, national, and regional

governance levels on which conservation and development programmes/plans could be based.

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The Framework for a Network of MPAs in the SSME: Status of Implementation

The establishment of an ecological network of marine protected areas (NMPAs) is widely considered as the most effective way to protect ocean biodiversity and its economic values. However, in the nearly one million square kilometer-seascape of the Sulu-Sulawesi Seas, where 58 priority areas have been identified for conservation and management over a timeframe of 50 years where should the MPA network start?

The direction for strategic marine conservation will be set by applying the best science with regard to selection,

design and management of MPA networks, which protect: a) valuable resources; b) the habitats that sustain them; and c) the interests of the people who depend on them.

When planning for NMPAs establishment, it is necessary and basic to determine its conservation target.

What is the aim of the NMPAs?

The use of modeling to design an ecological NMPA does not work in the

case of the Sulu-Sulawesi Seas because of insufficient and scattered data. To provide some basis in designing ecologically sensible NMPAs in this seascape, the basis for design was expert opinion and best knowledge. A workshop of MPA experts and practitioners was convened in 2003, under the auspices of the World Wide Fund for Nature-Sulu-Sulawesi Marine Ecoregion (WWF-SSME) Conservation Programme. The objective of the workshop was to develop the Framework for a Network of MPAs in Sulu-Sulawesi Seas (WWF, 2004), based on MPA experts' discussion and known biophysical



information (Stakeholders of the SSME, et al., 2004).

The SSME Conservation Programme focused on: (1) protection of species of special concern; (2) management of integrated coastal ecosystems, i.e., mangrove forests-seagrass beds-coral reefs-linked ecosystems with terrestrial components; and (3) fisheries management.

The Framework for NMPA in Sulu-Sulawesi

The development of the framework for a network of MPAs in the Sulu-Sulawesi Seas took into account the following (Noss, 1992):

1. Representation of biodiversity in the areas that make up the network;
2. Maintenance of viable populations of

species of special concern within the network;

3. Maintenance of ecological and evolutionary processes that affect biodiversity in the network; and
4. Resiliency by including in the network areas that have high rates to survive and recover from short- and long-term environmental changes.

The framework also considered a set of sample criteria for the NMPAs, which was derived from internationally accepted criteria for MPA establishment (Roberts, et al., 2003). Additional inputs were provided by MPA experts who contributed to the SSME NMPAs framework. The resulting criteria were as follows:

1. Biogeographic representation
2. Habitat representation and heterogeneity
3. Human threats
4. Natural catastrophes
5. Size (expert functions, viability, management)
6. Connectivity
7. Vulnerable habitats
8. Vulnerable life stages
9. Species of populations of special concern
10. Exploitable species
11. Ecosystem linkages to ecological services for humans
12. Ecosystem services
13. Adjacency of terrestrial managed areas
14. Disturbance

Understandably, a network of sites intended to protect species would be different from a set of sites that would target fisheries management. Networks for species protection would vary in configuration depending on species being targeted, e.g., NMPA for green sea turtles or NMPA for Napoleon wrasse. Due to these variations, experts worked in groups, with each group selecting the criteria for sample NMPAs, as applicable,

from the set of identified criteria.

They matched the selected set of criteria with the fundamental goals of conservation, identified the specific conservation targets of the sample NMPA, including indicators, based on the criteria and conservation goals, and listed the socioeconomic and cultural considerations in NMPA establishment.

The group outputs were presented in the framework in three matrices:

1. Network of species of special concern (for marine turtles);
2. Network of MPAs for integrated coastal ecosystems (for coral reefs); and
3. Network of MPAs for fisheries (for demersal, pelagic, reef and deep sea).

Each matrix provided ideas on the configuration of a network depending on a chosen conservation objective. By combining the above matrices, a general framework was developed. The framework provides the guiding principles and biophysical and socioeconomic decision rules when establishing NMPAs in the SSME.

Work in Progress

It is a work in progress and will have to be tested and improved accordingly. Notwithstanding its draft form, it is useful for a seascape like Sulu-Sulawesi where scientific information is insufficient, in guiding the establishment of ecological networks of MPAs for biodiversity conservation and resource management. (Table 1 presents the biophysical and socioeconomic considerations for the Network of MPAs for Species of Special Concern).

The framework also provides immediate (two years), intermediate (one to five years) and long-term (seven to ten years) action priorities for implementation.

Table 1. Network of MPAs for Species of Special Concern (Marine Turtles). Colored text indicates suggested modifications to this output (Adapted from WWF, 2004, by Pilcher, 2008).

Network of MPA Criteria	Goals	Conservation Targets
1. Habitat representation and heterogeneity	<ul style="list-style-type: none"> • Representation 	<ul style="list-style-type: none"> • Rookeries (nesting, inter-nesting, and mating habitats) • Feeding, developmental habitats • Migratory routes for the five species of turtles in the SSME
2. Human threats	<ul style="list-style-type: none"> • Population viability • Ecological and evolutionary processes 	<ul style="list-style-type: none"> • Eggs, hatchlings, developmental stage (juvenile) and adult turtles • Key nesting habitats
3. Natural catastrophes (e.g., El Niño, beach erosion)	<ul style="list-style-type: none"> • Population viability • Ecological and evolutionary processes • Resilience 	<ul style="list-style-type: none"> • Natural sex ratio • Nesting densities • Hatchling emergence • Nesting success
4. Size (export functions, viability, management) includes population size, size of MPAs for turtles	<ul style="list-style-type: none"> • Representation • Population viability • Ecological and evolutionary processes • Resilience 	<ul style="list-style-type: none"> • Nesting sites in excess of 100 nests/year • Adult foraging sites • Juvenile foraging/development sites • Migratory corridors for one or more species • Nesting population
5. Connectivity	<ul style="list-style-type: none"> • Population viability • Ecological and evolutionary processes • Resilience 	<p>Same as Criteria 1 targets to ensure the full life cycle of turtles belonging to the same population</p> <ul style="list-style-type: none"> • Full life histories of turtles belonging to each genetic stock
6. Vulnerable habitats	<p><i>All three key habitats (nesting beaches, migratory pathways and foraging grounds) are critical for turtle conservation – the absence of any of these would result in population declines, given the lack of mobility among populations. These habitats are addressed above under Habitat Representation.</i></p>	
7. Vulnerable life stages	<ul style="list-style-type: none"> • Population viability 	<ul style="list-style-type: none"> • Critical nesting beaches focusing on egg incubation and hatchling emergence • Management interventions • Migratory pathways
8. Species services	<ul style="list-style-type: none"> • Ecological and evolutionary processes 	<p>Same as targets under Criteria 1, 3, 4, and 5</p> <ul style="list-style-type: none"> • Turtles continue to play their ecological roles in foraging habitats

Indicators	Social, Cultural, Economic Considerations
<ul style="list-style-type: none"> • Nesting habitat: at least 70% of turtle egg production conserved • Threats to turtles as well as mortalities in critical habitats, land-based sources of pollution, and other disturbances to seagrass beds and coral reefs is reduced or eliminated • Representative habitats including interesting areas maintained • A suite of each of the required habitats is maintained at all times to allow for point-source catastrophes • Migratory pathways and particularly bottlenecks are priorities for at-sea conservation action 	<ul style="list-style-type: none"> • Participatory management of tri-national protected area (Turtle Islands, Sipadan Island, Lankayan Island, and Derawan Island Group) through a Turtle Network Committee, chaired by the existing SSS host country • Integrated conservation and development (ICD) approach • Political and socioeconomic impacts of conservation (e.g., use of turtle-exclusive devices or TEDs) • Respect for traditional use of turtle eggs and meat, e.g., religious practices, rituals • Promoted use of turtles for tourism development and other livelihood opportunities • Development of turtle-friendly alternative livelihoods (e.g., seaweed farm screens) • Capacity building for turtle conservation
<ul style="list-style-type: none"> • At least 70% of turtle egg production conserved • Hatchling mortality reduced to natural levels • Natural population dynamics understood and maintained • Stable or increasing nesting trends • Human settlements isolated from critical nesting sites 	<ul style="list-style-type: none"> • Direct harvest levels of adults and eggs to be considered when dealing with local communities • Research and monitoring costs of at-sea work to be budgeted for • Coastal zoning plans to account for critical habitats (foraging and nesting) • Offset schemes to be considered in reducing direct harvests
<ul style="list-style-type: none"> • Sex ratio maintained (Research agenda: subject to study/verification) • Proper land use that maintains alternative nesting sites • Increased hatching and hatchling success • Sensible egg relocation programmes to counter erosion are in place 	<ul style="list-style-type: none"> • Participation of various sectors, e.g., act as early warning system, as a response team • ICD approach • Increased awareness on the disadvantages of head starting • Increased costs of egg relocation and monitoring during natural catastrophes • Stranding network to act as an early warning signal to major environmental hazards
<p>Same as Criteria 1 indicators and</p> <ul style="list-style-type: none"> • Stable or increasing number of nesters • Stable or increasing proportion of recruits to reproductive adult age classes • Stable or increasing number of turtles in foraging grounds • Increased spatial coverage over range of foraging individuals 	<ul style="list-style-type: none"> • Appropriate legislations for zoning and setback, particularly in foraging grounds • Effective law enforcement • Mitigation of impacts of protection of large areas on socioeconomic conditions, e.g., alternative livelihood • Integrated coastal management (ICM) approach • Mechanism for collaboration and cooperation among management units of the network
<ul style="list-style-type: none"> • Increased understanding of genetic interlinkages • Reduced threats along migratory routes and in critical habitats, e.g., reduction of by-catch and mass poaching by distant nation fleets • Increased population densities in all life stages and habitats 	<ul style="list-style-type: none"> • Turtle-friendly livelihood and economic activities, e.g. eco-tourism, fisheries • Partnership with corporate/private sector and the academe • Appropriate land and water use planning and development • Inter-regional collaboration and cooperation • Effective law enforcement • Increased dialogue with distant nations whose fishing fleets impact SSS marine turtles
<ul style="list-style-type: none"> • Incubation and emergence success are similar on managed beaches to those left in the wild (in situ) • Hatchling dispersal follows natural patterns and mortality rates • Migration bottlenecks receive enhanced protection 	<ul style="list-style-type: none"> • Research is needed to determine what 'natural' is for hatchling gender ratios, success rates and dispersal patterns at all sites • While expensive, migratory routes and bottlenecks can only be determined through satellite tracking, yet this offers unprecedented awareness and education opportunities
<ul style="list-style-type: none"> • Seagrass communities respond positively to constant turtle grazing • Coral reef fish communities which depend on sponges maintained • Diversity of sponges on coral reef assemblages maintained but not overwhelming coral communities • Artisanal fishery sectors continue to benefit from ecological services of these habitats given roles of turtles in maintaining these 	<p>Same as 1, 3, 4, and 5</p> <ul style="list-style-type: none"> • Link to socioeconomic considerations of Network of MPAs for fisheries and Network of MPAs for integrated coastal ecosystems • Socioeconomic considerations of turtle impacts to alternative livelihood programmes • Community understanding of the indirect values of turtles to marine habitat well-being

As of October 2008, immediate actions have been implemented as follows:

Priority action 1:

Seek high government support from Indonesia, Malaysia, and the Philippines for the adoption of the Conservation Plan for SSME

High-level adoption of the conservation plan for SSME was achieved through a ministerial signing of a Tri-national Memorandum of Understanding between the governments of Indonesia, Malaysia, and the Philippines.

The Sulu-Sulawesi ecoregion-level action plan provides for the use of the framework for NMPA "...as guide in designing MPA networks in the SSME and establishing and managing functional integrated network of priority conservation areas to ensure ecological integrity..." (Stakeholders of the SSME, et al., 2004). The adoption of the ECP, in effect, adopted the framework.

Priority action 2:

Communicate the framework in various forums to seek support and resources for the use of NMPA in conservation and sustainable development

The framework was presented, discussed, communicated, or distributed at the following international events, among others:

- World Parks Congress, Durban, South Africa, September 2003 – oral presentation (Romero, et al., 2003)
- 1st East Asian Seas Congress, Putrajaya, Malaysia, December 2003 – oral presentation and journal publication (Miclat, et al., 2006)
- 7th Conference of Parties for the Convention on Biological Diversity, Kuala Lumpur, Malaysia, February 2004 – published copies exhibited and distributed at the WWF Exhibit Booth
- 10th International Coral Reef Symposium, Okinawa, Japan, July 2004 – oral presentation (Llewellyn, et al., 2004)
- International MPA Congress, Geelong, Australia, November 2005 – abstract submitted; copies shared (Miclat, et al., 2005)
- Workshop on Learning Partnership for MPA Networks, Tagaytay, Philippines, May 2008 – presented by CI-Philippines (Miclat, 2008)

Priority action 3:

Publish the framework, disseminate, solicit feedback from MPA experts, and pilot-test to provide basis for refinement

The framework was published in 2004

and disseminated for the first time at the Convention on Biological Diversity - 7th Conference of Parties in February 2004. In 2008, Conservation International (CI) pioneered the use of the Framework through the Sulu-Sulawesi Seascape Project.

Pilot-testing the Framework

The Walton-funded SSS Project is being implemented in Indonesia, Malaysia and Philippines through 32 partners engaged during the project's first phase (2005-2008). The partnership with the Marine Research Foundation (MRF), based in Sabah, made possible the review of existing information about sea turtles in Sulu-Sulawesi, the compilation of known critical areas for sea turtles, and the drafting of a design for a transboundary MPA network for sea turtles.

The reviews provided the first opportunity to use the SSME Framework for NMPA. As a result, the draft design for NMPA for sea turtles in the framework was refined (Table 1) through the incorporation of relevant current management practices, research and monitoring needs (Pilcher, 2008).

A Useful Resource

The SSME Framework for NMPAs is a product of a tedious technical process participated in by 32 MPA experts and practitioners, with experiences in networks of MPAs (e.g., Red Sea, Great Barrier Reef, Northwestern Australia). However, the framework – a highly valuable material, is underutilized. Currently, its application is limited to CI's SSS Project.

While implementation of the framework's action plans is limited, it is worth highlighting the following:

1. From 2004-2005, the WWF was mostly responsible for implementing the immediate action priorities which the MPA experts set for the framework during its formulation in 2003.
2. The review and refinement of the



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framework has been incorporated in the workplan of the Tri-national subcommittee for MPAs and Networks and approved at the 2nd Meeting of the Tri-National Committee for SSME in April 2007.

3. The pilot-testing of the framework under the CI-SSS Project contributes to the implementation of the immediate action priorities for the framework. The experience of the MRF in designing a network of MPAs for sea turtles, highlights the usefulness of the framework as evidenced by the remarkable overlap between the framework and the actual conservation needs and actions on the ground.

