



ICM Solutions

Enhancing Food Security and Sustainable Livelihoods in Batangas, Philippines, through MPAs and ICM

- The long-term protection and management of coastal and marine resources entails good governance and on-the-ground interventions. In Batangas Province, the implementation of marine protected areas (MPAs) and MPA networks within the framework of an integrated coastal management (ICM) program have provided benefits in food security and sustainable livelihoods, and engaged stakeholders in various sectors and at varying scales to integrate and complement each other's efforts.
- Addressing fish stocks goes hand in hand with habitat restoration initiatives in improving food security and reducing ecosystem degradation. Scientific analyses, in parallel with consultations with locals as well as commercial fishers, provide both scientific and practical rationale for management interventions, including seasonal closures for fishing.
- It is important to educate and build awareness in order to mobilize the community for environmental stewardship and consequently make the community a partner in sustainable coastal development. By facilitating the fishing community themselves to guard and maintain the MPA, the community begins to take ownership and responsibility for local conservation and to protect their livelihoods as fishers.



Context

“I do not have parcels of land for my children to inherit. I pass on to them the knowledge and lessons that I have learned in a lifetime of fishing ... lessons about conserving and protecting the marine and coastal resources. Experience has taught me there is a greater wealth from the sea if its resources are sustainably managed.”

These are the heartfelt sentiments of Doroteo Cruzat (Mang Jury), a former fisher who was taught his craft in the waters of Mabini, in the Province of Batangas, Philippines, when he was 10 years old. For Mang Jury, together with his father and seven brothers, fishing was the sole means of livelihood, security and income for the family. Mang Jury recalled that, in the mid-1970s, they were able to catch 10 kg of fish per day — enough for his family’s consumption, with the rest being sold to cover other expenses. The Cruzat family was truly living off the natural bounties of the sea.

The situation changed, however, when commercial fishers started encroaching on the municipal waters of Batangas in the early 1980s. Illegal and destructive fishing became a common sight. Local fishers were fortunate if they were able to catch half of their catch from previous years. To compensate, they often followed the blast fishers to gather any remaining fish, which the illegal fishers would leave behind after a blast incident.

Initially, local fishing communities were not concerned about the impact of blast fishing as long as there was enough fish on the table. But as time went by, even that became a problem. Commercial fishers were harvesting all the fish in their municipal waters, using illegal gear, such as *basnig* (bag net) and *pukot* (ring net). In addition, the coral reefs that were the principal fishing grounds of the local fishers were being destroyed and degraded as a result of blast fishing and anchorage of commercial fishing boats. The future of fishing in Mabini, and that of the Cruzat family in particular, became bleak.

Solutions

Integrated coastal management (ICM) was introduced in Batangas Bay in 1994. One of the major outputs of the ICM project in Batangas Bay was the Strategic Environmental Management Plan (SEMP 1996-2020), which served the wider purpose as the road map for the development of the bay without compromising the marine and coastal environment and natural resources. The SEMP provided the platform by which the various sectors, including local government and the fisheries, could come together with a common vision and action program for the development of their coastal resources.



Photo credit: Provincial Government of Batangas.

Build upon what is already in place

Historically, the concept of MPAs was first introduced to Batangas by the Haribon Foundation, a nongovernmental organization (NGO) in the 1980s. MPAs, as explained to the locals, were designated areas where all forms of fishing would not be allowed. This was necessary in order for the fishing stocks to recover and grow. Eventually, the outcome would be more fish to catch. Fishing would only be allowed outside the designated perimeter of the MPA.

At first, there was apprehension and resistance from the fishing community. The perception was that this restriction would limit their fishing area and they would have less access to fishing sites. After a long process of awareness building and consultation, the community's perception changed and Twin Rocks in Mabini, the first marine sanctuary in Batangas Province, was established in 1991.

Today, there are more than 30 MPAs in the coastal areas of Batangas Province, with new sites still being identified. To address the impact of MPAs on the livelihood of the fishing community, local governments identified the need to introduce alternative livelihoods as part of the SEMP implementation. As a consequence, MPA management plans were modified to include the creation of diversified livelihoods in aquaculture and seaweeds production as well as value added processing as salted or canned fish.



Involve the community in enforcement

The implementation of MPAs consequently needed the creation of a team to guard against illegal destructive fishing practices and the intrusion of commercial fishers. Mang Jury and the rest of the fishing community were encouraged to help maintain the MPA as members of *Bantay Dagat* (Sea Patrol). A series of capacity-building activities were conducted in the community to provide the members with information on the environment and fishery laws, as well as the values of and threats to the marine coastal resources.

