INCENTIVES FOR MARINE PROTECTED AREA MANAGEMENT IN THE PHILIPPINES: RATING, INFORMATION AND USER FEES

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Introduction

Marine protected areas (MPAs) were established in the Philippines as early as 1974. These initial models on Sumilon and Apo Islands and others set forth a framework for coral reef management that has been shown to enhance fish yields to traditional fishers as well as protect and maintain nearshore coral reef habitats for biodiversity and multiple economic uses (Russ and Alcala 1996; White and Vogt 2000; White *et al.* 2000; White *et al.* 2002). Devolution of authority for management of natural resources to local governments (municipalities and cities) in 1991 was the national policy shift that has supported localized management efforts and many more MPAs ordained by coastal municipalities and cities. Now, more than 400 small community-based and local government supported MPAs exist in the country but few (50 or less) are well managed or managed at all (Pajaro *et al.* 1999; White *et al.* 2002). This paper examines the efforts to improve MPA management in the Philippines through the application of economic incentives, a rating system, information sharing and integrated coastal management.

Economic Valuation, Incentives and User Fees

It is necessary to quantify coral reef resource uses, values and benefits in monetary terms in the context of MPA implementation for education and improved human value formation. It is also needed to encourage government and donor investment in coral reef conservation through MPAs. One study of Olango and Gilutungon Islands and their coral reefs, near Cebu, Philippines highlights the value of coral reefs for fisheries and tourism in relation to efficacy and type of management regime (White *et al.* 2000). The study showed that a relatively small investment of less than US$100,000 per year in the protection of the large (4000 hectare) Olango Island coral reef would pay off both in terms of increased fish yields to local fishers and increased tourism revenues. Net revenues could be augmented by up to 60 percent and amount to US$1.4 million annually with improved reef protection. The study also showed that for the small, 15 hectare, marine sanctuary at Gilutongan Island, good management costing about SU$21,000 annually, could increase net revenues to US$200,000 per year including that to off-site tourism (Figures 1 and 2). It was determined that scuba divers were willing to pay about US$5.50 per day to enter the marine sanctuary for diving (Table 1) (Arin and Kramer 2002). Yet, the above increases in net revenue are premised on a user fee to enter the sanctuary of US$4.00 per day. The amount that is actually being collected at the site since 2000 is US$1.00 so that the net revenues have been less than predicted.