There is an increasing recognition of the added value of networks of MPAs to conservation and sustainable development over a single MPA and a growing interest to pursue network establishment. The Coral Triangle Initiative which includes NMPAs, spurs enthusiasm among MPA scientists and practitioners to pick up the SSME Framework for NMPAs. CI, for its part, will continue to promote the framework, contribute to the review and refinement through its membership in the Tri-National Committee for SSME, and communicate the encouraging results on the use of the framework to provide the impetus for others to try it. It will contribute to planning and establishment of MPA networks through partnerships, not only in Sulu-Sulawesi but in other seascapes.

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Memorandum of Understanding between the Government of the Republic of Indonesia and the Government of Malaysia and the Government of the Republic of the Philippines on the Adoption of the Conservation Plan for the Sulu-Sulawesi Marine Ecoregion

The Government of the Republic of Indonesia, the Government of Malaysia, and the Government of the Republic of the Philippines, hereinafter referred to singularly as **“the Party”** and collectively as **“the Parties”**;

RECOGNISING that:

- the states exercise sovereign rights over their natural resources and that co-operation is important in the conservation and sustainable development of these resources in respect of areas beyond national jurisdiction and of mutual interest, in line with the provisions of the Convention on Biological Diversity (CBD) including the Jakarta Mandate of 1995;
- the relevant provisions of the United Nations Convention on the Law of the Sea (UNCLOS) of 1982, particularly Part IX thereof relating to enclosed and semi-enclosed seas encourages co-operation among regional states, and other interested states in marine environment protection and marine scientific research;
- the outcome of the World Summit on Sustainable Development (WSSD), in particular, the Johannesburg Declaration on Sustainable Development and Paragraph 29 of the Plan of Implementation states that effective coordination and co-operation at global and regional levels, among others, are needed to ensure sustainable development of the oceans;
- the Sulu-Sulawesi Marine Ecoregion (SSME) is significant as a globally unique center of biodiversity with vibrant ecological integrity, including all species assemblages,

communities, habitats and ecological processes;

- the SSME is a highly productive ecoregion that can sustainably and equitably provide for the socioeconomic and cultural needs of the human communities dependent on it;
- the shared resources of SSME is a common concern and the conservation of sustainable development of said resources and the benefits are mutually shared among the Parties;
- the ecoregion approach to conservation facilitates the realisation of the four fundamental goals of biodiversity conservation, which are representation, sustainability of ecological processes, viability of species, and resiliency.

ACKNOWLEDGING that:

- ecoregion approach offers opportunities to achieve these goals mainly because of comprehensive joint management at the ecoregional levels and through complementary action at the national levels; more systematic and coherent actions responsive to the requirements of ecological rather than political boundaries; availability of resources for conservation from stakeholders at various levels; and, higher degree of efficiency and effectiveness due to the matching of resources for conservation with the type and degree of needs;
- the Conservation Plan for the Sulu-Sulawesi Marine Ecoregion, hereinafter referred to as the Ecoregion

Conservation Plan (ECP), addresses the ecological integrity and sustainability of resources;

- the ECP was formulated by the respective stakeholders of the SSME from the three participating nations;

NOTING that the effective implementation of the ECP of the SSME, under the concept of large-scale conservation and sustainable development, can only be realised through collaborative management among concerned government agencies and other stakeholders in the bordering states;

AFFIRMING their intention to establish mutually beneficial cooperation on the conservation and sustainable management of biodiversity in the Sulu-Sulawesi Marine Ecoregion, thereby enhancing friendly relations among the Parties;

HAVE AGREED as follows:

ARTICLE I DEFINITION

For the purpose of this Memorandum of Understanding:

1. "Ecoregion" means a relatively large unit of land or water that contains a distinct assemblage of natural communities sharing a large majority of species, dynamics, and environmental conditions, and consequently functions effectively as a conservation unit.
2. "Ecoregion Conservation Plan (ECP)" means a plan of action that spells out the short-term (10-15 years) goals and actions to be taken as steps in realising the Biodiversity Vision, which is the long term (50 years) goal. The ECP includes the ecoregional action plan and the national action plans of Indonesia, Malaysia and the Philippines, that are consistent with and are aligned to national plans and programmes as well as each country's international agreements and commitments.
3. "Sulu-Sulawesi Marine Ecoregion" means an ecoregion, covering an area of approximately a million square kilometers, shared by Indonesia, Malaysia and the Philippines and includes the Sulu Sea and Sulawesi Sea.

ARTICLE II ECOREGION CONSERVATION PLAN (ECP)

The Parties, subject to the terms of this Memorandum of

Understanding and the laws, national policies, rules and regulations of each country, shall undertake necessary measures to formally adopt the ECP and its incorporation into their respective National Plans.

ARTICLE III AREAS OF CO-OPERATION

1. The Parties shall, subject to their respective national policies, laws, rules and regulations from time to time in force governing the subject matter in their respective countries, endeavour to take necessary steps to encourage, facilitate and promote co-operation in the areas identified in the ECP which are as follows:
 - a. establishment of management strategies and co-ordinated institutions for effective ecoregion conservation;
 - b. establishment of a functional integrated network of priority conservation areas to ensure ecological integrity;
 - c. development of sustainable livelihood systems that support marine and coastal conservation across the ecoregion;
 - d. shaping of economic development compatible with biodiversity conservation;
 - e. enhancement of understanding of biodiversity resources and factors affecting them to form basis for management decisions;
 - f. development of communication, education and outreach programmes and strategies to motivate people to take conservation action;
 - g. development of sustainable financing mechanism to support cost of conservation and resource management;
 - h. building and enhancement of capacity of stakeholders to effectively manage the conservation of SSME;
 - i. implementation of coordinated protection of threatened marine species to ensure maintenance of viable populations and protection of critical habitat; and
 - j. improvement of coastal, oceanic and other types of

fisheries resource condition and management by developing a framework strategy, institutions and appropriate interventions.

ARTICLE IV DESIGNATED NATIONAL AUTHORITY

For the purpose of this Memorandum of Understanding, the Parties shall nominate their respective National Focal Authorities, which shall be communicated through diplomatic channels upon signing of this Memorandum of Understanding.

ARTICLE V TRI-NATIONAL COMMITTEE

1. For the purpose of implementation of this Memorandum of Understanding, a Tri-National Committee shall be established which shall consist of representatives of the designated national authorities of the Parties.
2. The Tri-National Committee shall adopt procedures for the conduct of its meetings which shall be convened once a year or as may be necessary upon the instance of any of the parties, in the Republic of Indonesia, Malaysia, and the Republic of the Philippines on rotation basis.
3. The Tri-National Committee Meeting shall serve as a forum:
 - a. to coordinated and harmonise the implementation of the ECP;
 - b. to review, update and revise the ECP when necessary; and
 - c. for consultation and information sharing among the parties on the development and implementation of conservation initiatives outside the scope of the ECP.

ARTICLE VI FINANCIAL ARRANGEMENTS

1. Financial obligations arising from the Tri-National Committee's activities and joint activities in the implementation of the ECP shall be shouldered equitably through understandings or arrangements agreed upon during Tri-National Committee Meeting, which should be communicated through Exchange of Letters.

2. The Parties, individually or jointly, where necessary may mobilize additional resources required for the implementation of the ECP from relevant international organizations and international donor community.

ARTICLE VII NON-PREJUDICE CLAUSE

Nothing in this Memorandum of Understanding shall prejudice the sovereign rights of the Parties over the resources of the positions of the Parties on the negotiations of the delimitation of common maritime boundaries.

ARTICLE VIII INTELLECTUAL PROPERTY RIGHTS

1. The protection of intellectual property rights shall be enforced in conformity with the respective national laws and regulations of the Parties and with international agreements in force among the Parties.
2. The intellectual property right in respect of any technology development carried out jointly by the Parties or research result through joint activity of the Parties shall be jointly owned by the Parties in accordance with the terms to be mutually agreed upon.
3. Each Party shall be allowed to use such intellectual property rights for the purpose of maintaining, adapting and improving the relevant technology. In the event that such technology is used by the Party and/or institutions on behalf of the Party for commercial purposes, the other Parties shall be entitled to obtain an equitable portion of royalty, among others.
4. Each Party shall own the intellectual property rights in respect of any research results, technological development, and any products and services development, which were solely and separately developed by that Party and conducted within its national jurisdiction.
5. Any other matters pertaining to intellectual property rights that may arise from activities undertaken under this Memorandum of Understanding shall be determined and agreed upon by the Parties in a separate arrangement prior to the implementation of the activities.

ARTICLE IX CONFIDENTIALITY

Each Party shall undertake to observe the confidentiality and secrecy of documents, information and any other data received from or supplied to the other Parties during the period of the implementation of this Memorandum of Understanding of any agreement or plan of action concluded or entered pursuant to this Memorandum of Understanding. The provision of this Article shall continue to be binding for a period to be agreed upon between the Parties notwithstanding the withdrawal of any of the Parties from this Memorandum of Understanding.

ARTICLE X SUSPENSION

Each Party reserves the right for reasons of national security, national interest, public order or public health to suspend temporarily, either in whole or in part, the implementation of this Memorandum of Understanding which suspension shall take effect immediately after notification has been given to the other Parties through diplomatic channels.

ARTICLE XI REVISIONS, MODIFICATIONS AND AMENDMENTS

This Memorandum of Understanding may be revised, modified or amended, in whole or in part, by consensus of the Parties. Any revision, modification or amendment agreed to by the Parties shall be in writing and shall form part of this Memorandum of Understanding. Such revision, modification or amendment shall come into effect on such date as may be determined by the Parties. Any revision, modification or amendment shall not affect the rights and obligations arising from this Memorandum of Understanding prior or up to the date of such revision, modification or amendment.

ARTICLE XII SETTLEMENT OF DISPUTES

Any dispute or difference between the Parties concerning the interpretation and implementation of any of the provisions of this Memorandum of Understanding shall be settled amicably through consultation and negotiations among the Parties.

ARTICLE XIII ENTRY INTO FORCE, DURATION AND WITHDRAWAL

1. This Memorandum of Understanding shall enter into force

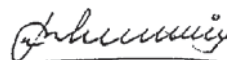
on the date of the last notification by the Parties through diplomatic channels, indicating that they have complied with their domestic requirements for its entry into force. It shall remain in force for a period of ten (10) years.

2. Any Party may withdraw from this Memorandum of Understanding after the fifth (5th) year from the date of its entry into force. The withdrawal shall take effect three (3) months after the receipt of notification of the withdrawal.
3. Any withdrawal by any Party from this Memorandum of Understanding shall not affect the implementation and completion of ongoing activities and/or programmes, which have been agreed upon by the Parties prior to the date of withdrawal from this Memorandum of Understanding.

IN WITNESS WHEREOF, the undersigned being duly authorised by their respective Governments have signed this Memorandum of Understanding.

DONE at Putrajaya, Kuala Lumpur, Malaysia on this 13th day of February in the year of 2004, in twelve (12) original texts, three (3) copies each in Bahasa Indonesia, Bahasa Malaysia, Filipino and English language, all texts being equally authentic. In the event of divergence of interpretation between any of the texts, the English text shall prevail.

FOR THE GOVERNMENT OF THE REPUBLIC OF INDONESIA



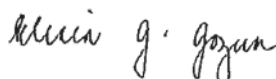
Rokhmin Dahuri

FOR THE GOVERNMENT OF MALAYSIA



Dato Seri Law Hieng Ding

FOR THE GOVERNMENT OF THE REPUBLIC OF THE PHILIPPINES



Elisea G. Gozun

By Miledel Christine C. Quibilan, Conservation International-Philippines
 Porfirio M. Aliño, Marine Science Institute, College of Science, University of the Philippines
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 and Romeo B. Trono, Conservation International-Philippines

Establishing MPA Networks in Marine Biodiversity Conservation Corridors

At first, there was a vision for a 50-year conservation goal. This biodiversity vision led to the development of a stakeholders' Ecoregion Conservation Plan (ECP) of the Sulu-Sulawesi Marine Ecoregion (SSME).

The governments of Indonesia, Malaysia and the Philippines had considered and put in place interim governance mechanisms that operated within country and across countries during the planning stages of the SSME to ensure coordination. These mechanisms soon evolved into formal institutional arrangements to support the implementation of the ECP.

In many ways, the SSME is grounded on trust, mutual respect and a willingness to find new ways of working together among various stakeholders. Since it embraced national priorities, mandates and limitations, SSME's ECP is now successfully aligned to the national plans of the three countries. It is also consistent with their international commitments and embedded in the Sustainable Development Strategy for the Seas of East Asia, which was adopted in Malaysia in 2003, as a common platform for regional cooperation in managing the seas of the region.

International NGOs such as the World Wide Fund for Nature (WWF) and Conservation International (CI), regional

institutions such as the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), and the governments of Indonesia, Malaysia and the Philippines, together with their partners, fund providers and local communities have aligned their conservation goals and outcomes with existing national frameworks and strategies as well as regional initiatives. Collectively these efforts help to conserve the SSME.

The establishment of a network of marine protected areas (MPAs) is one of the tools to achieve this objective. By effectively managing MPAs as a network, managers could capitalize on and leverage various stakeholders and the bio-physical inter-relationships among sites to make each MPA in the network more robust against overexploitation and degradation. The management of a comprehensive, adequate and representative system of MPAs will contribute to the long-term ecological viability of marine and estuarine systems, maintain ecological processes and systems and protect the Sulu-Sulawesi's biological diversity at all levels.

State of MPAs within the Sulu-Sulawesi Seas

A review paper by Abesamis and Aliño in 2006 revealed that there are at least 352 MPAs in the Sulu-Sulawesi Seas. Of these, 343 are in the Philippines, 5 are in Indonesia, 3 are in Malaysia, and 1 is jointly managed by the Philippines and Malaysia. Management data is only available for 16 percent of the Philippine MPAs [*Editor's Note: See Backcover of this issue.*].

In the Philippines, the number of MPAs has been rapidly increasing (Arceo, et al., 2008). Compared to other regions in the country, the Visayan Sea region has the most number of MPAs. The sizes of MPAs have also increased. Around 48 percent (out of those MPAs whose sizes were available for the review) are now within the 11 to 100 hectares size range, up from many being in the 1 to 10 hectares size range a decade ago.

Setting up MPA Networks

The Sulu-Sulawesi Marine Ecoregion/Seascape is composed of three

known Philippine biogeographic regions: Sulu, Visayan and Sulawesi Seas. The interfaces or 'marine corridors' between these biogeographic regions were identified as priority areas for protection as it is through these bottlenecks that sub-populations converge and are connected (Ong, et al., 2002). Maintaining these interconnections enables sub-populations to replenish other sub-populations making the entire network more robust against extinctions.