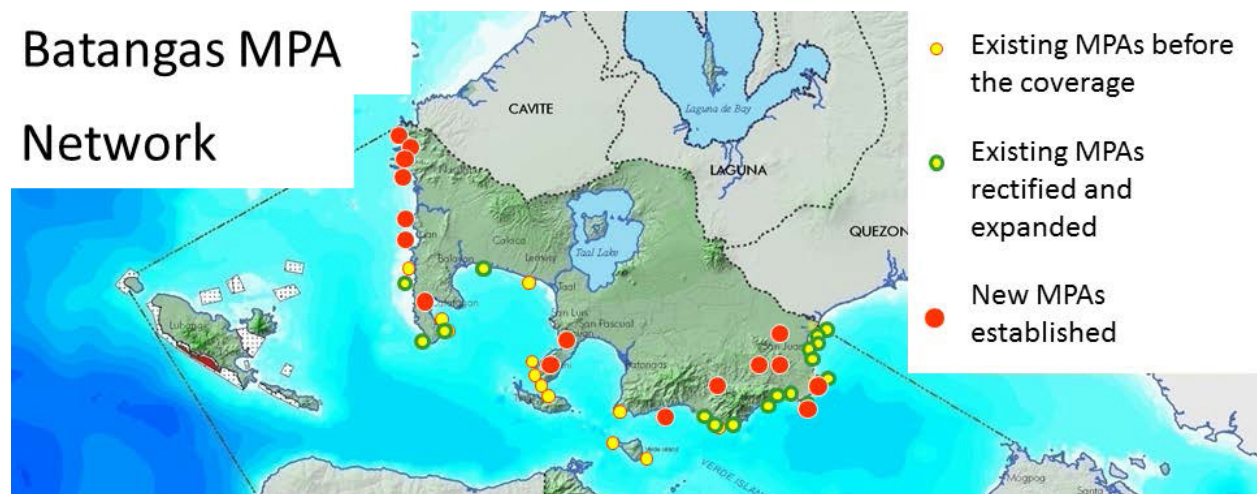
Bantay Dagat became a key partner of the local government in enforcing fishery-related legislation. Through the coordinative efforts of the Provincial Government - Environment and Natural Resources Office (PG-ENRO) and the support of the local government and nongovernmental organizations, continuous capacity building is being done to strengthen the operations of *Bantay Dagat*. This includes the deputization of more members and conducting Advanced Fishery Law Enforcement and paralegal training.

One of the country's largest power producers, First Gen Corporation also supported the activities of the *Bantay Dagat* Network in Batangas. First Gen Corporation provided support for honoraria, gasoline supply, food allowance, cellphones, GPS devices and other equipment, training, legal assistance, and educational subsidy. Recently, *Bantay Dagat* members in Batangas also received support from First Gen in the form of training, and life and accident insurance (Inquirer, 2015).

Establish networks to ensure complementing and sustainable initiatives

In 2005, the Conservation International (CI)-Philippines initiated a marine biodiversity program in the Verde Island Passage Marine Biodiversity Conservation Corridor as part of the Sulu-Sulawesi Seascape Project. Existing MPAs in Batangas were within the bounds of the Verde Island Passage, thus forming a network of MPAs promoting the ecological integrity of the area. The network of MPA facilitated the sharing of information, experiences, and resources; the resolution of conflicts; the assistance to other LGUs in the establishment of their own MPAs; and the consolidation of law enforcement efforts.

Similar to the concept of forming a network of MPAs, a network of Bantay Dagat in the coastal municipalities was also established to consolidate the coastal enforcement efforts in the province. Thirteen of the fifteen coastal municipalities became part of the Bantay Dagat Network. Over 350 volunteers are now patrolling the coastal waters of Batangas.



MPAs of Batangas Province

Implement seasonal closures in overfished waters

In the Calatagan municipality, medium-scale commercial fishers proposed a closed season restricting fishing activities to address the decrease of fish stock. This idea was brought to the provincial level and was eventually implemented to cover certain areas of Balayan Bay. A fisheries profile commissioned by CI-Philippines examined the reproduction cycle of the fish in the bay and gave recommendations on how to carry out the closure during the peak of certain fishes' spawning season to rebuild the fish stock. The scientific analysis was the basis of several consultations held with the commercial fisher wherein they raised their concerns and eventually established consensus on the seasonal closure.

The seasonal closure lasted for three weeks from December 11 to 31, 2014. Fishing for round scad (*galunggong*) and big-eyed scad (*matambaka*) using purse sein, the ring net, and bag net fishing equipment was prohibited. The penalty for violating these prohibitions was set per fisher instead of boat. Cash for Work programs were provided for over a thousand affected fishers during the closed season by the Department of Social Welfare and Development. The fisher folk engaged in environment related alternative employment like cleaning and removing clogs from coastal areas, rivers and canals, and maintaining mangrove walkways.

