

The Marine Protected Area Network of Batangas Province, Philippines: An Outcome-Based Evaluation of Effectiveness and Performance

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Summary

This study looks at the case of four marine protected areas established in two municipalities of Mabini and Tingloy in Batangas Province, Philippines, in order to assess their performance in relation to their initial objectives. It investigates stakeholder perceptions regarding the effectiveness of the MPAs and the current problems facing management of the MPAs. The results highlight issues of equity, lack of community and governmental will and participation, lack of capacity and confidence in management of the local committees and organisations, and difficulties in financing that threaten to jeopardize the protected areas ongoing success. Building governmental support, local capacity building, and a transparent method of financing are seen as key to ensure success in the future.

Introduction

Over recent years marine protected areas (MPAs) have become a widely-used component of integrated coastal management programmes set up in an attempt to protect, and potentially rehabilitate, coastal ecosystems worldwide. The increasing urgency with which coastal resource management practitioners now view the need to conserve marine resources has led to a surge in the number of MPAs being created and their recognition on an international scale as a viable means to protect resources at the ecosystem level. However, recent experiences in the modern concept of MPA management have brought to light a range of conflicting interests that have impeded the smooth implementation of many projects. Coastal management rarely, if ever, affects only one sector of the population; often with a number of stakeholders, including fisherfolk, government officials, the tourism industry, businesses, and local communities, being affected to varying degrees. In many tropical regions the speed with which the focus of MPA creation over the past twenty years has shifted from fisheries enhancement to a focus aimed more at benefiting the frequently more profitable tourism and diving industry has been dramatic (Alban et al. 2006) and at times controversial, and is a good example of the difficulties involved in finding the right balance when attempting to satisfy the demands of two competing industries.

Arguments about the science and design of MPAs often fail to address the equally important societal goals, values, and ethics related to marine resource use (Grizzle 2005), and in doing so may preclude the continued participation and support of resource users which is necessary for achieving long-term success in their management. A factor often cited for the lack of success with many protected areas is the failure to engage all stakeholders in the project from an early stage. Restricting use of what has previously

been a common property resource frequently leads to conflict and resistance, which in turn can negate any benefits gained by the imposition of such restrictions. There must be demonstrable benefits in terms of biological and environmental enhancement as well as increased economic benefits to, at least the majority of, those affected by the MPA.

This paper gives an overview of research carried out between February and March 2008 on four MPAs that have been set up in Batangas Province, Philippines, and will look at how the stakeholders and the local communities involved feel they have benefited or been disadvantaged by the protected areas and their subsequent impacts. The study aims to answer a number of questions regarding the MPAs including:

- To what degree have the initial objectives been achieved?
- To what degree are the different stakeholders involved in management of the MPAs?
- To what extent do the management organizations have the necessary resources and willpower to actively and effectively manage the network as it stands at the moment?
- What are the major problems currently being faced?
- What measures should be taken to ensure future success in the management of the MPA network?

Study Sites

Research for this study was carried out in the municipalities of Mabini and Tingloy in Batangas Province, the Philippines, in February and March 2008. Located only 3 hours drive south of Metro Manila, the region has for several decades been well known as a popular tourist destination due to its beaches, coral reefs and numerous diving sites, and its proximity to such a major metropolitan area. The reefs of the two municipalities have been negatively affected by a variety of human impacts including overfishing, sedimentation, shoreline development, boat anchor and diver damage, and illegal forms of fishing. Solandt et al. (2002) concluded that the main threats to the reefs were inadequate waste/sewage disposal and overfishing, and the reefs still show signs of algal overgrowth in places, likely caused by both nutrient over-enrichment and removal of herbivorous species of fish, and broken coral from dynamite blast fishing, typhoons, and anchor damage. The presence of the tourism industry has led to an increased risk to the reef caused by the high volume of divers visiting the various dive sites. However, the tourism industry has played an important part in promoting and assisting efforts to establish and manage the MPAs of Mabini. With tourism, especially dive tourism, frequently promoted worldwide as an economically viable, and often preferable, means to shift the focus of coral reef exploitation from an extractive to a non-extractive form of use, the conservation programmes that have been implemented in Anilao over the years serve as the ideal location to investigate not only the biological effects of MPAs, but also the complex dynamics and changes in stakeholder perceptions and support for MPA programmes that occur when competing industries become involved in coastal resource management.

Mabini

The municipality of Mabini is located on the Calumpan Peninsula along the southwestern

edge of Luzon, and is surrounded on both sides by two major bays; Balayan Bay to the north and western side of the peninsula and Batangas Bay to the east. The first integrated coastal management (ICM) projects in the region were started in 1988 by the Haribon Foundation, whose surveys in the area showed a decline in fish abundance and overall health of the reefs. In conjunction with Dr. Alan White, their work led to the establishment of the Mabini Marine Reserve (356 hectares) by municipal ordinance in 1991, covering the entire coastline of barangays Bagalangit and San Teodoro to a distance of 700 metres from the shore, and the creation of three marine sanctuaries located along the south-westerly facing tip of Mabini in the barangays of Bagalangit and San Teodoro; Cathedral Rock (22.9 ha), Arthurs Rock (17.9 ha), and Twin Rocks (15.3 ha). All three sanctuaries are declared no-fishing zones, although non-destructive methods of fishing are allowed in other parts of the marine reserve. Diving and snorkeling was also originally prohibited within the sanctuaries, but due to the importance of the dive industry in the region this regulation was never enforced as strictly as the no-fishing regulations. Currently each sanctuary has a dive resort on the coastline within its coastal boundaries and diving is allowed within the MPAs on condition of payment of a user fee to be collected by the dive resort operators. The initial creation and management of Cathedral Rock and Arthurs Rock was influenced heavily by their two dive resorts, Dive 700 and Arthur's Place respectively, although the initial management of Twin Rocks was much more the responsibility of the local fishing village of Balanoy.

Tingloy

Approximately 20 minutes boat ride from the southern tip of Mabini, and separated by the Maricaban Strait, lies the municipality of Tingloy, composed of Maricaban Island and the much smaller Caban Island. Despite being home to a greater number of dive sites than Mabini it has encountered much more difficulty in attracting tourists to the island, and even today does not have a specialized diving resort - the only resort on the island being the Olympic Point Resort in the barangay of San Jose. The island currently only has one MPA, although there are talks of possibly establishing another around the small uninhabited Sombrero Island – one of its main diving spots located off the northwestern tip of Maricaban island. The reefs surrounding Sombrero Island were first proposed as a location for a national park in 1982 by the National Environment Protection Council, but until now it remains open to fishing and is also home to some of the most popular dive sites in the area.