The Sulu-Sulawesi Seascape Programme aimed to provide a scientific basis for MPA and MPA network establishment within these marine biodiversity conservation corridors (MBCCs). The programme facilitated participatory decision-making processes and the development of appropriate management plans to strengthen the implementation and sustainability of existing MPAs. It assisted in establishing mechanisms for vertical coordination among local and regional groups and horizontal coordination with sectors and localities within the governance framework through the formulation of new policies and creation of social networks.

The first phase implementation of the SSS Programme (2005-2008) focused on four strategic MBCCs namely: the **Verde Island Passage** and the **Balabac Strait** that link the Sulu Sea with the South China Sea, the **Tri-National Sea Turtle Corridor** that links the Sulu Sea with the Sulawesi Sea, and the **Cagayan Ridge**, which helps maintain connectivity of marine populations within the central Sulu Sea and beyond.

The MPA objectives of the SSS Programme aim to strengthen individual MPA effectiveness and provide the

One of the 10 major objectives of the ECP of the SSME is to “Establish a functional integrated network of priority conservation areas to ensure ecological integrity”.

proper scientific information needed to develop networks of mutually supporting MPAs. To strengthen MPA effectiveness, technical and logistical support are being provided to address immediate threats to critical marine habitats and threatened species: support for participatory fisheries management interventions such as community-managed MPAs, and assistance in the development of sound coastal resource management plans.

Through grants from NGOs and donors, studies are being undertaken in partnership with universities and laboratories to enable local scientists to better understand the connectivity between populations of marine organisms within and across the Verde Island Passage, Cagayan Ridge, Balabac Strait and Tri-National Sea Turtle corridors.

Initiatives in the Marine Corridors

The Verde Island Passage MBCC has 36 MPAs — 24 in Batangas and 12 in Oriental Mindoro. Most of these MPAs are between 1 to 10 hectares, lack appropriate technical descriptions, and have no MPA management plans in place. In November 2006, Executive Order (E.O.) No. 578 was issued by Philippine President Gloria Macapagal Arroyo for the establishment of a national policy on biodiversity to be implemented throughout the country, particularly the Sulu-Sulawesi marine ecosystem. The E.O. highlighted and prescribed its implementation in the

Verde Island Passage. In support of the E.O., the Verde Island Passage Framework Plan was finalized and is in the process of adoption by the respective local government units.

The Cagayan Ridge MBCC is linked with the Tubbataha Reef National Marine Park (TRNMP), a UNESCO World Heritage Site. Other known diving destinations along the ridge are the Jessie Beazely, Basterra and Bancoran and inhabited islands like Cawili, Arena, Calusa and Cagayancillo. In 2006, the TRNMP was renamed the Tubbataha Reefs Natural Park (TRNP) by virtue of Presidential Proclamation 1126 (See Box 1). Increasing in size from 33,200 ha to 96,896 ha, the TRNP now holds the distinction as the MPA with the largest marine area in the Philippines where extractive activities are prohibited (i.e., “no take”). Still pending in Congress, the Tubbataha Bill (House Bill 5515 series of 2002) has yet to be passed.

North of the TRNP is Cagayancillo where there are four no-take MPAs, namely Balabag, Talaga and Nusa, as well as one located in Cawili Island. Buffer areas between 300 to 500 m from the no-take MPA boundary may be designated for all four no-take MPAs. MPA management plans for these no-take areas are currently being drafted.

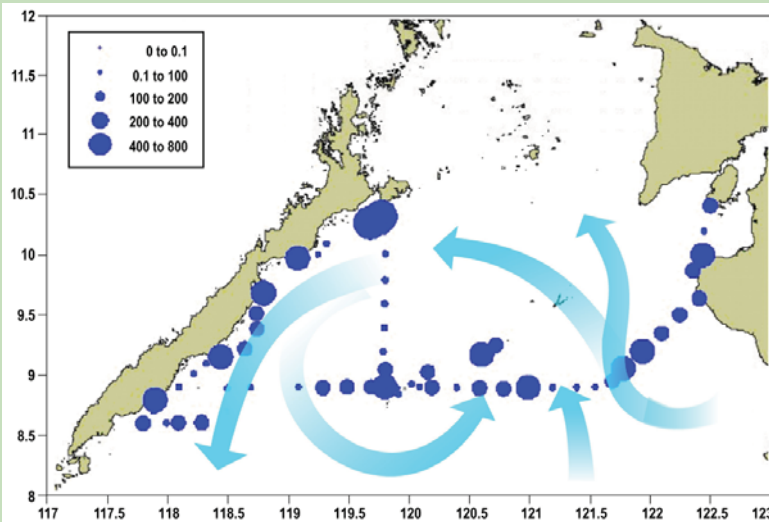
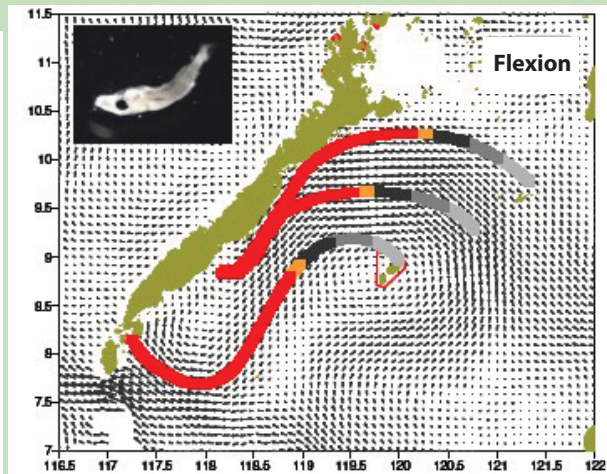
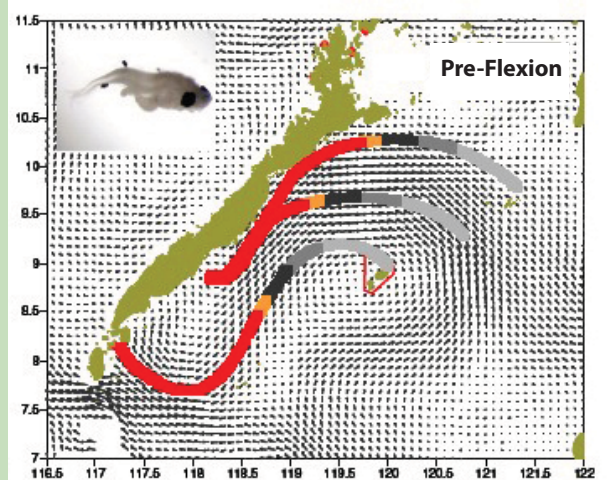
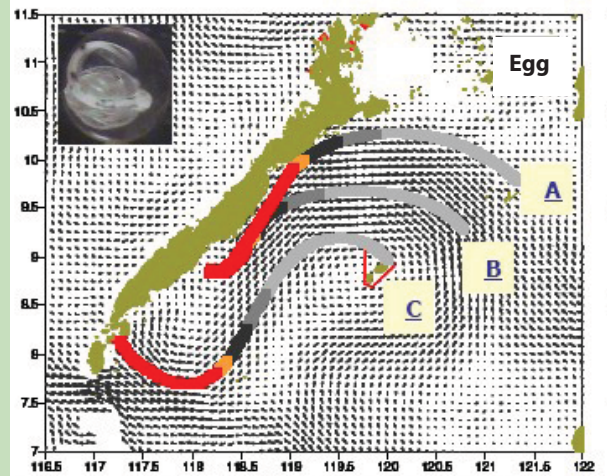
At the Balabac Strait, the local government of Balabac has declared the entire municipal waters as the Balabac Marine Protected Ecoregion under Municipal Ordinance No. 1-2005. Under this ordinance, a 44,000-hectare ‘strict protection zone’ has been designated where resource extraction is prohibited but pearl culture activities are allowed. CI-Philippines and partner *Tanggol Kalikasan, Inc.* (Defense of Nature) trained local enforcers on environmental laws, criminal procedure, investigation and evidence gathering for prosecution of environmental cases.

Box 1. Fish Larvae Distribution and Dispersal Simulation Applied in the Sulu Sea (Campos, et al., 2007 and Villanoy, et al., 2007).

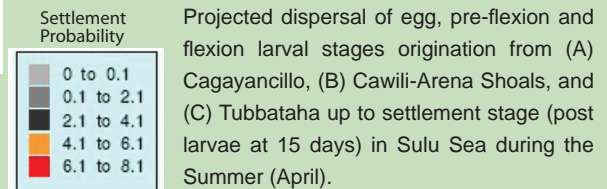
Most shallow water fish species produce eggs and larvae that drift for extended periods (e.g., 15-30 days) high above the sea bottom ("pelagic"). These early life stages may be retained by local circulation but they may also be carried by ocean currents far away from their natal reef. The extent of dispersal or retention determines the relative degree of importance of far away sub-populations to recruitment of new generations.

The University of the Philippines Visayas (UPV) (Campos, et al., 2007) together with the University of the Philippines Marine Science Institute (UPMSI) (Villanoy, et al., 2007) surveyed and mapped the distribution of fish eggs and larvae (or *ichthyoplankton*) and modeled their dispersal by the seasonal currents. The computer modeling included options to assume: (a) some swimming ability by the larvae (at 0.2 m/s); (b) ability to settle after at least 75 percent of pelagic larval duration; and (c) larval ability to detect a suitable habitat such as a reef (from a distance of 18 km). However, larval mortality, which is considerable, was not factored into the model.

Major fish spawning periods are during summer (April to May) and the transition to the northeast monsoon (October to November). Results of modeling indicate that fish spawned in Western Visayas (Antique and Negros) during summer can settle as larvae in the Cagayan Ridge. Meanwhile, fish spawned in the Cagayan Ridge during summer can settle as larvae in the east coast of Palawan (including Balabac). Fish spawned in the Cuyo Shelf (north of the Palawan mainland) also settle southwards along the east coast of Palawan during the monsoon transition period. Thus, the eastern coast of Palawan receives fish larvae during both major spawning seasons.



Map showing the distribution of fish larvae densities in Central Sulu Sea in April 2007. Arrows denote ocean currents.



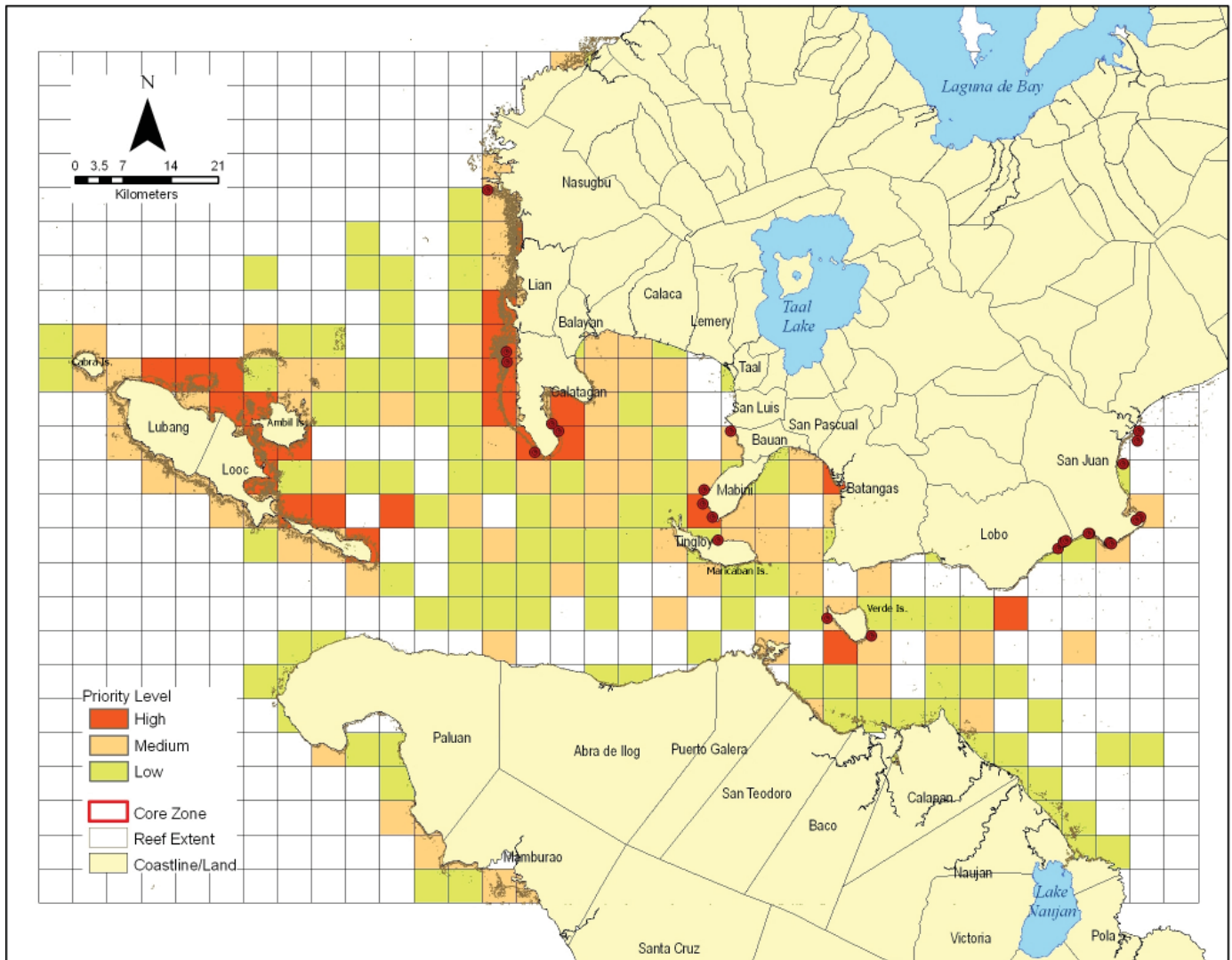


Figure 1. Possible MPA network design for Verde Island Passage with ecological (habitat and species-based) and threat criteria considered.

Providing Inputs in the Design of MPA Networks

The results from various MPA-related projects and research studies funded under the Sulu-Sulawesi Seascape Phase 1 (2005 to 2008) were integrated to propose an MPA network design based on ecological criteria for each of the corridors. Information from local perceptions and scientific studies (see boxed articles) were combined using Geographic Information System (GIS) map-based analyses to elucidate more objectively key state and pressure/threat indicators that are useful to guide decision-makers and local managers

in MPA site selection and network establishment. (*Editor's note: See Figures 1-5 in "Partnerships at Work in the Seas of Sulu and Sulawesi", page 12 for related information.*)

The integration of studies aimed to derive key ecological and threat criteria relevant for MPA site selection, and provide site-specific recommendations on the appropriate design (i.e., location, size and configuration) of networks of MPAs in the three marine corridors within the Sulu-Sulawesi Seascape. Spatially defined grids (2.5 - 5.0 km²) and a point-scoring system were used to transform discrete data into GIS maps.