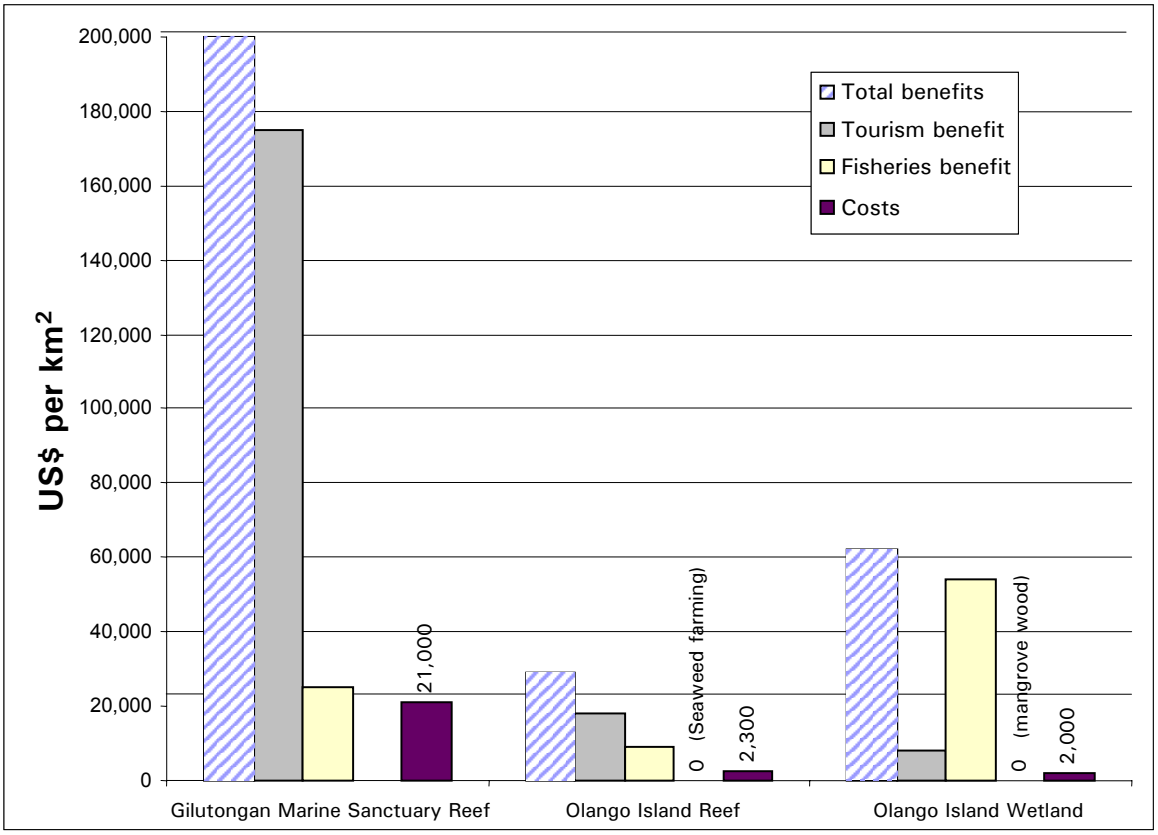

Figure 1. Incremental annual benefits from Olango Island resource use per square kilometer for different management regimes and the cost of management

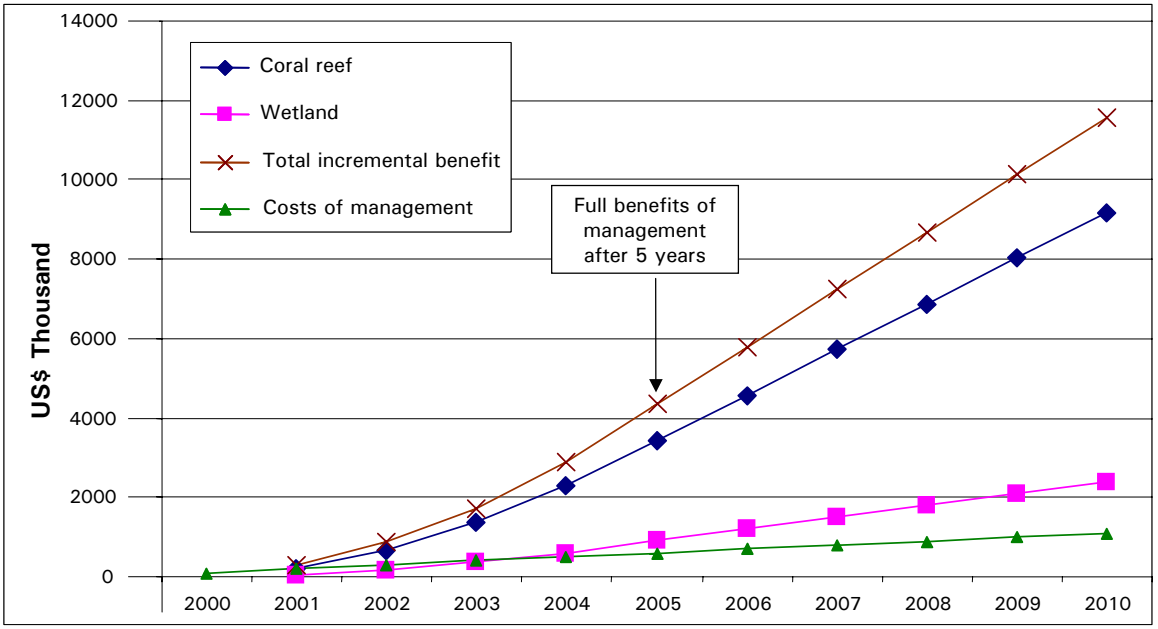

Figure 2. Accrued incremental benefits compared to costs of management from the sustainable use of Olango Island resources reflecting the increasing net annual revenues over the first five years of management

Table 1. Willingness to pay to enter a Philippine marine sanctuary (daily per person) (Arin and Kramer 2002).