Talks began in 1999 to establish the Pulang Buli shoal reef as a MPA. Now more commonly known as Batalang Bato, the one hectare marine sanctuary eventually came into existence in 2002, after a number of Earthwatch research trips to the area in the 1990s, carried out biophysical baseline data collection. Despite being just one hectare in size, the location and topography of the sanctuary meant that it was a significant area for fishing until 6 years ago. With a high coral coverage, located only approximately 200m from shore, and with the central peak of the reef rising to above sea level at low tide, it is easily recognizable and easily targeted. Any form of activity, including both diving and fishing is currently prohibited within the sanctuary.

Decision-making and management bodies

Mabini

In Mabini, the Coastal Resource Management Board (CRMB) was created in 2002 in order to support implementation of marine sanctuary policies, enforcement of sanctuary regulations, and waste management programmes. This is composed of eleven representatives from the local government, NGOs, the Municipal Fisheries and Aquatic Resources Council, and dive resort owners; the chairman position going to the municipal mayor. They are also responsible for ensuring that funds collected from the user fee go towards conservation of the municipal waters. In 2006 the CRMB created the Marine Reserve Resource Executive Committee (MR-REC) composed of the resorts, boatmen, landowners, community, and fisherfolk. According to the Municipal Environment and Natural Resources Office (MENRO) the CRMB expects that the MR-REC will be the ones to directly manage the MPAs. However, reports suggest that as of early 2008 they are inactive due to the changeover of mayor in the municipal government following recent elections.

The MENRO is the governmental department that acts as coordinator of the MPAs within the bounds of their provincial jurisdiction, is responsible for monitoring of the MPAs within the bounds of the ordinances they created, and helps organise the MR-REC. Another function is coordination with other municipalities who want to establish sanctuaries. Also, since the unified diver fee system was introduced they are responsible for sale of the dive passes to the various resorts and collection of the funds.

A major ICM project, ongoing today, was initiated in 1997 by WWF-Philippines, known in the Philippines as Kabang Kalikasan ng Pilipinas, who are now the main NGO working in Mabini and also working with other coastal municipalities in Balayan Bay. In addition, the peoples' organisation Samahang Pangkaunlaran ng San Teodoro Inc. (SPSTI) is also involved in management activities.

Tingloy

In contrast to Mabini, Tingloy does not as yet have the necessary government officials mandated to carry out environment-related duties, i.e. the Municipal Agricultural Officer and Municipal Environment and Natural Resources Officer. The only NGO working solely on marine conservation is the Coastal Conservation and Education Foundation (CCEF) (previously the Sulu Fund) who began working in Tingloy in 1999. Their main role has been community organizing, environmental education seminars, establishment of the Bantay Dagat sea patrol, baseline information gathering, and working with the municipal government and the local people's organisation Samahan Tungo sa Kaunlaran ng Santo Tomas (STKST), which was set up with the assistance of CCEF in 2000 in order to help manage the sanctuary. The Batalang Bato Marine Council (BBMC) – composed of the local government unity (LGU) of Tingloy, the STKST, and both barangays – has overall management responsibility for the MPA, with coordinating assistance given by CCEF and some input from the captain and councilors from both barangays.

Research methodology

Between February and March 2008 in-depth interviews were conducted with a total of 58 key informants; 34 in Mabini and 24 in Tingloy. These included individuals from NGOs (7), government officials including municipal mayors, barangay captains and barangay councilors (14), heads of the peoples' organisations STKST for Tingloy and SPSTI for Mabini (2), members of the BBMC for Tingloy and the MR-REC of Mabini (4), Bantay Dagat members (7), resort owners and dive guides (8), local fishermen (14), boat owners and bankers working on the dive boats (2). Interviews were semi-structured and, where possible, recorded and later transcribed and analysed to identify recurrent themes. Literature of any scientific studies made in the region was used in conjunction with the general observations made during the study to identify any correlation between the views of the various stakeholders, with regards to the overall success of the MPAs and their management, and actual observations and other published scientific data regarding the biophysical effects of the MPAs. Much information for the study was collected based upon several suggested governance performance indicators in the 2004 World Conservation Union handbook "How is your MPA doing? A guidebook of natural and social indicators for evaluating marine protected area management effectiveness" (Pomeroy, Parks & Watson 2004), which is currently in use worldwide as one of the standard tools for assessing MPA performance.

Findings and Discussion

Management Plans and Objectives

Defining quantifiable objectives before implementation of any MPA plan can assist in the process of monitoring and evaluation by providing a baseline framework upon which to compare results and the degree to which pre-stated goals have been achieved. Also, individual stakeholder hopes and expectations can be listened to and compromises can be agreed upon prior to implementation in order to preempt any management problems before they arise and enable the managing bodies to take steps that will ensure the continued, smooth running of the MPAs.

In Mabini, the MENRO is currently in the finishing stages of preparing the management plan, which they plan to submit in the near future to the CRMB for approval. The completion of the management plan is seen by some within the Mabini government as an important step in the future improvement of the MPA management process there, and they are confident that the management plan once completed will be included in the municipal development plan.

In Tingloy also, management objectives are not quantified and no formalised management plan exists. According to the president of the STKST the four main aims of Batalang Bato and related conservation activities are to: regain fishes, corals and all biodiversity; bring a medical mission and dental mission and help charity work in the community; to organise clean-ups of the ocean; and to develop alternative livelihoods.

All of those questioned if they understood the reasons for the establishment of the sanctuaries were aware that one of main aims was to improve the overall health of the reef with the view to increase fish stocks in surrounding waters, and to prevent illegal fishing methods that had been destroying the reefs. However, none of the fishermen or Bantay

Dagat (who are usually also fishermen themselves) in either municipality replied that one of the aims was to attract divers and increase tourism in the area. There was a general understanding among the majority of those interviewed that improving the reefs for the benefit of the fishermen and the fishing communities was the main objective.

In contrast, in Tingloy several of the government officials, NGO officials and local committee members understood the financial benefits to be had from opening up Batalang Bato to dive tourism in the future, as is currently being planned. The main aim of this, however, would be to raise revenue for continued management of the sanctuary and possible other sanctuaries in the future, although of course knock-on effects to the communities involved are expected.