Key ecological criteria used in the analyses were:

1. Extent of marine habitats based on remote sensing information;
2. Condition of marine habitats – corals, reef fishes, seagrasses, mangroves;
3. Replenishment potential (derived from fish egg and larvae distributions); and
4. Presence and/or absence of threatened seabirds, sea turtles and mammals.

Threat criteria were based on the presence and/or absence of human-induced stressors/impacts to species and habitats such as illegal and destructive fishing, mangrove cutting, etc. Threats and degree of impacts based on stakeholder perceptions during consultations and actual field data were also considered.

Within the Verde Island Passage, the integrated map shows high priority areas for MPA establishment to consist of Lubang Islands (Looc and Lubang municipalities), the municipalities of Calatagan, Lian, Mabini and Lobo, and Verde Island (Batangas City) (**Figure 1**). However, combining the ecological and threat criteria indicate that most of the Calatagan area and specific places in Lubang, Looc, Batangas City and Lobo are places of high ecological and threat values. The combined threatened species (i.e., cetacean and sea turtles) and threat criteria revealed that specific areas in Balayan Bay and in Calatagan are between medium to high priority areas. There is good concordance with the location of existing no-take MPAs in Batangas, but the current total area of no-take MPAs in this province is only about 6 km² (600 ha).

For Cagayancillo, the southern (villages of Magsaysay to Sta. Cruz) and southwest portions (villages of Talaga, Mapio and Nusa) of the Cagayancillo reef complex and the small islands on the eastern side (Bonbon and Manucan Islands) are the recommended high priority areas for MPA establishment (**Figure 2**).

For Balabac Strait, results show that the southwest of Pandanan and Bugsok Islands and the west-southwest and northeast portions of the Balabac mainland are the suggested high priority areas where new no-take/core zones can be established (**Figure 3**).

The integrated maps were presented during multistakeholder convergence workshops held separately for

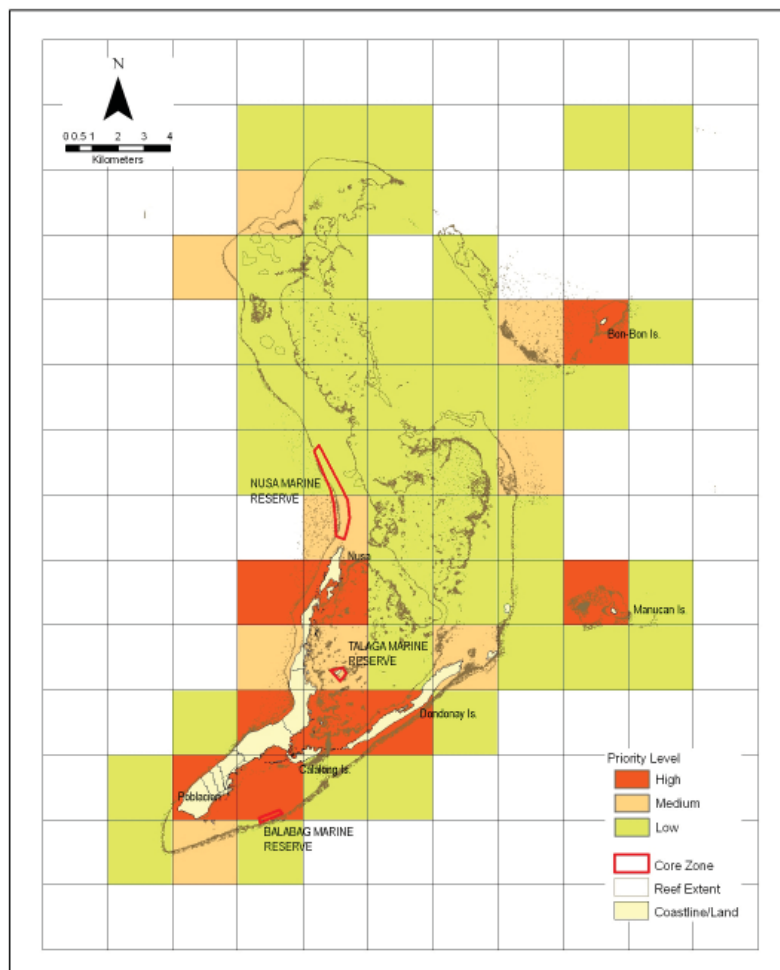


Figure 2. Possible MPA network design for Cagayancillo with ecological (habitat and species-based) and threat criteria considered.

the MBCCs. The maps helped decision-makers and stakeholders in harmonizing locations for their priority marine resource uses, more systematically design the locations and sizes of a network of MPAs, and identify interventions like mangrove rehabilitation. In the future, decisions and inter-town cooperation could be better supported by improved understanding of the network of sources and sinks of various marine populations.

Lessons and Knowledge Gains

- **Confirmation of decisions.** At different spatial scales, results clearly show more objectively the concordance or non-concordance of the recommended sites for MPA

establishment vis-à-vis the location and size of existing ones based on habitat extent, replenishment potential, conditions, threatened species, and threats.

- **Useful tools for decision.** The map-based presentation of data and information from stakeholder perceptions and scientific studies can be useful tools to communicate and to convince various parties and local governments to be part of a network, formally or informally, to achieve a common target. For example, if the goal of the network is to protect at least 20-30 percent of the critical habitats, the corridor-wide MPA network design could be used to help municipalities strategize towards achieving specific goals.

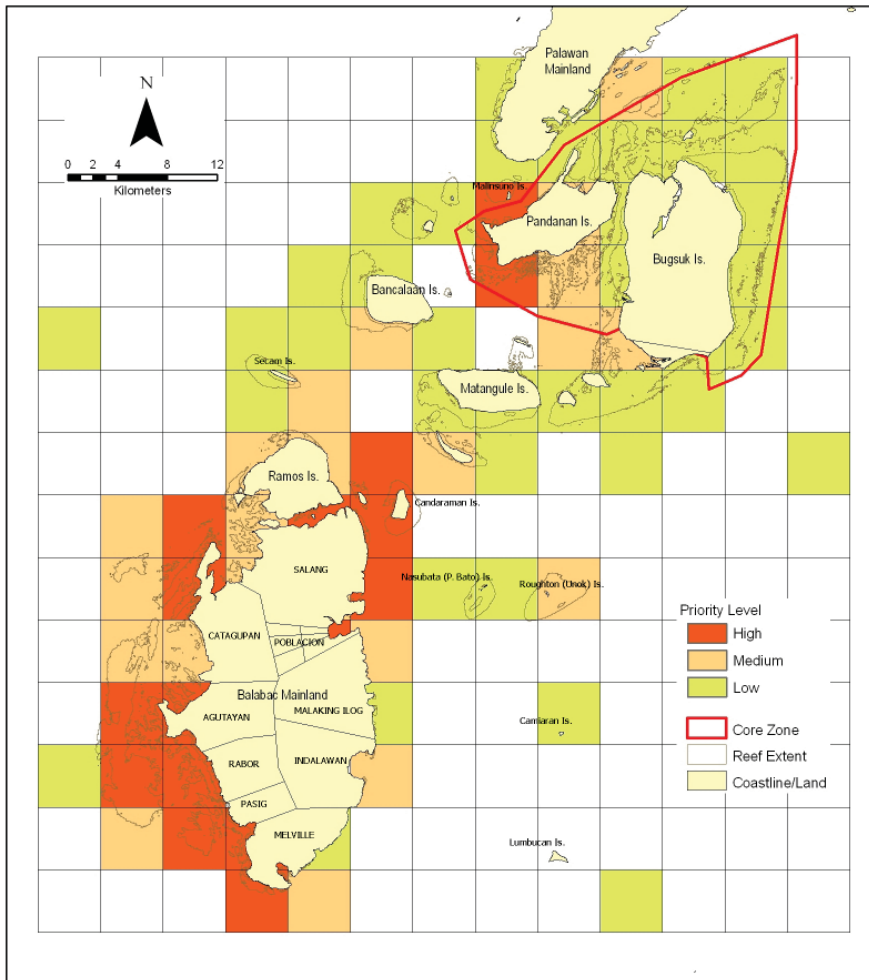


Figure 3. Possible MPA network design for Balabac Strait with ecological (habitat and species-based) and threat criteria considered.

- **Guiding local governments.**

At the municipal levels, local governments can be guided as to where to establish their new MPAs within their respective municipal waters. They can also choose to either expand the current size and configuration of their existing MPAs and/or improve their level of management. The use of a specified grid (i.e., 5 km² for Verde and Balabac and 2.5 km² for Cagayancillo) in the analyses is very useful for local managers to determine the habitat area they can realistically protect and effectively manage given their manpower and the financial resources being allocated.

- **Increasing compliance levels.**

While it is ideal to declare large areas

as no-take (>1,000 ha) to achieve both fisheries and biodiversity conservation objectives, the low compliance of resource users, especially those directly affected by the no-take status, remains a big challenge for local governments. Such a situation will require the local government to allocate a larger budget for enforcement efforts. In most cases, local governments neither have the funds nor the able manpower to effectively enforce fisheries laws. Local governments rely heavily on assisting organizations to provide their local hardware (i.e., boats, gasoline, etc.) and 'software' (i.e., paralegal training, deputization, awareness campaigns, etc.) needs. Developing more innovative ways to attain higher

compliance levels should be the focus of conservation efforts in the municipalities and the MBCCs.

- **Forging alliances.** Local governments can also be guided on ways for beneficial cooperation and forming alliances to address common problems like intrusion of commercial fishing vessels, illegal fishing, etc. Cooperative management with adjacent municipalities will not only minimize costs but also improve effectiveness and sustainability of efforts in the long term.
- **Threat criteria considerations.** The combination of ecological and threat criteria helps focus urgent management interventions where these are most needed at the site level.

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Box 2. Simulation of fishing intensity, protected area and the total size of the reef area in Verde Island Passage (MERF/MSI, 2008).

In this study using the estimated fish biomass, the number of fishers, the intensity of fishing and the total size of the reef area, the Fisheries Information for Sustainable Harvest and Bio-Economic (FISH-BE) model was used to estimate MPA sizes and the maximum number of fishers to be allowed in order to sustain fisheries in Verde Island and Mabini in the Verde Island Passage. Currently, the small reef area and high fishing intensity seems to be the cause for the very low daily catch rates of 1.7 to 2.5 kg/day.

The results of the modeling are provided in Table 1. The proposed MPA sizes in proportion to the total reef areas were very high, at 73 percent and 53 percent for Verde Island and Mabini, respectively.

Table 1. Recommended MPA size (Percentage of reef area) and fishing effort regulation (number of fishers supported by MPA) estimated from the FISH-BE model for Verde Island and Mabini at the Verde Island Passage.

Parameters	Verde Island Passage	
	Verde Island	Mabini
Municipal total reef area (km ²)	1.7	1.0
Municipal fishers (using reef-associated gears)	150	200
Demersal fish biomass (metric tons/km ²)	15.5	36
Municipal catch (kg/fisher/day)	2.5	1.7
Fishing days per year	162	162
% Demersal fish in municipal catch	73	59
Management Options		
MPA size (% of the total reef area)	73	53
No. of fishers that can be supported	30	75

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Box 3. Quantifying change in habitat through remote sensing/GIS in Balabac Strait (Abella, 2007).

Changes in the extent and location of coastal habitats in Balabac were determined through satellite remote sensing and GIS. Image mosaics for 1988-1989 and 1999 were classified into live coral, dead coral, rubble, sand, seagrass, and mangrove. Results showed that corals and mangroves had undergone significant degradation and about 18 percent of the entire area deteriorated.

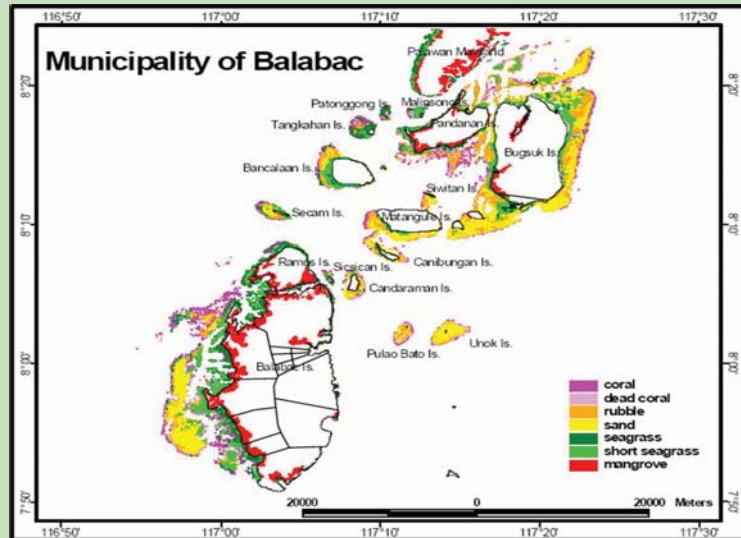


Figure 4. Habitat map based on image classification of Landsat 5 TM images dated 22 April 1989 and 25 September 1988.

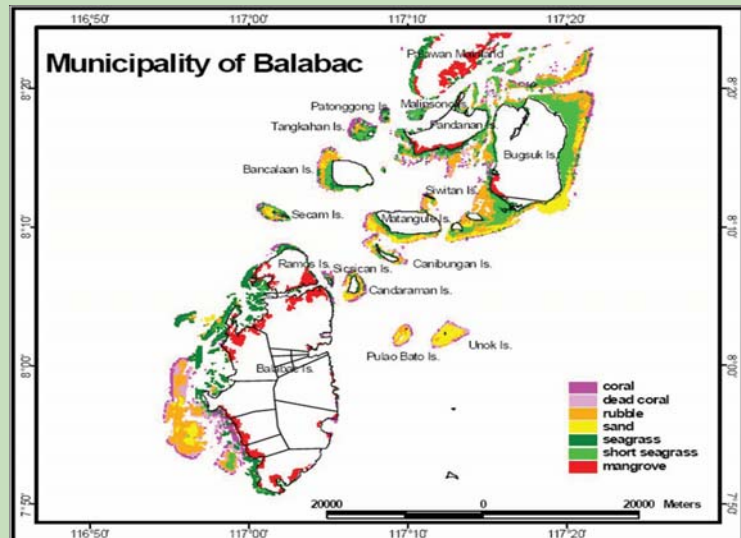


Figure 5. Habitat map based on image classification of Landsat 7 ETM+ images dated 9 September 1999 and 16 September 1999.

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Turtles 'Rap' in the Sulu- Sulawesi



"Turtle rap," isn't something you hear every day. RAP actually stands for the Regional Action Plan for the Conservation of Marine Turtles and Their Habitats in the Sulu-Sulawesi Seascape. RAP represents a framework within which research, conservation, management and awareness activities can take place at local levels, and which are complementary and consistent in their delivery. The Regional Action Plan was put together under the auspices of Conservation International-Philippines, following various consultations at the local and regional levels, and based on the very latest in scientific and technical knowledge. Not the usual long and bulky report, it can be used as a roadmap of sorts for management and conservation agencies to work together for the conservation of this amazing creature.

