

Bridging the gap between regional plans and local action: The case of the Malaysian Coral Triangle Initiative and Semporna, Sabah.

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Abstract. Within the Sulu-Sulawesi Marine Ecoregion (SSME), Semporna Priority Conservation Area (PCA) ranks among the highest marine biodiversity in the world. Within Semporna waters, there are several government bodies responsible for different islands. Tun Sakaran Marine Park was gazetted under the management of Sabah Parks in 2004. Sipadan Island's water is under the protection of *Majlis Keselamatan Negara* (National Security Council). The Department of Fisheries Sabah is interested in Omadal Island for seaweed farming. Mabul Island receives the most attention due to its proximity to Sipadan, and is the base for most tourism operators. Mabul has 2,500 residents relying on fisheries, and more than 15 resorts and dive lodges on 26 hectares of land (Aw *et al.*, 2006). Reef check survey, community-based seagrass survey, seawater quality monitoring and groundwater analysis have been conducted on Mabul over the past 2 years. The environmental condition of Mabul is currently threatened, to the point where it might become the source of pollution that will spread to other islands within the Semporna PCA. Collaborative environmental monitoring has been identified as a primary method to reverse human impacts, so collaborative efforts have been initiated on Mabul since April 2010. This collaborative environmental monitoring plan should be replicated on other islands in future, to protect the entire marine environment from pollution. WWF-Malaysia provides a site-specific study on ways to scale up the local action plan to make it significant and contribute to regional marine conservation plans such as the Coral Triangle Initiative.

Key words: Scaling up, Local initiative, Regional planning.

Introduction

The Coral Triangle (CT) covers only 1.6% of global oceanic area, but harbors 76% of coral species and 37% of coral reef fish species (NPOA). In 2009, the six component countries of the CT signed the Regional Plan of Action for the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF). The Sulu-Sulawesi Marine Ecoregion (SSME) is located at the apex of the CT and includes Philippines and some parts of Malaysia and Indonesia. The SSME Conservation Plan was formulated in 2003 to conserve the resources shared by these three countries. The Malaysian stakeholder Action Plan Planning Workshop in Kota Kinabalu from 27-28 February 2003 developed the SSME National Conservation Plan for Malaysia. Within this planning workshop, the Semporna Priority Conservation Area was one of the three priority conservation areas that fall within the purview of the Malaysian SSME.

Semporna is a town and district in the southeast corner of the Malaysian state of Sabah, on Borneo. Semporna has Malaysia's largest

concentration of coral reefs and is home to Malaysia's largest dive tourism industry as well as commercial and artisanal fishing industries. Mabul is a 26-hectare island on a reef at the southern edge of Semporna District and is the closest island to the famed dive spot, Sipadan Island. Mabul has 5 resorts and 13 backpacker accommodations catering to dive tourism. There is also a community of approximately 2900 individuals on the island whose main livelihood is based on fishing.

Marine reserves have been proposed as one of the potential methods in providing sustainable fish stocks and conservation of biodiversity. The spill-over effect that supplements fish stocks has been demonstrated for marine reserves in Apo Island, Philippines (Russ *et al.*, 2004). However, other work has reported that the present community-based marine reserves were unable to provide ecosystem functioning to achieve biodiversity conservation (Weeks *et al.*, 2009). Russ *et al.* (2004) reported that the distance between marine reserves failed to provide larval connectivity to ensure sustainability of the

ecosystem. They also stated that the sizes of the marine reserves were too small to provide habitat for healthy populations. The mismatch of the spatial scale of marine conservation and the extent of marine resources indicates there is a need for community-based efforts to scale up and vice versa (Mills *et al.*, 2010). One study that has shown a successful example of scaling up is the coordination of marine reserves among local governments toward ecosystem-based fisheries management in southeast Cebu Island, Philippines (Eisma–Osorio *et al.*, 2009).

Community based management (CBM) can develop a sense of stewardship and could easily gain support from local stakeholders, but it might not match goals of regional-scale marine conservation. CBM is limited because the interests of each community are unique and cannot always be directly replicated or scaled up easily. The limiting factors in scaling up include heterogeneous interests, diverse socioeconomic and ethnic groups (Berkes, 2006) or the actual geographical limits of different institutional jurisdictions, central government policies, and the global market. As stated by Lowry *et al.* (2009) and Mills *et al.* (2010), there are factors that restrict the scale of marine conservation plans, such as political boundaries (e.g. district, nation), natural or bioregion boundaries, social constraints, and resource dependency.