Current level of stakeholder participation and involvement

When asked to rate their perceived level of involvement in the management of the MPAs, a total of 13 of respondents in Mabini (38%) compared to 4 in Tingloy (17%) considered themselves to be very involved. Additionally, out of 21 Bantay Dagat members and fishermen interviewed only 3 considered themselves to be very involved. Out of all the stakeholders, the only ones that responded that they were not at all involved or didn't know were several of the fishermen and individuals from the tourism industry; 5 respondents in Mabini and 7 in Tingloy. Given the fact that the tourism industry and the fishing industry should be the ones to benefit the most from the existence of the MPAs it is somewhat surprising that so few consider themselves to be involved in the management of the resources. Within the tourism industry, however, some of those interviewed were working in either non-management positions or were resort owners in resorts not directly adjacent to the sanctuaries.

In Mabini and Tingloy a number of people from the dive resorts, NGOs, and Bantay Dagat that were interviewed complained that there was too little interest shown by other members of the community, particularly the fishermen who were supposed to be the ones benefiting from the MPAs. The two main reasons given for the lack of interest was the lack of a financial incentive and the need to work. Four people interviewed commented that it was impossible to encourage people to take part in activities such as attending public hearings and discussions and coastal cleanups without giving them a financial incentive. In Tingloy, one of the major problems facing the NGO working there was that fishermen would only attend meetings if they were held on days when there was a full moon and thus it wasn't worthwhile them going fishing.

Another common complaint from those who were not so actively involved in the management of Batalang Bato was that they were sometimes excluded from meetings and that their views were not taken into account during decision-making. This was especially true for people interviewed in Talahib, who on the whole felt that they had a secondary role to play in management of the sanctuary.

Of those in both municipalities that considered themselves to be "very involved" or "quite involved" the majority came from the NGOs, LGUs, peoples' organisations and management committees. Of the 6 peoples' organisation and committee members interviewed 2 were themselves fishermen but were older members of the communities and were thus in more of an active leadership role. It is of course to be expected that the NGOs would have a high rate of involvement in initial establishment and running of the sanctuaries, but in both Mabini and Tingloy they still play a very active and essential part.

NGO Support

Since the Haribon Foundation spearheaded coastal conservation efforts from the late 1980s NGOs have had an important part to play in the introduction of new initiatives including training and education programmes, logistical support, coordinating between various parties and stakeholders, organizing of meetings, installation of marker buoys and mooring buoys, financial assistance, and the introduction of the diver user fee. Scientific research carried out by CCEF was instrumental in identifying possible locations for a MPA in Tingloy, and regular monitoring expeditions since the early 1990s have assessed the overall health of the reefs of both municipalities.

Much of the work done in the region by the various NGOs there has been aimed at empowering the local stakeholders to be able to sustainably manage their coastal resources so that after NGO support is withdrawn the communities themselves will be able to take responsibility for decision-making and management. Unfortunately there was clear concern in both municipalities from those interviewed as to how the MPAs will be managed if and when NGO support is withdrawn.

Mabini Government Official: “I want them [the WWF] to be here always. I do not know what to do in case they leave because they have the logistics. We lack the logistics. They have the money, but also I think the manpower services, the technical side of it, we need it. We need the technical expertise. We have a little amount of funds but the technical side, the technical aspect of the CRM [coastal resource management], I think we do not have the capability to handle all CRM matters”.

Similarly concerns were voiced in Santo Tomas and Talahib on Tingloy.

NGO official: “We’re concerned about the length of contract of CCEF because they [the STKST and local community] can’t stand alone. Even though they now have the empowerment, bylaws etc., and they should be taking the initiative themselves in management”.

The head of the STKST and the Talahib and Santo Tomas council members all felt pessimistic about how they would continue to manage Batalang Bato if the CCEF were to leave. Hopes are now resting on them being able to implement their own diver user fee which they can implement without the need to share with Mabini. The new mayor of Tingloy also feels that more NGO support is vital to sustain CRM on the island, however he also feels that the most effective way to conserve the reef and fish stocks is to actually increase the amount of fishing effort as a way to relieve poverty.

Interviewer: “Where do you think the money will money come from for that kind of project [providing more boats and nets to the fishermen]?”

Mayor: “We can give our counterpart but we are searching for those funds from NGOs. We would like to attract more NGOs to the island.”

This high dependence on NGO support in both municipalities highlights weaknesses in the current management structures that may threaten the ongoing management of the MPAs

in the future. Considering the fact that NGOs have on a number of occasions stated that their aim is to build community capacity to sustainably manage the MPAs, it is worrying that so many people within the communities and various management committees still cannot imagine continuing without the NGO support.

Financing

The MPAs of Batangas rely on donor assistance from both national and international NGOs, in terms of technical assistance, support and training, and, at varying degrees over the years, financial support. At present the two municipalities in this study are receiving most of their funding from a unified diver fee system (UDFS), which requires scuba divers to purchase a dive pass in order to dive in the waters of the two municipalities - 85% of money collected going to CRM and 15% going to the general municipal fund.

The user fee system was first introduced in Mabini in September 2003 following a willingness-to-pay survey conducted by WWF. When first introduced the charge was P100 per diver for a daily pass and P2000 for an annual pass (this was later reduced to P1800 after the introduction of the UDFS in 2005). At first the system gave a financial incentive to the dive resorts to collect the fee, but this was changed in the second half of 2004 after divers complained that they did not want the dive resorts to receive the incentive but would rather it go to the boatmen. The current system requires all passes purchased to be dated, and all passes now come with a P10 receipt which can be torn off and cashed in by the boatmen.

This system has encountered problems since it was introduced as many people now feel that the boatmen and resorts are profiting from the user fees. The majority of complaints came from the Bantay Dagat, on both Mabini and Tingloy, who have observed on numerous occasions that the divers are regularly not given the dated passes that they are supposed to have paid for. Dive boats were reported to often keep the passes and only date them, thus making them invalid for use on other days, when they notice the Bantay Dagat approaching. The extent to which this practice goes on is unclear, but there is a strong financial incentive for boatmen to profit from the user fee as the P100 charged per diver would make a substantial addition to their salaries.