Turtles in the Sulu-Sulawesi Seascape (SSS) are endangered, threatened with extinction. Their eggs are

collected mercilessly. They are often accidentally trapped in fishing nets. Their underwater turf is often disturbed and their dinner fare ruined at the same time. Yet all too often they are relied on for benefits which would astound the uninitiated: Tourism at just one location, for instance, the Sabah Turtle Islands Park reaps in revenue in excess of one million dollars a year. The Philippine Islands have the same potential.

Other resorts rely on turtles underwater to keep patrons happy – Tubbataha, Sipadan, Lankayan, Manado, etc. Turtles are also valued for the roles they play in our traditions, and for the unforgettable memories they provide.

But in the face of countless and varied pressures, how does one protect an animal so graceful and yet still continue with business 'as usual'? How do we promote fishing, yet keep turtles away from the nets? How do we make sure the reefs and seagrass beds continue to provide sustenance to turtles, and to mankind at the same time? How do we make sure everyone plays using the same playbook, learns from the same

teachings, and acts from the same principles? With great difficulty!

But there are things that can be done. Technology exists which can allow both sides of the equation. For instance, we know turtles drown when caught in trawl fishing nets. But we also know that a simple metal grid can allow the exclusion of the turtles and continue the capture of fish and shrimp. The technology exists. Over the years, awareness materials have been developed. What has not been around, until now, is a cohesive framework in which to implement these tools.

With the marine turtle RAP, each country is now in a position to complement other actions in the region. Understandably, the very nature of the work means there will always be limited resources to do what is needed, and so a prioritization of sorts was needed. RAP provides this. A suite of options was also needed, because not everyone needs to do everything, and not all the time. RAP also sings this tune. RAP addresses reduction of direct and indirect causes of marine turtle mortality; and addresses

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protection of marine turtle habitats. It addresses research and monitoring, community participation, public awareness, information exchange and education, and capacity building – making sure everyone has the skills to do what is needed.

But it does all of this in a focused manner. RAP sets desired targets. For instance, there is great difficulty in setting an objective which reads “replenish turtle stocks” because there is no measurable outcome. When will the stocks be considered replenished? When numbers double? When they go up by 10 percent? How will one know that the target has been reached? Instead, RAP provides desirable targets such as “Reduce mortality of eggs and hatchlings caused by feral and domestic animals by 80 percent within three years.” RAP also sets out expected outcomes, with timeframes and priority rankings, and performance indicators to make sure targets are met. The basic premise was to provide stakeholders with a document which would allow for complementary activities, through the provision of a suite of activities and goals from which to select depending on each nation or location’s needs, resources and priorities. Conservation is a complex business. By its very nature, it demands a wide range of approaches and initiatives, from direct prohibitions to awareness to provision of alternative means of income to those impacted by conservation needs. It also provides the cornerstone for sustainability or the ability of resources to keep renewing themselves in light of continued pressures.

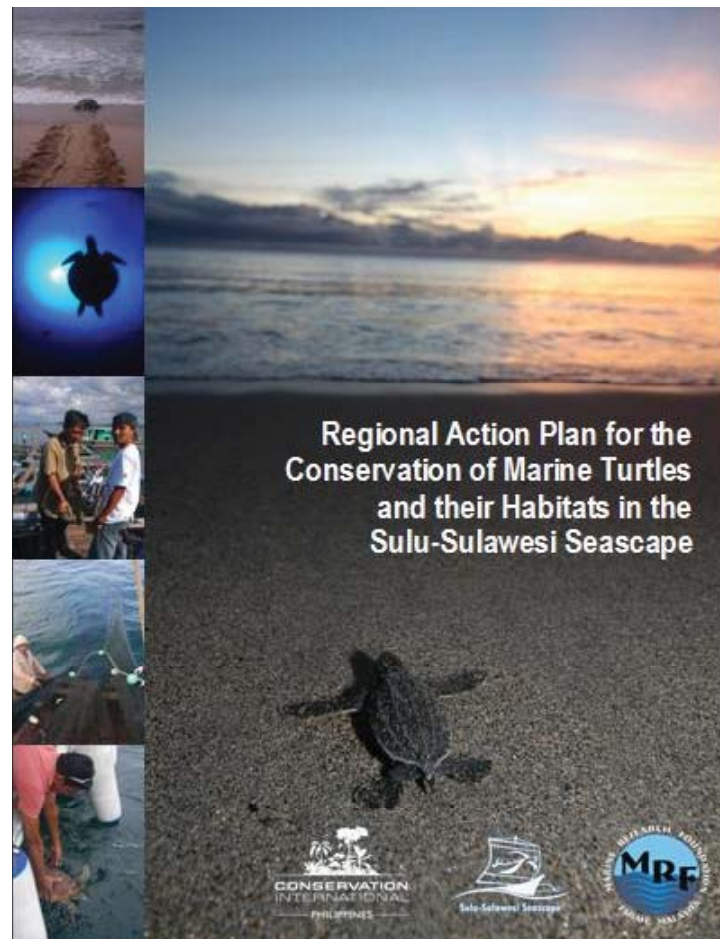
The plan draws on previous grey and scientific literature on the subject, discussions held during numerous training courses, and a selection of varied country projects as the basis for determining conservation needs and actions which will result in the sustainable management of marine turtles in the seascape shared by the three SSS countries: Indonesia,

Malaysia and the Philippines. The Plan draws its structure and recommended courses of action from both the Global Strategy for the Conservation of Marine Turtles, published by the Marine Turtle Specialist Group of the IUCN (The World Conservation Union) Species Survival Commission, and the Conservation and Management Plan which was developed as part of the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA), an agreement reached under the auspices of the Convention on Migratory Species which covers the Indian ocean and its associated bodies of water, including the Sulu-Sulawesi region. The structure of the Plan reflects the combination of the two instruments,

and where possible, and to avoid duplication, attempts to maintain similar language for consistency.

Activities to promote the conservation of marine turtles and their habitats were grouped into eight major categories, with actions listed under each of the major categories being non-exclusive, and often overlapping with actions under different components. The main components are:

1. Reducing direct and indirect causes of marine turtle mortality;
2. Protecting, conserving and rehabilitating marine turtle habitats;
3. Research and monitoring;



4. Public awareness, information and education;
5. Community participation in conservation;
6. Building capacity for conservation, research and management;
7. Integrated management for marine turtles; and
8. Realizing funding for marine turtle conservation.

Timeframes are provided under each “expected result and outcome” to indicate the number of months that will be required to achieve the result or outcome, following the formal adoption of the RAP.

Levels of urgency are also provided for each action and categorized as: **Very Urgent**, where immediate action or intervention is required, as for example to protect habitats and ecosystems under severe threat; **Urgent Action**, where intervention is required to ensure the continued viability of species, communities or ecosystems of regional or global importance; and **Priority Action**, where there is an institutional set up or there are ongoing projects and

opportunities for cooperation with existing efforts.

The priority designation for each of the expected results and outcomes was devised using a number of criteria, which included the available knowledge on the effectiveness and response times for various conservation actions in the past, the potential impacts of prescribed actions on marine turtle populations, the status of marine turtle nesting and foraging populations in the Sulu-Sulawesi Seascape and beyond, and the expected levels of technical input and investment of resources for the conservation of marine turtles and their habitats by the various government, research and conservation agencies.

A series of actions/indicators complement each section. These are based on a SMART programmatic approach:

- Simple - Is the indicator easily interpreted, monitored, and appropriate for community use?
- Measurable - Can it be statistically verified, reproduced and compared? Is it able to be aggregated? Is it responsive to

changes in management? Does it show trends over time?

- Accessible - Can it be regularly monitored? Is it cost-effective? Is it consistent with other data sources?
- Relevant - Is it related to a valued natural resource management factor? Is it linked to regional natural resource management goals and priorities?
- Timely - Does it provide an early warning of potential problems and highlight future needs or issues?

The bottom line is for the conservation of turtles at a regional scale to be effective, and for the Regional Action Plan to have a realistic chance of succeeding in future years. Thus, the Plan proposes that all future conservation actions will need to be built upon four fundamental foundations:

1. having a clear logical pathway that maps the routes from implementation to conservation outcomes;
2. setting realistic outputs, measurable deliverables, and long-term objectives;



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3. having the right people to do the job;
4. being cooperative, inclusive adaptable and sharing, and finally be acceptable to the general public.

However, despite a significant amount of work at particular sites, there still exist a number of gaps in the knowledge of the status of marine turtles and their habitats and the particular conservation requirements in the Sulu-Sulawesi Seascape. Research has been focused largely on nesting habitats, and little attention has been paid – until now – to their foraging domain, where they spend over 95 percent of their time. Conservation actions have thus been linked to nesting beaches, and protection of adult turtles and eggs. Conservation schemes have ranged from awareness campaigns to programmes of gradual reduction in turtle egg dependence to outright protection of nesting beaches themselves. Looking forward, the Plan takes into consideration existing efforts, but expands on these to address conservation needs in a series of major programmes based closely on the IOSEA MOU Conservation and Management Plan.

In the SSS, female turtles are still slaughtered while they nest, and a number of adults and juveniles are caught in nets in shallow water environments. Turtles are also often accidentally killed in coastal gillnets and by local and foreign commercial shrimp trawlers which operate in nearshore waters. Hatchlings and eggs are threatened by tourism and industrial development, and eggs are collected indiscriminately throughout the turtles' range. The Plan addresses the reduction of direct and indirect mortality of turtles, and tackles this through six themes comprising 27 focus areas. To reduce direct and indirect mortality to turtles, the plan focuses on identifying and

documenting the threats to marine turtle populations, minimizing threats, implementing programmes which provide alternatives to communities dependant in some manner on marine turtles, regulating the direct capture or killing of, and domestic trade in, marine turtles, their eggs, parts or products, developing nesting beach management programmes to maximize hatchling recruitment, and promoting marine turtle rescue and rehabilitation activities.

Several of the SSS coasts are in excellent condition, but threats from unregulated development, pollution sources and shipping mishaps have already, or threaten to, reduce the quality of nesting beaches and foraging sites. Coupled with this are factors such as global warming which impact coral reefs through bleaching, further reducing the quality and nutritional content of coral reefs, and erosion which impacts nesting beaches. Thus the second theme revolves around protecting and

conserving marine turtle habitats, which is addressed through two themes (establishing the measures necessary to protect marine turtle habitats and rehabilitating degraded habitats) comprising 11 focus areas.

Thirdly, the need for information concerning marine turtles and their nesting beaches is widely understood by research, conservation and management agencies in the region, but regarding their foraging habitats, this is mostly lacking or only recent and limited in scope, and not yet of use for determining population trends in the SSS. Given the life history characteristics of marine turtles, long-term monitoring is needed to detect changes in population structure and size at both nesting and development and foraging grounds, and information on development habitats for turtles in the SSS region is virtually non-existent. The Plan addresses the need for research and monitoring through three themes comprising 26 focus areas. To address research and monitoring,





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the plan focuses on conducting and expanding studies on marine turtles and their habitats, strengthening collaborative research and monitoring efforts, and information exchange mechanisms.

Fourthly, many of the SSS's coastal communities remain unaware of the dire condition of many turtle populations, with little knowledge of nesting patterns or maturation periods, natural survival, and the impacts of mankind's actions. Turtle conservation issues are generally not widely publicized to those who impact them the most — remote coastal communities, tourism markets, commercial enterprises and government policy makers. Thus community participation in conservation schemes, public awareness and information exchange are key issues to be dealt with. The plan addresses the need for information exchange, community participation and education through five themes comprising 28 focus areas. These focus on expanding and implementing public education, awareness and information programmes, promoting general public participation, expanding government involvement and promoting shared responsibilities, integrating community development with environmental education, and establishing mechanisms to continually evaluate community practices as they impact marine turtles and their habitats.

There is also a critical need to address capacity for conservation, research and management within the SSS, which the Plan addresses through two key themes (training and capacity building, and provision of resources) which cover ten action items, and to integrate turtle management across government managerial levels and internationally. There exists a clear interconnectivity among habitats on which marine turtles depend and which conflict with a number of other sectors,

including fishing, tourism, shipping and housing and defence. However, this interconnectivity among marine ecosystems and their inhabitants, which are also ecosystems and species upon which humans depend, are poorly or not at all understood. For instance, nesting and foraging habitats need to be considered in coastal planning but often commerce and tourism predominate in decision-making, to the detriment of wild flora and fauna. The Plan addresses integration of conservation efforts through four themes comprising 16 action focus areas. The four key themes within this context are cooperation and promotion of information exchange, enforcement and legislation, use of data in management, and implementation of international legal instruments.

Finally, the issue of required funding is addressed while taking into consideration the need to secure funds for turtle conservation and leverage existing resources to provide incremental value to conservation efforts, and developing concrete conservation outputs and timeframes. Many conservation efforts in the SSS still struggle to clearly articulate their conservation goals and targets, even though they are direct interventions promoting turtle conservation.

The Plan has obviously benefited from many past initiatives, and brings these together cohesively as a way forward for truly regional approaches to conservation, building on the strengths of 'good' initiatives and learning from the deficiencies of 'poor' ones. It is hard to designate a conservation initiative as 'poor' if it is doing something positive for the environment — but there are always areas for improvement.

What is required now is the formal adoption of the marine turtle RAP by the member countries, and the gradual implementation of its contents. Only then will the people rap along with the turtles.

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Enforcement of Coastal and Marine Environmental Laws in the Sulu-Sulawesi Seas

While the Philippines has many reasons to develop its marine protected areas (MPAs), the day-to-day responsibility for maintaining it falls on many stakeholders. More often, once MPAs are established, communities struggle with lack of funding, government support and facilities, and weak enforcement of coastal and marine environmental laws.

While there are numerous laws that provide policy and regulatory framework for coastal management, these laws are not enforced fully for a variety of reasons. Oftentimes, laws are poorly understood and resources allocated for their enforcement and prosecution are frequently not enough.

In the four marine biodiversity corridors, namely the Verde Island Passage, Cagayan Ridge, the Balabac Strait and the Tri-National Sea Turtle Corridor, implementation, compliance and enforcement of environmental laws vary.

The Philippine Fisheries Code of 1998 (Republic Act 8550) is the main national law on fisheries. It gives local



Cyanide fishing is among the illegal activities reported in the Verde Island Passage, Cagayan Ridge and the Tri-National Sea Turtle Corridor.