	Mabini, Batangas	**Mactan/Olango Island, Cebu**	**Panglao, Bohol**
Average (WTP)	US$3.70	US$5.50	US$3.40
Potential Annual Revenue	95,000	856,000	3,500
	116,000	1,014,000	5,300

In actual fact, user fees in 2001 generated more that US$20,000 to the local government that manages the Gilutongan Island sanctuary. This revenue was generated through the efficient implementation of a boat accreditation and user fee system. The revenue was shared between the municipal government (70 percent) and the island community (30 percent). The costs of management were about US$5000 to cover sanctuary guards, boats, signs and buoys. The private sector has been crucial in agreeing to and complying with the rules imposed for boat accreditation and fee collection through the local diving industry and resort owners. The entry fees are user friendly and easy to administer and the cash flow is transparent. Finally, community members have increasingly been participating in the monitoring and evaluation of the sanctuary so they fully understand the process and the importance of protecting and managing the area. Rule infractions have been decreased to a minimal level. In this system, the financial incentives accrue to local stakeholders and help to cover the costs of management. The potential to increase the fees is great but will be explored carefully.

In addition to the local government managed Gilutongan Island sanctuary, the Tubbataha National Marine Park, implemented under the National Integrated Protected Areas System, is also operating well under a multi-stakeholder management board that administers user fee collection. To enter Tubbataha Park, the fee per trip is US$50 (foreigners) or US$25 (Philippine residents). This revenue is now accruing in a trust fund to generate interest for park management and has helped all stakeholders understand the value in a well-managed reef system. The Tubbataha coral atolls have also been shown to generate large amounts of fish and invertebrate larvae that feed the Sulu Sea marine ecosystem and provide very significant benefits to a wide area (Arquiza and White 1999).

MPA Rating and Information System

In response to the problem of many poorly managed MPAs in the Philippines, various facilitating non-government and government organizations are attempting to develop a common management rating and information system for all variations of MPAs in the country including those legalized by national government. The result will provide information on the extent and effectiveness of MPAs in the country and develop a common management rating system that can feedback information on needed improvements in management to local managers. The new rating system is also being enhanced by use of visitor access fees.

The MPA database that is developing will include the description and status of the MPA, the management rating explained below, human activities and natural disturbances in the area, mean percent substrate cover for reef habitat by year, mean fish diversity (richness) and density and the community perceptions about the MPA management and its benefits. The database is being developed through the cooperation of several key national government agencies in coordination with various facilitating NGOs and local government units. Presently the database has 50 records of which 13 are national MPAs and rest declared under local governments. Seven have management plans and 11 have revenue-generating schemes in place.

The MPA rating system will assist local governments, communities and NGOs improve the management of their MPA. It is comprised of a simple checklist that enumerates the necessary steps to achieve a sustainable and well-managed MPA in the context of the Philippines as shown in Table 2.

Table 2. Rating system used for marine protected areas in the Philippines

The MPA Rating System

- Assists local governments and communities to improve the management of their MPA
- A simple check list that enumerates the necessary steps to achieve a sustainable and well managed MPA

Implementation of the rating system

- Thru field interventions on priority sites
- Thru field surveys on sites
- Cooperation with formal collaborators

Rating System (1)

I. MPA *Initiated*: Passing (Year 1)
- Site selected with baseline assessment completed
- Education program started
- Management body membership tentatively determined
- Preliminary management plan drafted

II. MPA *Established*: Fair (Year 1 or 2)
- Management body formally organized and recognized
- Management plan adopted by community and government
- Ordinance approved by municipal council
- Management activities started. Marker buoys and anchor buoys installed.

Rating System (2)

III. MPA *Enforced*: Good (Year 1 or 2)

- Continued education program about MPA functions/benefits
- MPA outpost and other structures constructed and maintained
- Budget from local government allocated for MPA management
- Active management body. Conducts patrolling and surveillance.

IV. MPA *Sustained*: Very Good (Year 3 or after)

- MPA management plan updated and adopted in a participatory process and; monitoring includes a local participation
- Management body capacitated for financial management as needed
- Environment friendly enterprise and/or fees initiated as part of MPA
- Illegal and destructive activities stopped and within the vicinity of MPA

Rating System (3)

V. MPA *Institutionalized*: Excellent (Year 4 or after)

- MPA management plan incorporated in the LGU development plan
- Management plan reviewed and updated
- MPA used as a study tour site, residents advocate for MPAs
- Expansion strategies considered or initiated

The MPA rating system will become fully functional after another year of testing and as the MPA database fills in to cover all MPAs in the country. It is anticipated that the rating system will provide much needed standardization to the evaluation of MPA status and in selecting MPAs for technical assistance or giving awards for good management.