In Tingloy, although they passed their ordinance (Municipal Ordinance 2003-01) allowing them to collect fees from divers in 2003 it did not go into effect until September 2005 when the UDFS was introduced. Under this agreement revenues collected will be shared equally between the two municipalities. This has led to resentment among many in Mabini who feel that Tingloy is not showing sufficient evidence of how their share of the money is being spent. Fishermen, Bantay Dagat, resort owners, and committee members in Mabini were concerned that Tingloy had not been seen carrying out regular patrols of their waters for several months. The MENRO in Mabini also expressed concern about Tingloy's level of commitment to managing their waters and their dive sites and the fact that they were not actively tackling their problems with solid waste management and disposal.

Those interviewed in Tingloy, on the other hand, all firmly believed that they were entitled to 50% of the UDFS. They felt there was no question that because of the high number of dive sites within their waters and because they were expected to provide Bantay Dagat support that they should receive their share of funding for this. Milne and Christie's (2005) study of Mabini and Tingloy, based on research carried out in September 2002,

found that the majority of informants at the time felt that the financing was insufficient to fund the tasks necessary for ICM. It still seems that even today after the implementation of the UDFS that those views have not changed. Lack of funds was a frequently heard reason given by informants for the difficulties involved in managing the MPAs and municipal waters. The main hope of the BBMC at the moment is that revenue, that they will not need to share with Mabini, can be generated from the opening of Batalang Bato to divers.¹

Political Involvement

The system of co-management found in Mabini and Tingloy is dependent on support from the respective municipal governments for legal authorization of MPA regulations and for disbursement of any funds collected. The municipal mayors are also responsible for chairing the CRMBs, so their support is crucial for effective and smooth running of the resource management projects.

In Tingloy some tensions exist between the STKST and the municipal government as the organisation feels threatened by the fact that certain members of the municipal government have shown signs that they want to take over the management of the sanctuary. If the organization ceases to be active then the municipal government has the authority to amend the ordinance and take over the management of the sanctuary and any future revenues accrued through diving within it.

Political issues in Mabini were also often cited as the reason for the recent downturn in the amount of enforcement of and commitment to the running of the marine reserve there. The changeover of the mayor in 2007 has reduced the level of governmental involvement in the municipality's CRM, and now conflict between the present mayor and the vice-mayor - who recently lost his position as mayor after three terms (nine years) in office - is stalling any efforts made by the local committees and the WWF to improve CRM programmes. A number of sources reported that disagreements and conflicts that have arisen within the LGU appear to be having an impact on making any further progress regarding CRM in Mabini. Resolving these problems is key to preventing any deterioration in the quality of CRM in Mabini's waters. As one informant reported:

“the problem is the Legislative Branch doesn't support the Executive Branch. We have to get the interest of the mayor if we are to improve sustainable financing”.

Political support is also vital for efficient running of the Bantay Dagat who patrol the water and enforce fishing and diving regulations. Another informant interviewed pointed out how shortly after the new mayor took up his position changes were made to the Bantay Dagat when supporters of the new mayor were given positions while longer-standing members had been relieved of their positions. Although this problem was eventually resolved and the older members were reinstated, it is a clear indication of the potential problems that political interference can cause. Another informant complained that, “mayors are often not trained in CRM so they have no interest in activities pertaining to protection of the

¹ Although no dive tourists were interviewed for this study, a number of websites and internet fora show that there is indeed a lot of concern among divers visiting the area that the user fee is not being spent effectively. According to several websites the amount of garbage still littering the reefs, the ongoing cyanide fishing, and the lack of mooring buoys in the area are three of the issues which the divers feel should have been addressed by now by the use of the diver fee that they pay.

coastal environment”.

Enforcement procedures

In order to enforce compliance with regulations regarding illegal fishing and payment of the diver user fee the Bantay Dagat sea patrols, consisting of both paid and unpaid sea wardens, are mandated to carry out patrol activities in the waters of Mabini and Tingloy. Over the years the level of surveillance and enforcement of the MPAs of Mabini and Tingloy has been inconsistent; with periods of fairly vigilant enforcement, and periods where the level of enforcement has decreased significantly.

The Bantay Dagat is now funded solely through the UDFS, although in the past they had also directly received NGO funding in addition to the training and logistical support. Mabini and Tingloy have 21 members each, although not all of them receive a salary. From 2000 to 2005 Mabini was apparently active in patrolling the marine reserve, although since funding from WWF ceased in 2005 they have had problems finding the money for patrols and boat repairs. In Tingloy there have been similar problems with financing, and there were reports that they have been less active recently. There was, however, general agreement in both barangays that the Bantay Dagat had been effective in reducing illegal and destructive fishing within areas inside the MPAs and the marine reserve.

As well as Bantay Dagat patrols, other methods of surveillance have also been attempted over the years. Arthur’s Place, for example, had a guard permanently stationed at the resort for 2 or 3 years in order to deter violators from entering the sanctuary. According to the resort owner, who feels that there should again be a guard on duty, the presence of the guard had a noticeable effect on reducing the amount of illegal fishing within the sanctuary. At Batalang Bato a guard tower was erected for the purpose of monitoring for illegal fishing, with responsibility for lookout duties to be shared between the two barangays; this being one of the main ways in which Talahib was to assist with management of the sanctuary. The guard tower has led to a total of 19 apprehensions since the MPA was established, but unfortunately appears to be seldom used at the moment. Fines collected go directly to the municipality; fishers being fined P2000 each for a first offense, and P2500 and confiscation of fishing gear for a second offense. The barangays originally had a verbal agreement with the prior mayor that a percentage of any money collected from fines would go to each barangay, however neither barangay received the money. The present mayor has agreed that 50% of fines collected can go to the barangays and the BBMC, but at the moment there are problems with not being able to give receipts for any fines levied to the fishermen apprehended which are preventing this from happening.

Clear boundaries around any MPA are necessary in order to prevent inadvertent fishing within the sanctuary and to simplify enforcement (White et al. 2006). In the case of Tingloy, the fishermen in Santo Tomas had also requested a reflector to be placed in the centre of the sanctuary in order to prevent accidents with boats running aground on the coral during the night and to reduce incidences of accidental violation. The NGO is also now focusing on trying to get funding from the municipal office for installation of a fourth marker buoy in order to fully mark off the perimeter of the sanctuary.