(Photo by Jüergen Freund)

governments the role of managing fisheries resources within 15 km from the coast, and the Department of Agriculture's (DA) Bureau of Fisheries and Aquatic Resources (BFAR) the role of managing fisheries resources in territorial waters beyond the 15-km boundary. In addition to DA Administrative Orders, local governments also pass local laws regulating fishing gears, harvestable species, fishing areas, and imposing fees and penalties. These local laws tend to be based upon model ordinances or developed in response to adverse experiences. They frequently require further consideration of implementation issues, in terms of stakeholder consensus, preventive strategies, resources required vis-à-vis resources generated, and violations proven in judicial proceedings (Luna, 2007). Illegal activities reported within the three marine biodiversity corridors include the use of dynamite, cyanide, fine-mesh nets, and other forms of destructive fishing; capture and trade of endangered and protected marine species including corals, sea turtles, dugong, whale sharks, manta rays, dolphins and whales; and operation of commercial-scale fishing boats within 15 km of the shore, legally reserved for small-scale fishers, or within protected areas.

Some of the specific activities and issues in the four marine biodiversity corridors are outlined below.

a. Verde Island Passage

An enforcement crusade by local governments and *Bantay Dagat* volunteers ("bantay dagat" is a Filipino term to denote "sea watch") in the Verde Island Passage supported by the World Wide Fund for Nature (WWF-Philippines) from 2000 to 2003 and by Conservation International-Philippines from 2006 to 2008 may have reduced the incidence of

Table 1. Number of apprehensions for coastal-related violations in Batangas (from Gutierrez (2007) for 2000-2003 data, Trono and Gutierrez (2007) for 2006-2007 data, and from PEMSEA survey for Bantay Dagat members in 2008).

Year	Municipalities in Batangas Province	Number of Bantay Dagat members	Apprehensions		Average/year	
			Violators	Cases filed	Violators	Cases filed
2000-2003	Mabini, Tingloy, Calatagan, Nasugbu, Balayan, and San Luis	174 in 2003	625 fishers	70	130	18
April 2006-February 2007	Mabini, Tingloy, Calatagan, Nasugbu, Balayan, and Lobo	131 in 2008	79 fishers; 9 divers	14	88	14

destructive fishing and commercial fishing intrusion in municipal waters (Table 1).

The Bantay Dagat initiative began in the municipalities of Mabini and Tingloy in 2000 and expanded to San Luis and Calatagan in 2001. The Bantay Dagat Network was established in June 2002 and was joined by Nasugbu and Balayan municipalities by the end of the year. The network included 174 Bantay Dagat volunteers in the six municipalities by 2003, supported by a lawyer to help in the filing of cases. Fish catch monitoring suggested an increase in catch per unit effort of longlines with multiple hooks (*kaskas*, September 1999-2000 vs. September 2001-2002; and *hayhay*, September 1999-February 2000 vs. September 2001-February 2002) over the first two years of the crusade (Enderez, 2004).

The Sulu-Sulawesi Seascape project supported information campaigns, strengthened capabilities of Bantay Dagat volunteers, and helped to expand the Bantay Dagat Network to other municipalities. The project also conceptualized a draft Verde Island Passage Marine Biodiversity Conservation Corridor Enforcement Strategy in 2007.

To date, capacity-building activities included deputation trainings in coordination with BFAR, additional paralegal trainings, Bantay Dagat team building and Advance Fishery Law Enforcement Training, which covered map reading, GPS use, water survival techniques, and proper search and boarding procedures. An additional 59 volunteers were deputized as Fish Wardens by the BFAR, while 36 existing Bantay Dagat volunteers from nine (9) network member organizations attended the Advance Fishery Law Enforcement Training.

The Verde Passage Enforcement Strategy

The enforcement of coastal and marine environmental laws requires: (a) support of key stakeholders; (b) the development and implementation of information campaigns; (c) enhanced organizational capacities for local initiatives; and (d) increased patrolling and enforcement efforts.

The Verde Passage Enforcement Strategy was designed to support the institutionalization of the Bantay Dagat group, considered the participatory approach to coastal law enforcement in the Philippines. The first step undertaken for its institutionalization

was the attempt to have the group recognized through an Executive Order at the provincial level. This way, overall coordination and provision of logistic support for the operations of the Bantay Dagat groups can be provided by the Provincial Government. Some network members voiced some reservations on this approach due to lack of certainty of continued and committed support from the provincial government. However, the change in leadership during the 2007 elections influenced the shift in viewpoint with regards to the institutionalization process.

In line with the then-ongoing move of formalizing the three-tiered integrated coastal management (ICM) Councils (**Figure 1**) to implement the Batangas Strategic Environmental Management Plan, the majority of the

network members decided to pursue the incorporation of the enforcement groups into the ICM councils at the municipal, bay-wide and provincial levels. Being recognized and holding membership in the councils was seen as a good alternative, providing access to policy makers as well as potential funding support from municipal and provincial government agencies, including the Provincial Government-Environment and Natural Resources Office (PG-ENRO), which acts as the Secretariat to the ICM Councils.

Future plans

Future plans for the corridor include the formal organization of the Batangas network through an MOA creating a provincial enforcement network, to be signed by the participating municipalities and cities together with

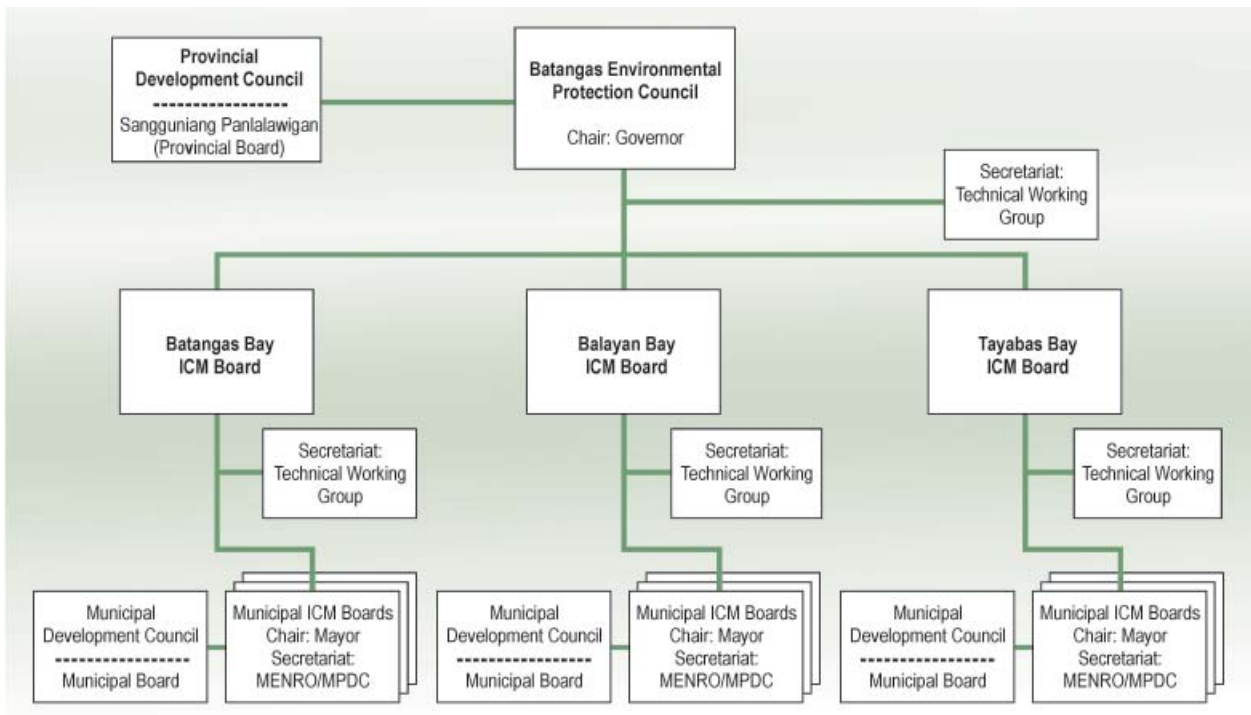
the Provincial Governor. The provincial government of Oriental Mindoro is also in the process of forming a provincial enforcement network.

Bay-wide or inter-LGU social networks can also help address common issues and problems shared between neighboring towns. An apparent increase in awareness among Bantay Dagat groups, LGU officials and the general community concerning the importance of a united and concerted effort to protect and conserve coastal and marine resources bodes well for the long-term success of conserving the Verde Island Passage Marine Corridor.

b. Cagayan Ridge

Cagayan Ridge includes the Tubbataha Reef National Park where all extractive activities are prohibited.

Figure 1. Three-tiered organizational structure of the Batangas Environmental Protection Council.



¹ Municipal Environment and Natural Resources Office (MENRO)
² Municipal Planning and Development Coordinator (MPDC)

Park enforcement improved with the Global Environment Facility (GEF) project implemented through WWF in 2000. CI-Philippines assisted in the formulation of Presidential Proclamation 1126 which expanded the Tubbataha Reef National Park from 33,200 ha to 96,828 ha, including Jessie Beazley (**Figure 2**) and provided the basis for an increase in the valuation of ship grounding damage from PhP4,000/m² to PhP12,000/m² (US\$89/m² to US\$267/m²).

A new 100-hp outboard engine and assistance from the Seascope project enabled the Tubbataha Management Office to increase patrolling

frequency from the mandated 96 patrols/year to 138 patrols in the 14-month project period. As a result, 27 fishing boats with 148 illegal fishers were arrested and 48 cases were filed representing considerable increases over previous years. Table 2 presents patrols conducted, violators arrested and cases filed from September 2000 to June 2007.

Table 2. Patrols conducted, violators arrested and cases filed for violations in Tubbataha Park (September 2000 to June 2007).

	September 2000 - March 2006	April 2006 - June 2007
Patrols/year	~65	110
Fishing boats arrested/year	3	22
Fishers arrested/year	18	118
Cases filed/year	7	38

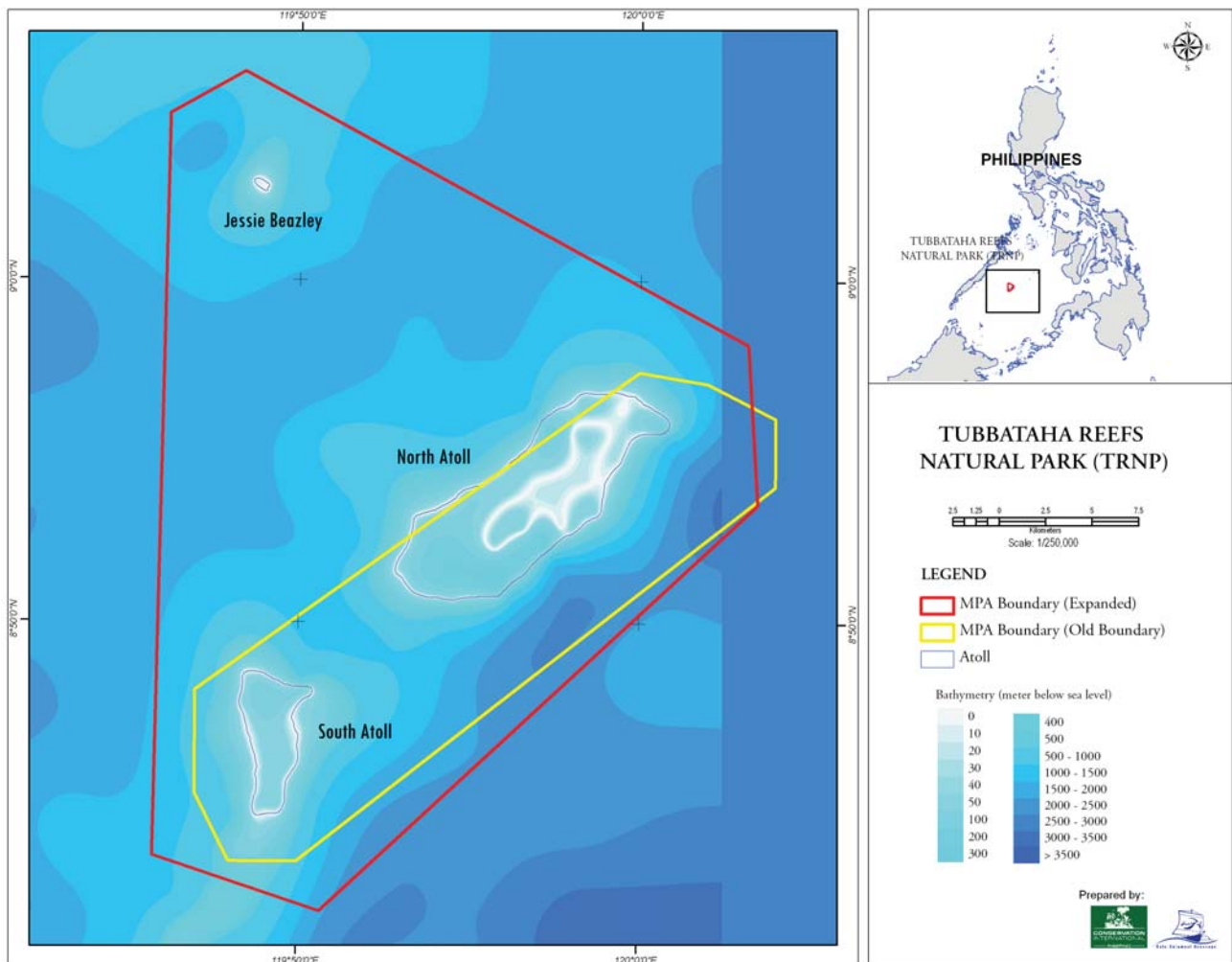


Figure 2. Old and new boundaries of the Tubbataha Reef National Park.

c. Balabac Strait

Balabac Strait has been reported as a transshipment point for the live marine turtle trade. Apprehension of fishing boats in the Balabac Strait increased from 1 in 2005 to 27 in 2006, and 24 in 2007 (**Figure 3**). Of these reported cases, violations of turtle capture by foreign fishing vessels and fishing using pressurized air to drive out fishes were filed in court. All compressors used in the illegal fishing activities were confiscated in compliance with a provincial ordinance.

The Sulu-Sulawesi Seascape project supported a planning workshop and two trainings on coastal law enforcement in 2006. These have contributed to the abovementioned increase in apprehensions in 2006.

Training participants included local community enforcers, representatives of community organizations and barangay (village) fisheries and aquatic resource management councils (BFARMCs), elected village leaders, municipal and provincial government personnel (i.e., Palawan Council for Sustainable Development staff) and personnel of the Philippine National Police, Philippine Navy, Philippine Marines and BFAR.

The re-assignment to other areas of some recently-trained police and navy personnel, a change in government officials and associated law enforcers after the 2007 elections, and the lack of budget and boats, indicate a need for further communication and capacity development at the local levels.

d. Tri-National Sea Turtle Corridor

The Sugud Islands Marine Conservation Area (SIMCA) is a model for public-private engagement in MPA management in the Sulu-Sulawesi Seascape. SIMCA is a group of three

Box 1. Estimating Appropriate Fines for Ship Grounding in Tubbataha.

