

# COST-BENEFIT STUDY OF SELECTED MARINE PROTECTED AREAS IN THE PHILIPPINES: IMPLICATIONS ON FINANCING, COASTAL GOVERNANCE AND SUSTAINABILITY

Maria Zita Butardo-Toribio

## EXTENDED ABSTRACT

Marine protected areas (MPAs) are ‘places in the sea designed to protect the marine environment from the growing tide of human impact’ (Gravestock, 2008). In the Philippines, MPA is used as a general term applying to any ‘defined marine area established for conservation and protection and where activities are managed based on specific rules and guidelines’ (Miclait and Ingles, 2004). The establishment of marine protected areas (MPAs) has gathered more momentum in recent years and has become one of the most important coastal resources management entry points in the Philippines (Mamauag and Gonzales, 2008). At present, there are more than 1,100 MPAs in the country which are expected to contribute to arresting continued decline of coastal and marine habitats and fishery stocks. Promising results due to MPA establishment in terms of increasing trend in coral cover in MPA sites across the six marine biogeographic regions of the Philippines have been observed by Arceo et al (2008).

MPAs play an important role considering that the Philippines has been revealed to be the global epicenter of marine biodiversity (Carpenter and Springer 2005), but also under the greatest threat (Burke and Zelig 2002) making it the hottest of the hotspots (Roberts et al. 2002). Moreover, Carpenter et al (2008) predicts that the country may experience the highest risk of loss to global biodiversity due to climate change if no adaptation measures are immediately put in place.

Six marine protected areas (MPAs), two along Camotes Islands, Cebu Province, and four along Illana Bay in Zamboanga Del Sur were studied to estimate the costs and benefits of establishing a MPA and how are these shared on-site in order to gain insights

on financing and institutional needs of this promising management approach. The study also looked into the relationship of good governance practices to effective and efficient MPA management. Data came from semi-structured key informant interviews, results of biophysical monitoring, and secondary sources. All sites are being technically assisted by the Philippine Environmental Governance Project Phase 2 funded by the United States Agency for International Development (USAID).

The results show that five entities share the financial costs of the six MPAs studied: 1) LGUs (municipality, barangay or village, province); 2) local revenue streams; 3) national government agencies; 4) traditional and non-traditional donors and assisting organizations (aid organizations, private sector, NGOs, etc.); and 5) local communities.

The initial cost of establishing and managing an MPA is over-all high. The study reveals that small local government units (LGU), villages, and grassroots organizations have limited capacity to finance MPAs using internal traditional fund sources. External financial and technical assistance, networking and partnerships played key roles in defraying the financial costs especially at the initial stages of establishment and implementation of the MPAs studied.

Funding limitation can pose a threat to the sustainability of the operation of the MPA as there is as yet very limited innovative and sustainable funding generation being done. Because sustained funding is crucial to MPA management, diversity of funding sources and the number of supporters of MPAs should be maximized. Toward this end, there is a need to examine how traditional donor support like multilateral assistance to

MPAs can be tapped more effectively. There also is a need to attract non-traditional donor support. This includes the private sector, which can be invited to support MPAs as part of their corporate social responsibility.

Collaboration in the management of MPAs among local stakeholders seems a good strategy for defraying the costs of local resource conservation and in promoting the value of shared environment stewardship. The study shows that local communities contribute significantly to MPA management through their unpaid labor. They should receive tangible benefits from improved management of MPAs to sustain their interest and cooperation. Such incentives will also compensate for any losses they might incur because of the establishment of the MPA.

In addition to creating internal collaborative arrangements within their territories, the LGUs hosting the MPAs formed inter-LGU collaborations in MPA management and law enforcement. Inter-LGU collaboration and networking seems important to achieving better effectiveness and cost-efficiency.

Key informant interviews revealed that the host barangays and communities felt satisfied with the socio-economic and ecological benefits resulting from establishment of their MPAs. In addition, there were inferential and anecdotal evidences that all six MPAs brought about improvements in fish stock and biodiversity. This had two unintended effects: one, it attracted fishers from other localities to fish within the vicinity of the MPA; two, it lured non-fishers to shift to fishing. The establishment of a no-take zone made affected fishers to shift their operation to areas outside of the MPA but still within its vicinity so as not to lose their income source. This means that there is a need to anticipate the behavior of affected fishers and to design the MPA so that other critical

resources that might be affected by shifts in fishing location will also be protected. There is also a need to provide livelihood support to affected marginal fishers. The establishment of the MPA had also some negative consequences on livelihood activities of certain sectors of the community. It is necessary to anticipate and mitigate these negative consequences to secure community cooperation and ownership. The above observations underscore the importance of linking up MPA management with the over-all coastal resource management and socio- economic development strategy of the LGU.

Based on estimated Total Economic Value (TEV) of the MPAs, the potential benefits from managing MPAs management are disproportionately large relative to the costs. For instance, it has been estimated that the annual management cost of one MPA represents only 10% of the annualized TEV of the resource. This suggests that marine habitat protection is worth investing on.

The study also looked into the relationship between MPA effectiveness and efficiency and the type of management arrangement involved. Effectiveness can be defined as the ability of the MPA to meet its goals and objectives. Efficiency is the ability of the MPA to meet its goals and objectives with minimum expenditure of resources. To measure management effectiveness, the study used the MPA performance rating developed by Cebu Coastal Environment Foundation (CCEF), as modified by the USAID/EcoGov2 project<sup>1</sup>. EcoGov2 added some indicators that measure adoption of good governance principles of transparency, accountability, and participation in MPA management. EcoGov2 also set minimum indicators that needed to be met before an

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<sup>1</sup> There are five MPA levels, as follows: Level 1 (the MPA is initiated; it has a passing rating; Level 2 (the MPA is established); Level 3 (the MPA is enforced); Level 4 (operations of the MPA is sustained), and Level 5 (the MPA is institutionalized; it has an excellent rating).

MPA can be considered as having achieved a certain level of maturity (for example, for a MPA to be considered established, it should have an approved plan, budget, management body, supporting municipal ordinances, etc.). The MPA level is determined through a self-assessment process involving a multisectoral group of local stakeholders.

Three of the study MPAs have achieved Level 3 while three have a Level 2 rating . The Level 3 MPAs qualified for Level 4 rating based on the CCEF criteria. However, they failed to satisfy fully the USAID/EcoGov2 governance indicators. Pilar MPA accomplished many things on the ground and based on the CCEF rating system could qualify for Level 4. However, it qualified only for Level 2 based on the EcoGov2 indicators.

Interestingly, the two MPAs (Bibilik and Talisay) that had the highest annual cost per hectare also obtained the lowest management effectiveness. Both MPAs implemented major activities in MPA management that entailed high costs. Bibilik is qualified for Level 3 under the CCEF rating, however this was given a final Level 2 rating because of some governance issues. Clearly, outside factors have an affect on MPA management performance. Moreover, management performance is not necessarily related to the type of management arrangement or a function of budget alone. Many factors seem to come into play, which include the political will to enforce rules, the ability to forge collaborations and leverage funds, the degree of efficiency in funds management, and the practice of good governance.