There are cases where community-based management has been shown to have not scaled up and failed to achieve regional conservation targets. In Kerala, India, the lack of recognition by government agencies of the *padu* fishing management system caused the failure of the local associations (*sanghams*) (Berkes, 2006). Additionally, in Kerala, conflict of interests between different government departments also created loopholes for unsustainable fishing activity. With increasing demand for natural resources from the global market and increasing involvement from multiple stakeholders, the issue is difficult to solve. The second study case in Thailand mangrove areas (Berkes 2006) reported failure of community-based marine reserves caused by the heterogeneous local community. Mills *et al.* (2010) believe that the mismatch of the resource to the scale of conservation efforts is the cause.

The CTI-CFF was proposed in August 2007, and the CTI Regional Plan of Action (RPOA) was adopted in December 2009. The first goal is “Priority Seascapes Designated and Effectively Managed” where SSME has been recognized as a priority. One of the CTI guiding principles is

that it should be aligned with international and regional commitments. The Malaysian CTI-CFF National Plan of Action (NPOA) was designed to contribute to the regional goals with 134 specific actions. Semporna PCA falls under CTI-CFF, although there is no specific action listed in the NPOA for Semporna. In Malaysia, the National Oceanography Directorate (NOD), under the Ministry of Science, Technology, and Innovation (MOSTI), functions as the CTI Interim National Coordinating Committee (NCC) secretariat. With oversight by the NCC, the NPOA implementation is split between federal agencies and state agencies in Sabah, reflecting the complex relationship between Sabah and the federal government.

In April 2008, the Semporna Priority Conservation Area Visioning Workshop was jointly organized by the Semporna District Office and WWF-Malaysia. The group, consisting of government, private sector, academia, local communities and NGOs, produced a vision for the future, “To ensure that marine ecosystems in Semporna continue to provide food, services, and income for the people of Semporna in an equitable way. Integrated management approaches amongst various sectors – community, private sector, academicians and government – ensure the sustainability of natural resources”. Semporna’s vision is closely linked to the first guiding principle for CTI, which is “CTI should support people-centered biodiversity conservation, sustainable development, poverty reduction and equitable benefit sharing”.

The removal of dive resorts from Sipadan Island in 2004 drove many tourism operators to move to Mabul Island (Figure 1). Sipadan Island is often ranked among the best dive sites in the world. The biodiversity of the coral reef species and other charismatic species, such as sharks and turtles, was estimated to contribute US\$28,750,000 worth of tourist revenue to Semporna District every year (Yeo, 2010). The tourism development on Mabul Island is uncontrolled and the number of tour operators on the island has doubled since 2006. The present tour operators are still expanding their resorts and building some of them on the Mabul reef top (Figure 2).

An early understanding among stakeholders, especially the tour operators, of the concept of Limits of Acceptable Change for Mabul Island was introduced in a 2008 workshop (Table 1). The objective of Mabul Marine Day focused on island cleanliness issues and the Mabul Marine

Committee is working under a sub-committee for Semporna Tourism Action Council (STAC). The STAC is chaired by the District Officer. The tour operators are among the council members. In 2010 Universiti Malaysia Sabah developed a draft environmental monitoring protocol for the island which included elements of reef status, seagrass status and water quality. In early 2011, WWF conducted a series of collaborative environmental monitoring training programmes to engage tour operators, the local community and government agencies. Early results of the monitoring data prompted tour operators to form a management body to manage their resource by the end of the year. In early 2012, the Mabul Management Body began contributing money to transport solid waste off the island.

Eisma-osorio (2009) mentioned that scaling up local networks in marine conservation can achieve the goals for regional planning. An MPA network formed between the Central Visayas and South Cebu in Philippines incorporated ecological importance and achieved social objectives (Lowry *et al.*, 2009). The PAMANA Ka Sa Philippines Inc, (Lavides & Tiburcio, 2002 in Lowry *et al.*, 2009) showed another example of successful marine sanctuary management with a network resulting from a collaboration of multiple local stakeholders. Hence, scaling up of the marine conservation effort is not only necessary to achieve the goal of regional planning, especially in CTI context, but also feasible.

The objective of this study is to examine whether the Mabul Island communities' initiatives have the potential to scale up in order to reach SSME and CTI regional planning goals and if the CTI and SSME objectives are trickling down to the local scale at Semporna and Mabul.



Figure 1: The image of infrastructure on Mabul Island in 2009. Coloured lines are resort jetties. Local communities and backpackers are concentrated on the west and northwest sides.

Material and Methods

This study analyzed the Malaysian CTI National Plan of Action's (NPOA) priority action list. The list has 5 components, including, 1) planning and management, 2) policy and

administration, 3) funding, 4) information and awareness, and 5) monitoring, control and surveillance. The second part of this study examined the perceived relevance of NPOA to Semporna and Mabul. A select list of stakeholders from 13 agencies with knowledge of the CTI-CFF NPOA and the conservation situation in Semporna and Mabul were sent an online survey using Survey Monkey (www.surveymonkey.com). The survey asked them to assess relevance and likelihood of benefits to the area from the actions in the NPOA's priority action list. For each priority action, the survey asked if the action would; 1) Be relevant to Semporna, 2) Benefit Semporna, 3) Be relevant to Mabul Island, 4) Benefit Mabul Island. The survey was sent to stakeholders from government, NGOs and academia. The survey was sent via email to 25 experts to ask their perception on the 70 prioritized actions listed with a two-week deadline to respond. A second reminder was sent with a deadline extension to elicit more responses.