Rosales (2006) provides an example of designating values on environmental goods and services, specifically estimating the cost of the damages to coral reefs caused by ship grounding in Tubbataha.

Two methods were used in estimating the total economic value (TEV) of the damages to coral reefs.

One method, called the “production approach,” puts an estimated value on the goods and services produced by coral reefs. The estimate was based on the allowed activities in the Tubbataha reefs: recreational diving and research, and contribution to fish productivity beyond the park. An annual economic value of PhP208 to PhP211 per m²/year was estimated. However, ship grounding extensively harms coral reefs and the entire ecosystem and will need more than a year to recover.

When left by itself, it would take decades for coral reefs to regenerate. The fastest recorded natural regeneration took 20 years in the Great Barrier Reef in Australia. Experts say that some coral reefs would take 70 years (Quibilan, personal communication).

Due to the wide discrepancy of estimates, this particular study used 45 years as the average number of years it would take for a coral reef to regenerate. The proposed recommended minimum fine for ship grounding using the production approach is thus estimated at PhP9,500/m² (PhP211/m²/year for 45 years).

Human intervention speeds up the regeneration of coral reefs which are then factored in computing costs such as capital, operational and labor expenses.

The second method, called the “restoration cost approach” used estimates of the costs involved in substate stabilization, structural restoration, coral transplantation and enhanced biological restoration. Capital costs include pre-construction and construction costs; operational costs include materials, equipment, staff wages and administration costs; and labor costs involve supervision, training and labor for actual activities for restoration. Restoration cost was estimated at PhP44 million or PhP15,000/m².

The study proposes that the fine for ship grounding of PhP4,000/m be increased to between PhP9,500 and PhP15,000 per m².

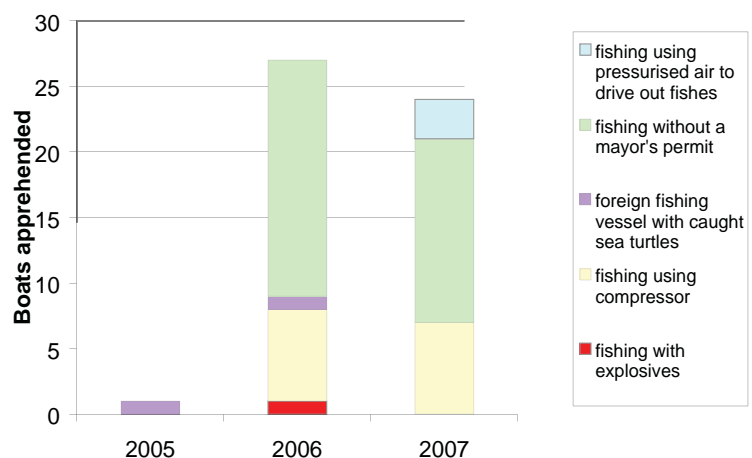


Figure 3. Boats engaged in illegal fishing apprehended in Balabac.

protected islands, namely, Lankayan, Bilean and Tegaipil. These islands are located off Sandakan, Sabah in Sulu Sea. It is a secondary nesting area for sea turtles and its surrounding waters are used as foraging and feeding areas by turtles.

Lankayan Island is fully developed for dive tourism. Occasionally, tourists get the opportunity to witness the emergence of turtle hatchlings from the nursery which maintains eggs laid on the island. Development of facilities on Bilean Island started in 2007 while Tegaipil has no facilities at all.

CI and Reef Guardian aim to strengthen the management of SIMCA by establishing sea turtle monitoring and increasing law enforcement activities. While the project's duration was from June 2006 to January 2008, it formed part of a regular long-term monitoring program being established to improve the overall management and environmental law enforcement in SIMCA. The partnership with CI contributed in increasing the capacity of Reef Guardian staff for enhanced management of SIMCA. To improve law enforcement, CI supported the recruitment of three additional staff (i.e., 1 marine technician and 2 enforcement crew) bringing to 10 the total number of Reef Guardian staff. Their capacities were enhanced through training on basic navigation, use of global positioning system, and radar operation. They were trained by the Sabah Wildlife Department as honorary wildlife wardens, providing them knowledge and skills in the process of stopping fishing boat/vessels, search and inspection, determination of activities that violate the Wildlife Conservation Enactment of 1997 and familiarization with endangered and CITES-listed species, and report writing.

The various capacity-building activities yielded the following results:

1. Sea patrol around SIMCA progressively increased from 56 patrols in 2005 to 100 in 2006 and 134 in 2007 (239% increase from 2005 baseline);
2. Fishing boats stopped and inspected increased from 77 in 2006 to 118 in 2007 (153% increase);
3. Total boats detained increased from 5 in 2006 to 16 in 2007 (31% increase);
4. In December 2006, a fishing trawler was stopped and one live female turtle was found caught in the net. The boat was detained and its crew strictly warned.
5. In 2007, one fishing boat using sodium cyanide, was apprehended near Lankayan Island in February; one at Tegaipil Island in October. Three dynamite fishing boats were arrested around Lankayan Island in October-November during joint operations with Marine Police Sabah. Fishing boats were

confiscated and boat owners fined.

Despite these gains, there remains a need to expand law enforcement efforts in SIMCA, through increased manpower, improvement of facilities (e.g., more sensitive radar system and patrol boats) and expansion of cooperation with law enforcement agencies. There is also a need to source funds to support law enforcement expansion.

Project support for floating ranger stations and patrolling in the Berau Coastal and Marine Conservation Area (Indonesia) has resulted in the apprehension of and legal proceedings against a foreign vessel with 12 crew and carrying 387 dead sea turtles. Legal support was provided to a case against a foreign fishing vessel caught in the Philippine Turtle Islands.

Although not specifically focused on environmental law enforcement, the Malaysia-Philippine Border Patrol Coordinating Group, the Malaysia-Indonesia (MALINDO) Operation and the Philippines-Indonesia Permanent Joint Working Group on Maritime and Ocean Concerns, also continue to



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foster cooperation in law enforcement in the tri-national sea turtle corridor (Tri-National Committee on the SSME, 2007 and Palma and Tsamenyi, 2008).

Valuable Experiences, Practical Knowledge

Practical knowledge and valuable learning have been gained in the enforcement of coastal and marine environmental laws in the seascape of the Sulu-Sulawesi.

These include:

1. Illegal fishers adapt their methods to that of the enforcers', hence, enforcers need to stay vigilant and innovative in the conduct of operations.
2. The law enforcement and prosecution process involves multi-party cooperation as shown in the cooperation of Sandakan Marine Police and Sabah Wildlife Department which made possible the completion of the process of arrest, detention and prosecution. Appreciation of environmental laws by the judiciary also helps.
3. Enforcers must take into account activities at night, at their borders and outside MPAs, too. For example, fishers using sodium cyanide are sometimes deployed to shallow reef areas by a mother boat anchored outside SIMCA and not easily detected.
4. Broader management of the coastal area is equally important in enforcing and reducing illegal fishing practices, such as through proper licensing and ICM.

While stakeholders for marine biodiversity have had significant gains, gaps remain: political will to enforce laws needs to be built; remote locations require guarding;



Participants take part in various activities during the Advance Law Enforcement Training held in Calapan City.

and capacities need strengthening. Enhancement of the capability, accessibility and responsiveness of the judicial system and an improved coordinated intelligence for enforcement of environmental laws are likewise needed.

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By Romeo Trono, Sebastian Troeng and Sheila Vergara

Zooming Into the Future of the Sulu-Sulawesi Seas

... a seascape characterized by complex oceanography and exceptionally rich marine biodiversity

... a seascape located amid three nations of the Southeast Asia region: Indonesia, Malaysia and the Philippines.

... a seascape whose rich legacy is under threat

In spite of the waters that divide the peoples of Indonesia, Malaysia, and the Philippines, the ecoregion remains as a uniting factor. The stakeholders of the three countries are drawn towards a single aspiration of securing their future by conserving its biodiversity. Nongovernmental organizations, local and national governments, international and regional organizations, funding sources and foundations, and various stakeholders have joined efforts and engaged in partnerships to address the urgent threats to marine biodiversity and to strengthen governance of this common resource.

The rich biodiversity in the Sulu-Sulawesi Seascape is challenged by threats from rapidly increasing human populations who have very little access to financial and social services and are very dependent on marine resources. Overfishing and destructive fishing methods are commonly used. Marine ecosystems

are being eroded or destroyed by various types of pollution and habitat-damaging activities. Levels of governance are disconnected and capacities of stakeholders and governments are inadequate.

Foundation Strengthened

As articulated by Miclat and Trono in this edition of *Tropical Coasts*, the foundations of this initiative were developed in the process of preparing the Conservation Plan for Sulu-Sulawesi Marine Ecoregion (SSME). The implementation of this initiative has been taken up, since May of 2005, by a partnership led by Conservation International, with generous support from the Walton Family Foundation and other donors, through the Sulu-Sulawesi Seascape (SSS).

The SSS project focused on some of the many priority conservation areas identified in the Ecoregion





Juergen Freund

Conservation Plan (ECP). The first three years of SSS employed a two-pronged approach, building a strong foundation for a long-term conservation programme and implementing actions to address immediate threats to biodiversity.

The project took strategic actions in four marine biodiversity conservation corridors: Verde Island Passage, Cagayan Ridge, Balabac Strait, and the Tri-National Sea Turtle Conservation Corridor, which involves Indonesia, Malaysia and the Philippines.

Immediate and long-term initiatives under the project were geared towards providing the science to identify the necessary locations of marine protected areas, generating stakeholder support and providing support to enforcement activities.

In June 2007, the largest gathering of stakeholders in Sulu-Sulawesi Seas, since the Sulu-Sulawesi ECP was developed in 2003, was convened.

The meeting, known as the Sulu-Sulawesi Seascape Congress, was a gathering of representatives from governments, nongovernmental organizations, academe and the private sector where achievements were shared:

- a. scientific characterization of marine conservation corridors for better management;
- b. status and studies of marine species and recommendations for improving conservation;
- c. law enforcement framework and challenges;
- d. policies and financing options relevant to conservation;
- e. capacity building and information for coastal management; and
- f. prioritization of issues and actions

for conservation in the various corridors and for the Sulu-Sulawesi.

Future directions for the seascape were charted by the gathering.

Governments have taken bold steps

Philippine President Gloria Macapagal Arroyo signed an Executive Order “Establishing the National Policy on Biological Diversity, Prescribing its Implementation throughout the Country, particularly in the Sulu-Sulawesi Marine Ecosystem and the Verde Island Passage Marine Corridor” (See **Box 1**).

Indonesian President Yudhoyono led six countries (Indonesia, Malaysia, Philippines, Papua New Guinea, Solomon Islands and Timor-Leste) in launching the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security. (See **Box 2** for CTI goals and objectives, and **Table 1** for Proposed subprojects of the Coral Triangle Initiative.)

Efforts on capacity building have improved management skills in various coastal conservation aspects and coordination among government agencies and private organizations. Studies, research, and marine surveys have helped identify priority sites for MPA designation and established baselines to measure effectiveness of marine conservation efforts. Findings served as bases for decision-making. Marine protected areas (MPA) networks were formed to maximize synergies in management efforts through sharing of experiences, knowledge and skills. Increased sea patrols have resulted in the apprehension of fishing boats and the arrest of fishers employing illegal means of fishing.

Yet, much remains to be done especially with regard to protected areas, enforcement, livelihood and financing.

Moving Forward

By 2012, key players and stakeholders hope that an alliance of partners will have implemented a sustainable seascape strategy through effective conservation interventions designed for a range of marine biodiversity in the Sulu-Sulawesi Seascape.

The 2007 Seascape Congress concluded that future Sulu-Sulawesi Seascape efforts should continue to focus on strengthening a network of organizations and protected areas including the tri-national governance mechanism, motivating action through communication, law enforcement, integrating conservation with livelihood and economic development, developing sustainable financing mechanisms including through user fees, a range of donors, and oil-and-gas corporate social responsibility programmes, accelerating transboundary fisheries and species conservation efforts (dugongs, cetaceans, whale sharks) and monitoring and evaluation in Verde Island Passage, Cagayan Ridge, Balabac Strait and the Tri-National Sea Turtle Corridor and potentially the Sulu Archipelago and/or the Davao–North Sulawesi corridor.

Donors and funding institutions have expressed interest to support the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security. These institutions, among others, include the Asian Development Bank (ADB), Global Environment Facility (GEF), the World Wide Fund for Nature (WWF), Conservation International, The Nature Conservancy (TNC), U.S. Agency for International Development (USAID), and the Australian Agency for International Development (AusAID).

Proactive and Positive

Despite the current threats to coastal and marine resources, the Sulu-Sulawesi

Box 1. Executive Order 578.

Executive Order 578 Establishing the National Policy on Biological Diversity, Prescribing its implementation throughout the country, particularly in the Sulu-Sulawesi Marine Ecosystem and the Verde Island Passage Marine Corridor.

- Prescribes the policy of the state on biological diversity
- Directs concerned government agencies and local government units to integrate and mainstream the protection, conservation and sustainable use of biological diversity into their policies, regulations, programs and processes and to actively collaborate with private sector and civil society in biodiversity conservation
- Prescribes the development of regulations for the establishment of critical habitats within key biodiversity areas and guidelines for their management
- Prescribes the integration of biodiversity impact assessments in the Environmental Impact Assessment and Environmental Risk Assessment processes
- Instructs the Presidential Commission for the Integrated Conservation and Development for the Sulu-Celebes Seas to update the SSME conservation plan, create a Task Force to prepare a plan for and to ensure protection, conservation and sustainable use of biodiversity in the Verde Island Passage, and develop management strategies for other SSME biodiversity corridors
- Prescribes the inclusion of budget to support the policy in General Appropriations proposals to Congress and obliges members departments of the Presidential Commission and Task Force to share financial and technical resources

Seas offer opportunities to achieve conservation, development and sustainability goals.

Through joint actions and partnership engagements at the ecoregional level with complementary initiatives at the national levels, biodiversity in the Sulu-Sulawesi Seas can be comprehensively managed. Short- and long-term actions could be planned and implemented

in a more systematic and coherent manner. Due to the large coverage of the marine ecosystem, financial resources and technical assistance could be sourced from many stakeholders at various levels. Economic, educational, and recreational initiatives could be engaged in by local communities who stand to benefit from conservation initiatives for their sustenance and livelihoods.

Through partnerships among various stakeholders, different forms and levels of support, and with the commitment of local communities, successful biodiversity conservation is happening.

In the next five years (2008-2013), partners and stakeholders in the ecoregion will firmly consolidate the Sulu-Sulawesi Seascape as a political management regime, recognized and supported by stakeholders, including governments, nongovernmental organizations, and private sector businesses.