Commercial fishing within municipal waters is one of the main threats to the marine resources, but tackling the problem requires far more resources and manpower than

smaller illegal fishing operations. Boats larger than 3 tonnes in size are prohibited from fishing within municipal waters (which cover 15 km from the shore) without special permission from the local and municipal councils, but they are frequently seen even just 1 km from shore on nights when there is a full moon. Their fishing method tends to involve using generators and large 1000 watt bulbs to attract fish to the boat, hence the increased presence on brighter nights when the moon is full. During this study large fishing vessels were observed in Mabini on three nights in one week, but the Bantay Dagat was unable to enter the water to approach them. In Tingloy also, the Bantay Dagat has encountered problems with preventing illegal commercial fishing. The need to have at least six Bantay Dagat members and two Philippine National Police (PNP) when conducting covert operations, and given the limited budget, it is simply not feasible to approach commercial vessels every time they are spotted encroaching.

Role of tourism

Dive tourism in the barangays of Santo Tomas and Talahib, who share joint responsibility for Batalang Bato, is non-existent at present (the only divers visiting the area coming from Mabini on day trips), and so dive resorts have no impact on rules or regulations introduced there. In contrast, each of the MPAs in Mabini has a dive resort located on the coast; Dive 7000 for Cathedral Rock, Arthur's Place for Arthur's Rock, and Planet Dive for Twin Rocks. The first two resorts had a big part to play in the initial creation of the sanctuaries, and had an incentive to support their management in order to attract divers to their resorts. Creation of Twin Rocks, on the other hand, was much more influenced by the local fishing village of Balanoy, with Planet Dive coming into the area at a later date. According to interviews with WWF, and also information from a number of other sources (Christie 2005; Eisma et al. 2003; Oracion 2003), Planet Dive's entry into the area had caused problems with the local community in Balanoy who had felt that the resort was taking over the sanctuary which they had been responsible for creating. Strong management has helped ensure that the resort takes responsibility for ensuring no illegal fishing takes place within Twin Rocks, the boatmen approaching anyone found fishing within the boundaries. The opinion of the resort's owners is that they should be allowed to enforce regulations with little outside interference; the opinion being that the Bantay Dagat's main role should be enforcing laws pertaining to illegal fishing in the waters of the whole Mabini Marine Reserve rather than targeting divers for non-payment of the user fee that they are required to pay in order to dive in the waters of Mabini and Tingloy. At the end of 2007 Twin Rocks was awarded 3rd place in the MPA Support Network Best MPA of 2007 competition, and it is more than likely that this was helped by the recent strict enforcement of the sanctuary by the owners. Planet Dive was also the only resort where the management felt that there had been an increase in fish abundance in recent years.

The general feeling now among the community of Balanoy is that the resort is providing vital job opportunities for hotel staff, cleaning staff, construction work, and boatmen. From the results of the interviews there currently appears to be little animosity towards the resort, and for local community members tourism was one of the two main benefits of the sanctuary (in addition to protection of the reefs in order to increase fish catches) given by local residents. The ex-captain of the barangay, senior Bantay Dagat members, fishers, and also local residents who were not interviewed but gave their

opinions, were unanimous in their opinion that tourism was one of the main benefits of the sanctuary.

In contrast, Arthur's Place felt that there had been a visible decline in fish stocks in the past five years, and felt that the reason was the reduced Bantay Dagat presence in the area. An outbreak of Crown-of-Thorns starfish in early 2008 had visible effects on patches of the reef in Arthur's Rock. At Cathedral Rocks, the owners of Dive 7000, and also a long-term dive guide in the local village of Bagalangit, similarly felt that the number of fish had declined recently, and reported that cyanide and spear-fishing was still regularly occurring within the sanctuary – compressors on boats used for illegal fishing being heard on two nights in the week prior to the interview. They were also concerned that even when they contacted the Bantay Dagat to inform them of illegal fishing nothing was ever done about it.

The intention of the CRMB in Mabini is that the MR-REC will be the ones to manage the sanctuaries. However all the resort owners interviewed felt that the current level of activity of the MR-REC was insufficient to maintain an adequate level of management and enforcement. The limited amount of activity of the MR-REC so far is no doubt partly due to the committee only having been created in 2006, but it is nevertheless a concern that they have not been able to gain the support of certain stakeholders. The resort owners also felt that the Bantay Dagat was currently too inactive and they couldn't see where the money from the diver fee was being spent. Although resort owners on the whole understood the difficulties in funding the Bantay Dagat and the MR-REC, all of them were concerned at the lack of visible results from the diver fee. A common complaint was that too much time and money had been spent on too little. The main results being the construction of concrete marker signs on the beach to signify the outer edge of the sanctuary boundaries, and also the installation of some marker buoys.

In Tingloy, ordinance 01-2003, which created their CRMB, states that “an aggressive drive to enhance tourism in the area is a shared-priority concern of the Municipal Government of Tingloy and the Provincial Government of Batangas”. The promotion of tourism is clearly a high-priority factor to those involved in the management of Batalang Bato, although there is still uncertainty and disagreement as to exactly how it can or will be done. In September 2007 the CCEF (Tiro & Meneses 2007) reported that within the coming months the BBMC planned to implement their own user fee system, charging varying rates for different recreational activities in order to sustain BBMC management activities and daily operations, for repair and maintenance of physical structures of the sanctuary, and other related expenses including the provision of incentives to the members of the BBMC. This, however, was provisional upon the need to need to formulate and draft the Implementing Rules and Regulations (IRR) of how the sanctuary will be managed.

When interviewed in March of 2008 members of the BBMC were still hoping to reopen the sanctuary for use by divers, however the exact fees and timing of the opening were still undecided. At present, plans are to open the sanctuary for two years followed by one year of closure in order to allow the reef to recover. When questioned about the feasibility of being able to close the sanctuary for a year after generating revenue from tourism, which they might well come to depend on for management, there was general uncertainty as to whether they would realistically be able to forgo that source of income. Another option also being considered is the opening of a small resort close to Batalang Bato. It has been suggested by the NGO to the management committee that if they were able to raise sufficient revenue from their own user fee a small native resort could be

opened to provide a cheaper alternative to resorts in Mabini and to raise much needed funds for future management.

Observed and perceived changes in fish catches and overall health of the reef

Perceptions towards the MPAs in terms of increasing fish catches were positive from the vast majority of those interviewed. In both Mabini and Tingloy 19 respondents felt that the MPAs had been very successful in increasing catches, accounting for 56% and 79% of the totals respectively. Most of those who were unsure or who felt the MPAs were “neither successful nor unsuccessful” at increasing fish catches came from either the areas close to Cathedral Rocks and Arthur’s Rocks sanctuaries, and tended to be those from within the tourism industry who had less direct contact with the fishermen of the municipality and were also able to see firsthand any changes in the numbers of fish in sites outside of the sanctuaries.