Table 1 Key activities on Mabul Island, Semporna, relating to management and monitoring.

Time line	Key events
1997	The initiation of Mabul Marine Day (MMD) by Sipadan Water Village which focused on coral transplanting to recover the reef that had been bombed
2004	Sipadan Island was closed to tourism. Tourism pressure shifted to Mabul Island. Increase of local population in Mabul Island due to job opportunities and more profit for small grocery shops in the island.
2006	The Limits of Acceptable Change study was conducted by Aw <i>et al.</i> (2006). The condition in Mabul Island was confirmed as over-populated.
2008	"Mabul Island: Acceptable Change (LAC) workshop" organized by WWF and partners to a range of stakeholders.
2009	MMD extended to Mabul Marine Week (MMW), with the change in objective to "Cleanliness of Mabul, Our Responsibility". MMW committee had officially become the sub-committee for the Semporna Tourism Action Council (STAC).
2010	Study on Environmental changes in Mabul Island by Universiti Malaysia Sabah continued
April 2011	Series of collaborative environmental monitoring activities conducted with the stakeholders
Nov 2011	The result of the environmental monitoring shared with stakeholders
Dec	The agreement from tour operators to form

2011	a management body to prioritize working on a waste management system.
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Results

Within the Malaysian NPOA for CTI-CFF list of priority actions from a total of 134 actions, almost half of the priority actions are listed under the “Planning and Management” section (Figure 2). The “Information and Awareness” section was the second largest group of actions, contributing 32% of all actions. Other groups of actions, in decreasing order of size, are Policy and Administration (11%), Monitoring, Control and Surveillance (6%), and Funding (4%).

A further analysis is necessary to assess the amount of activities directly applied to the field. The connectivity between the NPOA and the local activities was unclear in the NPOA. Within the 134 actions, 70 actions were prioritized (we excluded the 64 newly initiated actions) in the brochure called “Malaysia National Plan of Action: Priority List”. Due to the fact that the respondents skipped some questions intentionally or unintentionally, we had a 70% response from a total of 630 potential responses.

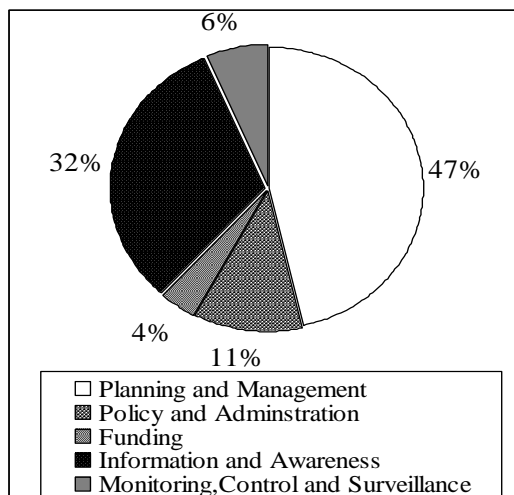


Figure 2. The types of Actions listed in the NPOA in CTI-CFF.

The overall responses showed that most respondents perceived that the Malaysian NPOA is relevant and helpful to Semporna (~80%) and Mabul (~60%) (Table 2). As expected, more actions were perceived as relevant to Semporna compared to Mabul. This might be due to the geographical scope, where Mabul is only one of the 50 islands within Semporna District. Thus, there are more habitats, MPAs and fisheries that

might come under the purview of the NPOA in Semporna than in the limited area of Mabul. There were 35 priority actions that at least one participant thought would be or might be relevant to Semporna and Mabul. Five priority actions were unanimous in being relevant and useful without any “maybe” or “no” responses.

Table 2. Responses regarding relevance of Priority Actions to Semporna and Mabul

Answer Options	Response Count				Percent (%)		
	Yes	Maybe	No	Total	Yes	Maybe	No
Relevant to Semporna	379	66	24	469	81	14	5
Might help Semporna	347	70	16	433	80	16	4
Relevant to Mabul	293	117	60	470	62	25	13
Might help Mabul	282	123	24	429	66	29	6

Discussion

The Malaysian NPOA forms a bridge between the CTI-CFF Regional Plan of Action and implementation on the ground in Malaysia. As such it needs to have a mixture of financing, policy, and on-the-ground activities. If there is a general perception that it lacks on-the-ground activities specific to Semporna, this might be due to a few factors. Perhaps, when the NPOA was being formulated, there were not enough local actions in Semporna to build into the NPOA. It may also be that Semporna was inadequately represented during the NPOA planning process.