There are new opportunities emerging in the corridors and across the Seascape. There are practical prospects for consolidating MPA networks with large no-take zones. MPA management plans and management teams will have to be developed with full consideration of the social and economic implications of MPA establishment. Stakeholders and local government units are encouraged to commit additional resources to support and strengthen communication and enforcement initiatives. The former will generate public support for the MPAs while the latter will aim to strengthen enforcement from detection, to arrest, prosecution, and conviction (CI, 2008).

Vision for 2008-2013

Over the course of the next three years, partners and stakeholders in Verde Island Passage, Cagayan Ridge, and the Sea Turtle Corridors hope to consolidate MPA networks with corresponding No Take Zones, formal management plans, and designated MPA boards and management teams (**Box 3**). Targeted outreach will be conducted and enforcement strengthened to increase compliance with MPA and fisheries regulations and laws. Means of compensating fishers affected by the new No Take Zones will be identified, possibly through ecotourism development and a shift to fishing of small pelagic fishes

Table 1. Proposed subprojects of the Coral Triangle Initiative.

Subproject and Partner Agency	Participating Countries	Funding Requirements (in US\$ Million)
Coastal and marine resources management in the Coral Triangle of the Pacific (ADB)	Federated States of Micronesia, Fiji, Palau, Papua New Guinea, Solomon Islands, Timor-Leste, Vanuatu	\$25.85
Coastal and marine resources management in the Coral Triangle: Southeast Asia (ADB)	Indonesia, Malaysia (expected), Philippines	\$88.39
Sulu-Celebes Sea Large Marine Ecosystem and Adjacent Area Sustainable Fisheries Management Project (UNDP)	Indonesia, Malaysia, Philippines	\$6.82
Arafura and Timor Seas Ecosystem Action Program	Indonesia, Timor-Leste	\$8.42
West Pacific-East Asia Oceanic Fisheries Management Project (UNDP)	Indonesia, Philippines, Vietnam	\$3.34
International Waters Learning Exchange and Resource Network or IW:LEARN (ADB with UNDP)	Global	\$2.72
Strategies for Fisheries Bycatch Management (FAO)	Cambodia, Indonesia, Malaysia, Philippines, Vietnam	\$10.26
Adapting to Climate Change in the Coral Triangle Project (ADB, UNDP)	Federated States of Micronesia, Fiji, Palau, Papua New Guinea, Solomon Islands, Timor-Leste, Vanuatu, Indonesia, Malaysia, Philippines	\$40.00
Coral Reef Rehabilitation and Management Programme III (The World Bank, ADB)	Indonesia (with possible regional extension)	\$124.00
Integrated Natural Resources Management Project (ADB)	Philippines	\$105.80
Agusan River Integrated Basin Management Project (ADB)	Philippines	\$55.80
Total		\$471.40

instead of coral reef fishes. Political support for the work in the corridors will be built and on-the-ground marine conservation experiences in the corridors will inform national and regional policies and government budget allocations, as well as produce a model for ocean governance that other countries in the Coral Triangle and beyond can follow.

Increased attention will be focused on measuring Seascape success by establishing milestones, results, and deliverables for important components of the work at the species, site, and Seascape level. Financial sustainability, political viability, institutional capacity, economic viability, and information base and flow will be addressed.

Beyond this next phase, implementation of the Ecoregion Conservation Plan will be characterized by an evolution in intergenerational governance.

Thinking Synergy and Convergence

Governments and stakeholders look forward to a mature Sulu-Sulawesi Seascape which has good governance at all levels and is ecologically, socio-politically, economically, and financially sustainable.

The success of the Sulu-Sulawesi Seascape and its long-term sustainability will depend in part on the degree and extent to which governments in the region commit human and allocate financial resources to achieve marine conservation outcomes. In this aspect, national governments need to draw on the strengths of local governments while developing new forms of partnerships.

To implement government commitments on the ground, an enabling framework of laws, ordinances, regulations and policies that facilitate marine conservation have to be in place at the local levels. Coupled with this are personnel, infrastructure and equipment, to make the governance structures work effectively and efficiently.

Box 2: CTI Goals and Objectives.

Over-arching Commitments to Action

Goal #1: Priority Seascapes Designated and Effectively Managed

- Target #1: "Priority Seascapes" designated, with investment plans completed and sequenced
- Target #2: Marine and coastal resources within all "Priority Seascapes" are being sustainably managed

Goal #2: Ecosystem Approach to Management of Fisheries (EAFM) and Other Marine Resources Fully Applied

- Target #1: Strong legislative, policy and regulatory frameworks in place for achieving an ecosystem approach to management of fisheries and other marine resources
- Target #2: Improved income, livelihoods and food security of 50 million people living in coastal communities across the region through a new Sustainable Coastal Fisheries and Poverty Reduction Initiative ("COASTFISH")
- Target #3: Sustainable management of shared tuna stocks achieved for all species of tuna exploited in the region, with special attention to spawning areas and juvenile growth stages
- Target #4: A more effective management and more sustainable trade in live-reef fish and reef-based ornamentals achieved

Goal #3: Marine Protected Areas (MPAs) Established and Effectively Managed

- Target #1: Region-wide Coral Triangle MPA System (CTMPAS) in place and fully functional

Goal #4: Climate Change Adaptation Measures Achieved

- Target #1: Region-wide Early Action Climate Change Adaption Plan for the near-shore marine and coastal environment developed and implemented
- Target #2: Networked National Centers of Excellence on Climate Change Adaptation for marine and coastal environments are established and in full operation

Goal #5: Threatened Species Status Improving

- Target #1: Improved status of sharks, sea turtles, marine mammals and other identified threatened species

Source: CTI-CFF. 2008.

Innovative ways of engaging the private sector to support marine and coastal conservation need to be explored while efforts towards the recovery of threatened species vigorously pursued.

Improving governmental and nongovernmental institutional capacities is a continuous process, linked to marine management interventions. To achieve convergence between conservation and economic development, a complex set of interventions need to be crafted while remaining cognizant of emerging economic opportunities.

Reducing the threats to marine biodiversity is everyone's concern. Public support can be achieved through a purposive communication and capacity-building programme for multistakeholders.

Whatever interventions and initiatives would be taken by actors in coastal and marine conservation, the next phase of the Sulu-Sulawesi Seascape initiative entails that these be based on the achievements and lessons learned during the last three years.

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Box 3: Goals and Plans for the Sulu-Sulawesi Seascape Project (2008-2011).

The workplan for 2008-2011 focuses on consolidating MPA networks with No Take Zones in three corridors and on ensuring compliance through strengthened enforcement and targeted outreach efforts. A minimal investment will also be made at the Seascape-wide level to build political and financial support for the work in the corridors and to strengthen the Seascape as a model for marine management in the Coral Triangle.

In the Verde Island Passage Corridor – to refine and implement a Verde Island Passage Framework Plan together with 21 municipalities and three provinces. The Framework Plan will allow for the creation of an MPA network of at least 10,000 ha with at least 1,000 ha of No Take Zones and one contiguous No Take Zone covering 1,000 ha. For the MPA network to be effective, CI and partners will build capacity of MPA managers and implement a comprehensive enforcement strategy. Also, CI will lead an outreach campaign to build support for the MPA network and the enforcement efforts.

In the Cagayan Ridge Corridor – to consolidate an MPA network, including 97,000 ha of No Take Zones, that protects at least 20 percent of critical habitats (coral reefs, seagrass beds and mangroves). CI and partners will train law enforcers, prosecutors and judges to make sure enforcement is effective from detection, to arrest, prosecution, and conviction. CI and partners will generate public support for existing MPAs and No Take Zones and strengthen enforcement through a targeted communication strategy and campaign including broad communication of successful prosecutions and convictions for environmental and fisheries crimes.

In the Sea Turtle Corridor – to consolidate an MPA network, including at least 48,000 ha of No Take Zones, that protects sea turtles and their habitats. CI and partners will promote the development and implementation of management plans with clear MPA management objectives. Outside of MPAs, CI and partners will promote both Turtle Excluder Devices to reduce by-catch of threatened sea turtles in shrimp trawls and better joint enforcement to reduce the illegal sea turtle egg trade.

Seascape-wide – to generate political and public support for marine conservation in the corridors and to secure the Seascape as a model for ocean governance in the Coral Triangle, CI and partners will work with government officials and donor agencies to secure additional human and financial resources for investments in the corridors and for priority activities in the Seascape, including strengthened enforcement from the Balabac Strait to Sabah, an area currently functioning as an entry point for poachers to gain access to MPAs in the Sulu and Sulawesi Seas.

Source: CI, 2008.

Marine Protected Areas in the Sulu-Sulawesi Marine Ecoregion

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There were at least 352 marine protected areas (MPAs) established within the SSME in 2006. Of these, 343 are in the Philippines, 5 are in Indonesia, 3 are in Malaysia and 1 is jointly managed by the Philippines and Malaysia. Twelve Priority Subregions (PSRs) were designated by grouping together highly-ranked priority conservation areas identified for the Sulu-Sulawesi Marine Ecoregion (SSME) (Stakeholders of the SSME, et al., 2004) and for the Philippines (Ong, et al., 2002). Two hundred seventy-four (274) of the 352 MPAs are located within the PSRs; of these, information on MPA size was available for 204 MPAs. Based upon MPAs for which size information was available, only 0.94 percent of the total area within the 12 PSRs (447,548.6 km²) are within MPAs (4,198.2 km²). Table 1 presents the levels of management effectiveness for some MPAs as estimated by some key informants (as of 2006).

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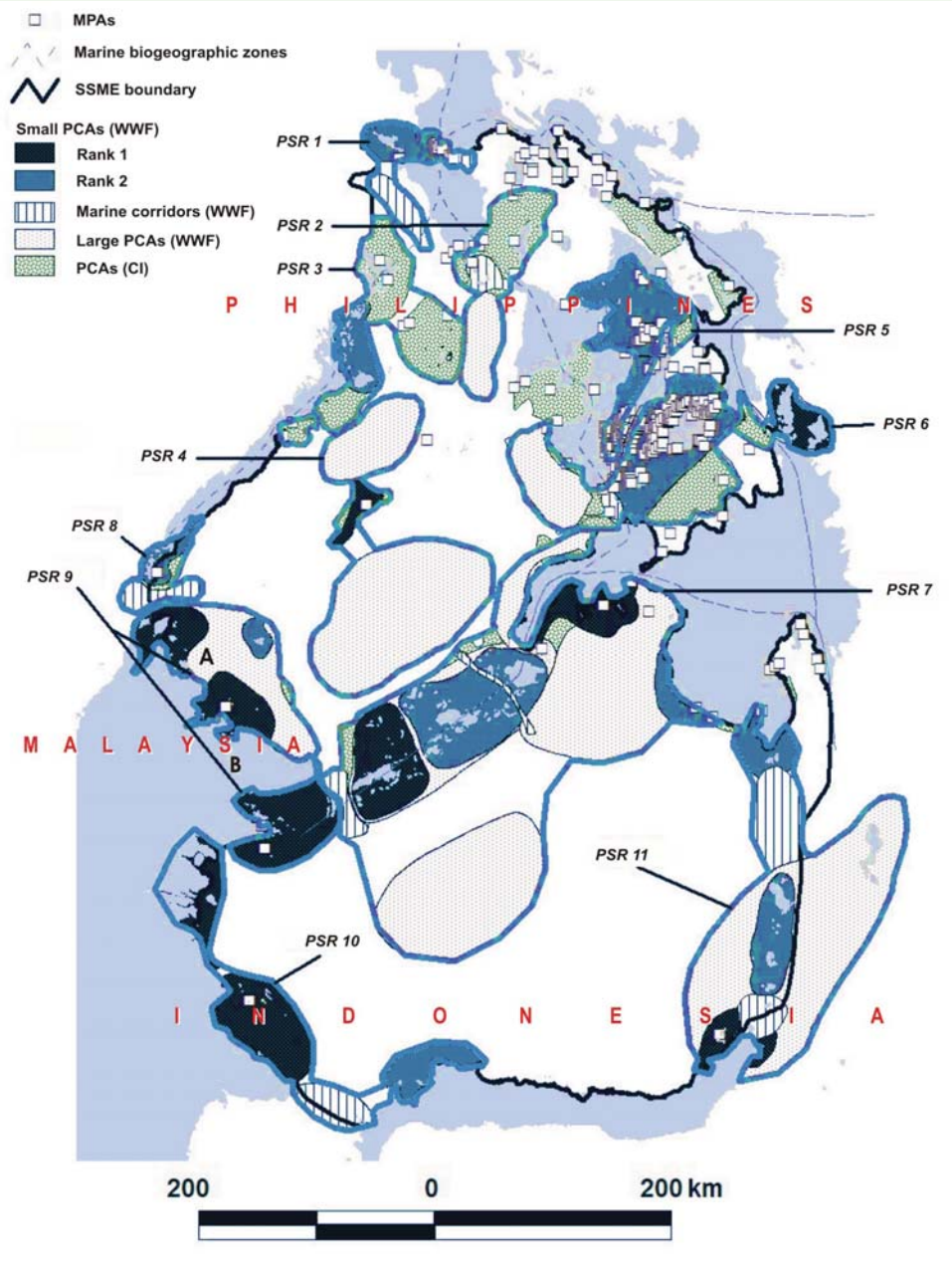
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Table 1. Levels of management effectiveness for some MPAs (estimate, as of 2006).

	Management is effective	Management is well-implemented	Low or unknown	Total
Philippines	35	23	285	343
Indonesia	0	3	2	5
Malaysia	1	2	0	3
Turtle Islands jointly managed by Philippines and Malaysia		0	Philippine Turtle Islands	1
				352



Cumulative area protected by MPAs versus size of PSRs.*

PSRs	Approximate PSR Size (ha)	MPAs with available data on size	Cumulative MPA Size (ha)	Area of PSR protected (percentage)
1	1,137,700	6	16,813	1.48
2	2,012,803	2	575	0.03
3	2,327,732	1	48	0.002
4	5,632,500	1	33,200	0.59
5	1,819,200	46	34,840	1.92
6	3,989,057	127	22,834	0.57
7	11,072,851	11	11,299	0.10
8	493,017	(1)	no data	no data
9 A and B	4,651,800	4	211,552	4.65
10	3,283,100	4	1,319	0.04
11	8,335,100	2	89,080	1.07
Total	44,754,860	205*	419,819	0.94

*Total of 205 MPAs includes Balabac Island TZMR (Philippines) in PSR 8 for which no data on size is available.

Source: UPMSI MPA Database

Supplementary data from key informants (2006): R. Apostol, D. Baker, A. Bautista, R. Cortez, R. dela Calzada, M. Dygico, J. Ingles, D. Largo, C. Nañola Jr., J. Palma, J. Pontillas, A. Siahainenia, A. Songco and A. White.