All fishermen interviewed (8 in Tingloy and 6 in Mabini) when asked their level of satisfaction with the results of the MPA in terms of increasing fish catch reported that they were very satisfied. Perceptions of all fishermen towards the MPAs were positive, with the overall view being that fish catches in terms of both size and abundance had increased significantly as a result of the MPAs. Quantifying exact increases is difficult without accurate data assessing changes in fish landings over a given period of time, however all fishermen interviewed in Santo Tomas were unanimous in their conviction that a greater number of large fish were being caught in the past 2 or 3 years, even in areas immediately in front of the village, which is located approximately 1 km to the west of Batalang Bato.

With regards to changes in the overall health of the reef in terms of coral cover and fish abundance (both target species and non-target), all respondents from all stakeholder groups in both municipalities attributed significant improvements in the reef to the presence of the protected areas (see fig. 9), the majority of these considering them to have been very successful. This is no doubt at least partly due to the widespread awareness among those interviewed that there has been a marked and visible reduction in destructive fishing techniques since the introduction of the sanctuaries and enforcement of regulations. Changes in the health of the reef, and the size and abundance of fish were also apparently rapid; improvements being recorded after just 3 years in monitoring coordinated by CCEF according to both local residents and White et al.’s 2005 study.

While the benefits of increased fish catches to communities with a high dependence on fishing as a primary means of income can be more easily seen, other communities may also benefit and be incentivized to participate in management processes if they are able to purchase and obtain more fish as a result. Government members interviewed in Talahib, which relies more on remittances from village members working overseas and has only one person in the village relying on fishing as his main source of income, all reported that their main benefit now comes from the more readily available supply of fish to their village.

In Mabini all fishermen interviewed similarly reported an increase in fish catches, which they attributed directly to the beneficial effects of the sanctuaries. This is in keeping with the results of Christie’s (2005) study of locals’ perceptions on changes in fish catch in Mabini, where all key informants who were interviewed in semi-structured interviews reported an increase in the number of fish. Education and training programmes carried out

by WWF over recent years had raised awareness of the importance of reefs as a spawning and juvenile habitat, and the need to eliminate the destructive effects of dynamite fishing on the reefs and fish population; these being the main reasons given for the observed increase in fish stocks by all people interviewed.

Results of scientific monitoring projects

The reefs of Mabini and Tingloy have been well studied over the past two decades by a number of different organizations, including the Haribon Foundation, CCEF, WWF, Coral Cay Conservation, and several Philippine universities. Much of the long-term data on changes in the overall health of the reefs comes from the Saving Philippine Reefs studies (e.g. White et al. 2001; White et al. 2005), initiated by Dr. Alan White and also organised by CCEF with support provided by Earthwatch Institute. The data below summarizes the results of those studies (White et al. 2005) in order to compare it with the anecdotal evidence of environmental improvements seen by those interviewed:

Arthur's Rock Sanctuary:

Live coral cover was fair to good and had been fairly consistent from 1991 to 2005. Densities of primary target such as groupers, snappers and emperors are low. Mean fish density for non-target species had increased slightly since 1991, most of that increase being in the years 2001 to 2005. However, there had been a lack of improvement in target species density and an overall decrease in species diversity; indicating that fishing pressure from adjacent areas and also possibly poaching within the sanctuary could be preventing recovery of fish populations. The study suggests that the sanctuary would benefit from better enforcement and protection efforts by the managing body.

Twin Rocks Sanctuary:

The sanctuary is well protected and seems to be benefiting from closure to fishing. Although the coverage of soft coral doesn't appear to have shown much change, the amount of hard coral in the shallower areas saw a consistent increase from 1991 to 2005. Although diversity and abundance of all fish species could only be described as moderate, it was significantly higher than all other study sites except for Batalang Bato. The species richness of both target and non-target fish had shown an increase since 1991, but the mean fish density had only increased for non-target species; target species showing no increase.²

Cathedral Reef and Cathedral Rock Sanctuary:

The sanctuary of Cathedral Rock and its fringing reef Cathedral Reef has particularly good hard coral cover; several mooring buoys for dive boats no doubt helping prevent anchor damage. The Cathedral Reef part of the sanctuary has excellent live hard cover compared to the other MPAs, however, mean species richness of both target and non-target fish has

² This may recently have changed since a large school of jacks born in December 2006 is also now resident and thriving in the sanctuary.

shown a decline since 2001. In addition, although mean fish density of target species has remained consistently low in Cathedral Reef, the density around Cathedral Rock had shown a decrease from 343.5 individuals/500m² to 200.5 individuals/500m².

Batalang Bato:

The reef here is dominated by soft corals which comprised 40.9% of the substrate cover in the deeper parts surveyed (7-8m depths) to 43.8% in the shallower parts of the reef (2-4m depths). This sanctuary has the highest grouper density and a significantly higher biomass of groupers than all the other areas surveyed. Biomass of other target species is also fairly high compared to other sites. The survey attributes the high target fish biomass to the strict enforcement at the time.

The study showed that the fish diversity, abundance and biomass of target species was higher in MPAs than non-MPA sites. Batalang Bato and Twin Rocks had a significantly higher biomass of piscivorous target fish species which they attributed to the good management and enforcement of the sanctuaries. In contrast Arthur's Rock and Cathedral Rock had fewer target species and lower biomass. The abundance and diversity of butterflyfish and angelfish had also decreased compared to previous years, possibly indicating poaching and/or higher fishing pressure of both target and aquarium fish in adjacent fishing grounds. Furthermore, there was an alarming lack of target species, indicator species such as butterflyfish, and a general lack of larger fish, in non-MPA sites, even those with quite good coral cover.

Solandt et al.'s 2002 study also found a complete lack of certain target species during their survey dives, 6 of which being local commercially important species. White et al. (2005) conclude that the few small sanctuaries may not be enough to balance the ongoing exploitation and degradation activities taking place in the municipalities' waters. Without an urgent improvement in management of not only the sanctuaries but also the whole of the municipal waters there may result a "failure of these few marine sanctuaries in the expectation of biomass spillover (export of adult biomass) and recruitment spillover (export of propagules)".