Increased food security from alternative livelihoods

With the degraded coral reefs recovering, ecotourism in the area is growing in popularity. Through the popular dive sites, additional sources of income are available for the coastal communities, contributing to increasing their food security. As the number of resorts opening along the coasts increases, from ten in the 1980s to more than 70 in the 2010s, local communities have access to alternative livelihoods in the tourism sector, as dive guides or staff in the resorts. Others like Mang Jury, who have been fishers for most of their lives, are now dive guides and dive masters.



Local communities consider income from the dive tourism industry more reliable than income from fishing because of the varying fish catch (Gonzales et al., 2002). Aside from providing steady sources of income, the popularity of the diving site has contributed to improved infrastructure and utilities in Mabini such as better roads, cellular phone networks, and 24-hour electricity.

Small-scale fishers who have alternative livelihoods that provide a relatively reliable income through daily wages are less dependent on fishing for their food security. In less fishery-dependent towns, like Batangas City and Mabini, a greater percentage of the fishers are engaged in non-fishing livelihoods compared to their more fishery-dependent counterparts. Fishers, particularly those newer to the industry, would likely participate in these kinds of livelihoods if they are available (Muallil, et al., 2013).



Increased awareness of environmental issues

The Bantay Dagat was relatively successful in Batangas. It helped lessen illegal fishing and heightened the people's consciousness on environmental issues. This experience highlights the importance of making communities a co-owner of and a partner in coastal management projects. When Bantay Dagat members were asked about their motivations to volunteer, they identified that it is out of a sense of responsibility for local conservation and to protect their livelihoods as fishers (Coastal Resources Center, 2015).

For Mang Jury who has been serving as a member of Bantay Dagat for more than ten years, the transition was not an easy decision. It took four years before he became convinced to join the Bantay Dagat. He then realized that even if he was not paid for the extra work he would devote to Bantay Dagat, he needed to protect the resources, not only for his family's benefit but for the benefit of all fisher-families and their children's children.

Decrease of illegal destructive fishing practices

Mang Jury has attested that there is no more blast fishing in Mabini as the Bantay Dagat has successfully curbed once prevalent illegal cyanide and dynamite fishing in the area. The illegal entry of commercial fishers within the municipal waters of Mabini has been through regular and high visibility patrols (Coastal Resources Center, 2015). Any commercial fishers who enter the municipal waters are immediately apprehended. The local fishing communities in Mabini realize the responsibility and implications of being stewards of the sea, and are quick to report and take action against violations.

Increases in fish catch

The experimental seasonal closure in 2014 generally had positive effects. Many fishers reported that fish catch increased after the closure. Initial results have shown that a month after the closure, there was an increase of the quantity and quality of fish in the local market. The fishers themselves have indicated their willingness to repeat a seasonal closure. Because of its success, longer seasonal closures with expanded geographic scope and extending it to include municipal fishing operations is being considered.

The results of a five-month (December 2006 to April 2007) fish catch monitoring program conducted by the World Wide Fund for Nature (WWF) Coastal Resources and Fisheries Conservation Project supported the benefits of MPAs. The study revealed that gulyasan registered the most frequently caught fish, totaling 22,265 kg in Tingloy and 2,776 kg in Mabini (WWF-Philippines, 2007). This trend still continues as revealed in the fisheries profile commissioned by CI-International. Tuna, which includes the gulyasan, has dominated catches since the 1980s. From 2002 to 2011, tuna has comprised over a third of pelagic catches off Batangas, while galunggong and sardines made up about 20 percent each. Unfortunately, tuna catches in the 1980s were about two to three times higher than the amounts caught in the past ten years, indicating that local tuna are still overfished. On a positive note, annual scad production in Batangas has increased by about seven percent (7%) annually over the past ten years (Campos, 2013).



Lessons Learned

- As MPAs are threatened by various external factors, they function more effectively if they are managed within a wider geographical area and management scope. The governance mechanism established under the broader ICM framework provides the necessary governance structure for promoting the MPAs' objective for sustainable livelihood and biodiversity conservation.



- It is important to develop a strategic long-term road map (e.g., SEMP) for the sustainable development of an area. In the Province of Batangas, the SEMP provided the platform upon which the various stakeholders channeled their contributions towards achievement of a common vision for the sustainable development of the marine and coastal areas of the province.
- Recognition of the achievements of a demonstration project (e.g., seasonal closure for fishing in Balayan Bay) provides a good foundation for replication.
- The achievements of a demonstration project (e.g., seasonal closure for fishing in Balayan Bay) provides a good foundation for scaling up and replication of good practices. This is particularly relevant for the key stakeholders (in this case, the fishers) who saw benefits from the demonstration, and expressed willingness to extend the conservation program.



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