Integrated coastal management

The Philippines has been active in promoting coastal resource management or CRM for almost 20 years. It is now apparent that well managed MPAs almost always lie within the confines of integrated coastal management (ICM) or CRM programs that cover wider areas and jurisdictions than MPAs (Figure 3). The benefits and process of CRM in the Philippines is covered elsewhere but in all cases, MPAs play an important role as one of the "CRM best practices" in the country (Courtney and White 2000; Courtney *et al.* 2002). And, it is increasingly clear, that the long term success of MPAs depends at least partially on the expansion and effectiveness of ICM and CRM programs nationwide.

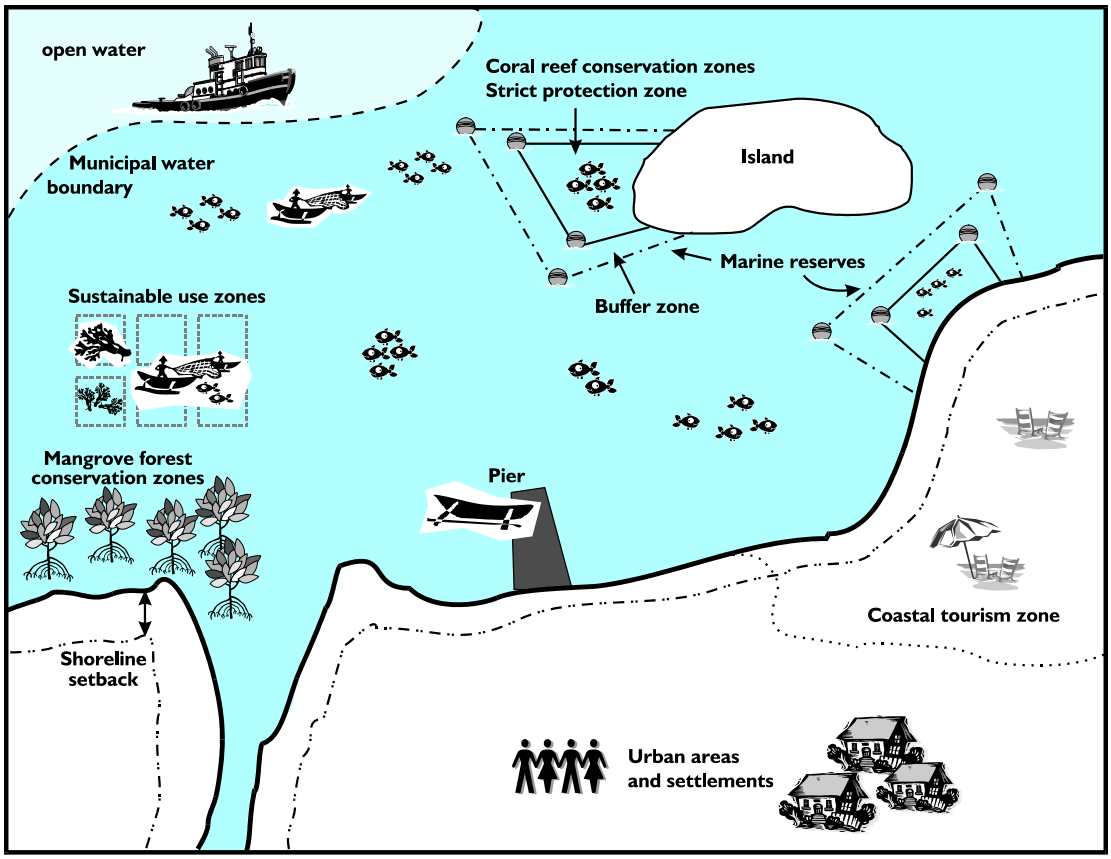

Figure 3. Typical CRM zone plan for municipal waters

Conclusions

The conditions for improved management of MPAs include at least the following: Presence of a well-articulated process that includes community participation and ownership in collaboration with municipal governments; the role of multiple stakeholders, government and donor agencies in planning and management; the creative use of financial mechanisms to sustain self-supporting MPAs; and the need for more integrated coastal management to support MPA networks through broad area planning.

Economic incentives that are and can work include: Use of sustainable tourism to generate revenues through user fees, boat accreditation schemes, entry permits, community trust funds, compensation payments based on locally generated revenues and some carefully selected other forms of alternative livelihoods for coastal resource dependent communities.

Combining community participation, environmental education, economic incentives and legal mandates appropriately for a particular MPA with long-term institutional support from government, non-government groups, academe or other institutions offers good potential for success in MPA establishment and management. The following quote may help us think about how to improve MPAs: "The real world of interlocked economic and ecological systems will not change; the policies and institutions must." (Our Common Future 1987)

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