Within the barangay of Talahib, several hundred metres to the east of Batalang Bato, lies a fringing reef known as Apol's Point, discovered by divers in the late 1980s. It is currently hoped by those within the barangay council of Talahib that part of this relatively small reef, stretching a few hundred metres along the coastline, may be the location for the establishment of an additional MPA in the near future. This particular reef lies completely within the barangay of Talahib and so if protected full responsibility, and also possible future revenues from dive tourism, would go to Talahib. However, snorkeling surveys carried out for this study along the reef to depths of approximately 10 metres revealed an almost complete absence of commercially important target fish species during the times surveyed. Overfishing is a clear problem, and there appears to very little, if any, spillover of fish from Batalang Bato located several hundred metres to the west; any spillover that does occur likely being caught quickly by the local fishermen. Patches of soft coral shows signs of recovery in some areas, and also occasional patches of hard coral, however the reef currently suffers from sedimentation in many areas, partly caused by a nearby river.

Despite the overwhelmingly positive impression by those interviewed that the MPAs have been responsible for a substantial increase in the number of target fish species, the scientific research carried out in the area does not seem to show a significant increase in

fish numbers in non-MPA areas; in fact showing an “alarming lack” at some study sites. The visual surveys at Apol’s Point also hint at a lack of spillover from Batalang Bato, although this would need to be investigated with more in-depth study.

Conclusions

In Mabini part of the reason for the establishment of the sanctuaries was undoubtedly to attract tourists to the area, and this has caused resentment in the past towards the resorts by the fishermen. In order to prevent this kind of resentment from happening in Tingloy it is important to establish the exact benefits to be expected from opening the sanctuary to divers in order not to create tensions which may lead to a decrease in support for the sanctuary if some individuals feel they are being negatively affected or excluded by an increase in tourists to the island.

One of the problems at the moment of having no formalized plan in either of the study sites is that it is unclear exactly what the long-term quantifiable objectives of the sanctuaries are in terms of increasing fish catches and providing a source of income through user fees. White et al. (2005), who have conducted several studies of Mabini and Tingloy since the early 1990s, concluded that the formulation of an integrated long-term management plan was necessary, and that it could be used as the focus of discussion for stakeholders and in various workshops and education seminars. In order to sustain the MPAs in the future it is necessary that those involved in their management have long-term objectives towards which they can work.

The management bodies as they now exist show a lack of unity on certain issues, and for many people there is a feeling that the current level of activity of the different committees and organisations is inadequate to make any noticeable improvement in the quality of the MPAs. Although the management of the MPAs should in theory be the responsibility of all stakeholders affected, at present in both municipalities the degree to which the different stakeholders are involved in the day-to-day management of the sanctuaries varies widely. Although the fishermen are supposed to be one of the main beneficiaries they appear to show less interest or commitment than would maybe be expected. Oracion’s (2003) study of Mabini and Tingloy similarly found that an absence of interest and pre-occupation with other activities, e.g. fishing and guiding divers, was one of the main reasons for not being involved in attending discussions and public hearings, and participating in other CRM activities such as coastal cleanups.

In Tingloy, most of the management is controlled by the head of the STKST and this has created friction among others who feel that their views are not listened to. However, in reality the lack of commitment by the fishermen to participate in activities concerning the sanctuary is likely an indication that it is necessary for one or two committed members of the community to assume a higher level of responsibility. A point of concern though is that opening Batalang Bato to divers in the future, if the plan goes ahead, may possibly isolate the fishermen further and affect their opinions and behaviour towards it; especially if profits from the introduction of a user fee are not shown to have any tangible benefits upon the fishermen. On the other hand, a steady stream of income could improve management and enforcement, thus leading to a higher number of fish spilling over into neighbouring fishing grounds.

The support of local government is essential to ensure that the MPAs are given the necessary financial resources needed management and enforcement. Without this support

it is doubtful that they will be able to sustainably finance themselves into the future or that there will be the possibility of establishing other MPAs or extending the boundaries of the existing ones.

Although the interviews revealed general support and acceptance of the MPAs and the marine reserve, the results also revealed an array of complications encountered in both their implementation and their management arising from conflicts of interest, misunderstandings, lack of community participation, and sustainable financing. The results highlight that despite the length of time the MPAs have been in existence there still exist a number of underlying problems that continue to affect their sustainability and effectiveness. The existence of a formalized management plan is often assumed to be essential for effective management of a protected area, and it can help achieve adaptability and continuity of management in situations that might otherwise jeopardize the long-term success of a particular conservation programme by specifying contingency measures and by designating roles to different individuals. One of the problems at the moment of having no formalized plan in either of the study sites, is that it is unclear exactly what the long-term quantifiable objectives of the sanctuaries are in terms of increasing fish catches and providing a source of income through user fees.

In Mabini, the resorts have always had a vital role to play in the management of the MPAs there, and it is quite likely that without the support of the tourism industry over the years the MPAs would not continue to exist as they do today. The question is, to what degree should the tourism industry be allowed to assume responsibility for the management of the sanctuaries to the exclusion of other members of the community? Despite one of the initial aims of the sanctuaries being that the fishermen should in the long term be one of the main beneficiaries of the sanctuaries, in reality the diving industry benefits far more financially. However, the resorts can have a vital role to play in enforcement of sanctuary regulations at a time when the Bantay Dagat is unable to patrol for illegal fishing. This is especially true in the case of Twin Rocks, although less so for Cathedral Rocks and Arthurs Place. If the fishers ultimately benefit from the resorts having a larger role in management of the MPAs, and if the local communities benefit from increased employment opportunities, then MPAs should in theory be able to reach some kind of steady state level of management that is sustainable long term.

The problem is though that according to scientific studies carried out in the area, it is only really within the sanctuaries that fish populations are increasing at any kind of significant rate. For example, the conspicuous lack of any sizeable fish in the non-protected Apol's Point, lying just several hundred metres to the east of Batalang Bato, is worrying as it brings into question the effectiveness of the MPA in providing fish to surrounding areas through the spillover effect. This could potentially be affected by the fact that ocean currents in the area flow from east to west towards Balayan Bay (Salamanca et al. 2002), although overfishing and sedimentation is clearly having a profound effect on the reef. However, the Talahib council appear to understand the need for long-term rehabilitation of the reef if they are to be able to attract divers to it and earn revenue from it at some time in the future. The reef at Batalang Bato was also almost devoid of any sizeable fish pre-implementation, but saw significant changes within just a few years.