It is clear that some stakeholders with knowledge of the large-scale plans for the Coral Triangle see the potential for those plans to benefit Semporna and Mabul. The result from the planning and monitoring now underway might improve the condition in Mabul Island, Semporna. However, there is clear lag-time between the regional plan and improvements on the ground. It may be too early to see direct benefits of the NPOA to the local scale.

Semporna has been benefiting from several initiatives that can be indirectly tied to regional initiatives. The SSME Tri-national Committee Fisheries Sub-committee is implementing the GEF funded Sulu Celebes Sustainable Fisheries

Management Project with a pilot site in Semporna. This was a clear SSME priority. The Tun Sakaran Marine Park has been benefiting from many training courses and the presence of the Semporna Islands Project of Sabah Parks and the Marine Conservation Society, UK. WWF-Malaysia has been increasing its presence in Semporna with funding generated through awareness of the Coral Triangle.

Assessing the potential for scaling up activities from Mabul to regional levels may be difficult. Until recently, there were very few conservation-related activities on Mabul to be up-scaled. For nearly 10 years, the sole activity was the annual Mabul Marine Day, led by the Sipadan Water Village resort. This activity consisted of beach and underwater clean-ups, coral transplanting, and awareness for local communities. In 2008, it was scaled up to the Mabul Marine Week with partnership from the local government and more resorts on the island. This coincided with some attempts to form a system of waste removal from the island. In late 2011, the resorts agreed to form the Mabul Management Body to manage waste and monitor environmental parameters, including water quality.

While it is clear that the regional initiatives do have some trickle-down effects, there appears to be a lack of agreement about the degree of relevance as well as a time lag between the regional agreement and implementation on the ground. For activities to scale up, there needs to be a clearer communication channel for informing local, state and federal agencies about lessons learned from local initiatives. The communications channels need to match the desired level of scaling up and down. With better communication between the local scale and the federal level, the regional plans should be more relevant and successful.

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References

Aw SL, Cabanban AS, Abdullah MH (2006) Application of the limits of acceptable change (LAC) for sustainable marine ecotourism on Mabul Island, Semporna Sabah. SANREM 2006.
Berkes F, (2006) From community-based resource management to complex systems: the scale issue and marine commons. *Ecol Soc* 11: 45.

Christie P, Pollnac R, Fluharty DL et al. (2009) Tropical marine EBM feasibility: a synthesis of case studies and comparative analyses. *Coastal Management* 37: 374-385.
Eisma-Osorio RL, Amolo RC, Maypa AP et al. (2009) Scaling up local government initiatives towards ecosystem-based management in Southeast Cebu Island, Philippines. *Coastal Management* 37: 291-307.
Lavides MN, Tiburcio F (2002) Building a national community of local coastal resource managers in the Philippines. In Proceedings of the 2nd National workshop on the Formulation of a National Fish Sanctuary Strategy, eds. WL Campos, PD Beldia II, and PM alino, 90-99. Visayas, Iloilo: University of the Philippines, 242 p.
Lowry, GK, White AT, Christie P (2009) Scaling up to networks of marine protected areas in the Philippines: biophysical, legal, institutional, and social considerations. *Coast Manage* 37: 274-290.
Marschke M, Berkes F(2005) Local level sustainability planning for livelihoods: a Cambodian experience. *International Journal of Sustainable Development and World Ecology* 12: 21-33.
Mills M, Pressey RL, Weeks R, Foale S, Ban NS (2010) A mismatch of scales: challenges in planning for implementation of marine protected areas in the Coral Triangle. *Conservation Letters* 3: 291-303.
Russ G, Alcaca A, Maypa P et al. (2004) Marine reserve benefits local fisheries. *Ecological Applications* 14:597-606.
Sachedina, HT (2010) Disconnected nature: The scaling up of African Wildlife Foundation and its impacts on Biodiversity conservation and local livelihoods. *Antipode* 42(3): 603-623.
Thomas WC (2008) Evaluating the performance of collaborative Environmental governance. Presentation at the consortium on Collaborative Governance Mini-conference, Santa Monica, April 10-12.
Weeks R., Russ G., Alcaca A, White A (2010) Effectiveness of marine protected areas in the Philippines for biodiversity conservation. *Conserv Biol* 2: 531-540.
White A T Collaborative and community-based management of coral reef resources: Lessons from the Sri Lanka and the Philippines. Coastal Resources Management project.
Yeo BH (2011) Rapid Appraisal of the Economic Values of the Semporna Priority Conservation Area. Final Report, 18 February 2011. WWF-Malaysia Project MY0256I.