The lack of target species outside the sanctuaries is of concern because it brings into question whether the MPAs are in fact large enough or effective enough to have any kind of impact on the surrounding waters. Christie (2005) points out that the lack of an increase in target species outside the MPAs could be caused by any spillover being caught

at the same rate that it is leaving the sanctuary, although the more likely explanation is that the sanctuaries are not providing the amount of spillover necessary to replenish and increase the fish stocks outside of their boundaries. However, this is in contrast to the fishermen's opinions that there had been an increase in fish catches since introduction of the MPAs, so it's necessary to investigate how much of this increased catch can be attributed to the MPAs. Further fish catch recordings need to be carried out at periodic intervals in order to measure any changes in fish catch and composition. A more likely explanation for the increase observed over recent years is that the increased Bantay Dagat presence in past years had helped reduce the amount of destructive and illegal fishing that had been going on in the whole municipal waters. Without doubt the destructive fishing methods coupled with the commercial fishing fleets coming close to shore have the most impact on fish populations in the region, and so it stands to reason that tackling these issues is likely to have far greater effect than attempting to replenish fish stocks by protecting spawning populations and juvenile habitats in what are relatively small areas of the municipal waters. White et al. (2006) point out the risks associated with a MPA being too small of fish migrating out of the boundaries too often and being susceptible to overfishing.

This is not to say though, that the MPAs do not have significant effects on the ecosystems within and close to their boundaries. However, given that most fishing is done at quite long distances from the MPAs it is questionable how much of the increased fish catches can be caused simply by adult or larval spillover effects. What the sanctuaries can most certainly achieve though is raised awareness and vigilance among local communities, and also an income source needed to fund the Bantay Dagat through the diver user fee. The presence of commercial fishing boats, observed within municipal waters on three nights in one week, should be a priority concern for the Bantay Dagat of both Mabini and Tingloy.

The problems of a shared user fee between two different municipalities were apparent. There was a general feeling of resentment in Mabini that 50% of the fee should go to Tingloy, partly because they felt they were not demonstrating enough of a commitment to enforcement of regulations and could not show enough tangible evidence of where funds were being spent. For Tingloy to open Batalang Bato in the future and generate their own source of revenue risks causing resentment in Mabini, especially among the divers and dive resorts who already resent the fact that they are paying a user fee but have been excluded from diving in the sanctuary there. Discussions must take place between both Mabini and Tingloy before any user fee system is introduced at Batalang Bato. In addition to this it important that the council of Talahib involves the neighbouring barangays in any possible future discussions regarding the closing of Apol's Point to fishing and the establishment of a sanctuary there if they are to gain the cooperation of the island's fishing communities.

With the resorts having responsibility for the collection of the user fee it is important that they can see tangible benefits with regards to how the money collected is spent. With the majority of the fee supposedly going towards Bantay Dagat patrols, the dissatisfaction on the part of the resort owners is understandable when they feel there is a lack of patrols and enforcement in the area, and in cases where the resorts have more effect on preventing illegal fishing in the sanctuaries the boatmen may actually consider themselves to have the right comply fully with the dive pass system.

The need to ensure compliance with payment of the user fee is imperative in order

to sustain patrols of the area by the Bantay Dagat. The legal loophole that prevents them from apprehending divers for non-payment unless they have actually been observed diving needs to be addressed. The number of boats leaving Balanoy, for example, loaded with divers and equipment clearly to be used for diving provides a perfect opportunity for dive pass inspection on the shoreline without the need for expenditure on the patrol boat and fuel costs. Recent rises in fuel costs threaten to further limit the amount of time that can be spent on active patrol monitoring the dive boats in the area.

The fact that all funding for the Bantay Dagat comes from the user fee means that they have an incentive to focus more time on ensuring divers have paid the user fee. Dive boats are much easier to target than fishing boats which might try to evade detection or capture by the Bantay Dagat, and there is practically no risk of the kinds of dangers that sometimes occur when illegal fishing boats are approached - shootings between illegal fishers and Bantay Dagat having occurred on rare occasions in the past. The irony here is that they can end up in a vicious circle spending most of their limited patrol time focusing on enforcing regulations which ensure that their source of funding, i.e. the dive passes, are being complied with in order that they can finance future patrols to again target the divers and dive boats. This would be understandable if it were the divers that were responsible for the drop in fish numbers, however, the main threat to the coral reef and the fish populations comes not from the divers but from fishing, both legal and illegal. Given the small size of the reserves it is unlikely from a biological point that they can be solely responsible for the reported increase in fish catches even in deeper waters one or two kilometres or more from the sanctuaries.

Both study sites currently depend heavily on NGO support, and the NGOs are by far one of the most active of the stakeholders in the region. However, what will happen if and when they leave the area is unclear. Given the amount of time spent on capacity building in the two municipalities, the managing bodies should by now be at a stage where they have more confidence to continue if and when the NGOs leave. At present though, it seems that there is still more work to do on solving underlying problems of participation, equity, and lack of communication.

The installation of the fourth marker buoy around the perimeter of Batalang Bato would help delineate the exact boundaries of the sanctuary, but overemphasis on the importance of marker buoy runs the risk of diverting attention and limited funds away from these more serious underlying problems regarding enforcement of regulations and a general apathy amongst many community members towards participating in the management of the MPA.

Encouraging the tourism industry and constructing a resort on the island would have advantages for the island and perhaps ensure a sustainable source of funds. A major advantage of this would not only be the source of revenue for managing the sanctuary, but also the fact that it would probably act as a deterrent to illegal fishers in the area. However, raising funds for the construction of a resort would most likely require outside investment, and would be dependent upon the development of certain infrastructure and facilities. Provision of a running fresh water supply, rather than relying on water collected from a nearby well, would be an important component of any resort development plan.

The role of government as “sponsor for technical support, credit, marketing assistance or protective legislation” means that governments should remain a key player in CRM programmes (Dey & Kanagaratnam 2007). Communities are often unable to sustain conservation programmes without governmental assistance, but it is vital that the

governments give more priority to CRM activities. Raising awareness and the willpower of the respective municipal mayors will be one of the major challenges in the years ahead if the MPAs are to succeed. As the MPAs exist at present they are most likely too small and/or too few to have the desired effect on the whole of the municipal waters that is necessary to truly benefit the fisherfolk. However, if this is to become a feasible option it is vital that there is government understanding and support. The task at hand is to further build both political and local support, achieve demonstrable results that benefit not only the tourism industry, improve communication between Mabini and Tingloy to prevent misunderstandings and distrust, and to build capacity and trust among the different stakeholder groups and committees in order to strengthen marine conservation activities in the two municipalities.

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