

MPAs are unlikely to be sustainable unless they make economic sense and generate benefits that are at least equal to the costs they incur. It is important that MPA managers have a basic understanding of the economic value of the sites for which they are responsible. This sheet introduces the concept and tools of economic valuation and demonstrates the use of this concept in MPA management.

Marine ecosystems have many benefits that provide an important economic justification for establishing MPAs, but these are often not fully understood by decision makers and stakeholders. For example, it has been estimated that coral reefs provide nearly US\$30 billion annually in net benefits in goods and services globally. Coral reef fisheries alone may provide benefits estimated at US\$5-7 billion a year. Being able to demonstrate to local communities, donors, governments and other stakeholders that an MPA has significant economic benefit from tourism or the fisheries it supports can greatly facilitate management, particularly fundraising and enforcement.

PURPOSE OF ECONOMIC VALUATIONS

An economic analysis and valuation of an MPA is useful to:

- Demonstrate and quantify its economic value in terms of raw materials, protection of natural and human systems, and maintenance of options for future economic production and growth, as well as the costs associated with the loss of these benefits through resource degradation;
- Integrating business and economic concerns into conservation planning and practice;
- Identifying and developing potential financing mechanisms and economic incentives for management;
- Obtaining funding from insurance companies for mitigation measures if resources are damaged through an accident, such as an oil spill or ship wreck; for example, the Egyptian Government has received considerable sums of money to compensate for ship-related damage to their reefs on several occasions.
- Strengthening EIAs;
- Developing mechanisms to ensure that costs and benefits of an MPA are more equally shared, e.g. income generating activities for local communities who have insufficiently benefited from the MPA, disincentives for damaging activities through taxes or bonds, and funding from groups who benefit from an MPA at little or no cost, such as user fees for tourists and visitors.

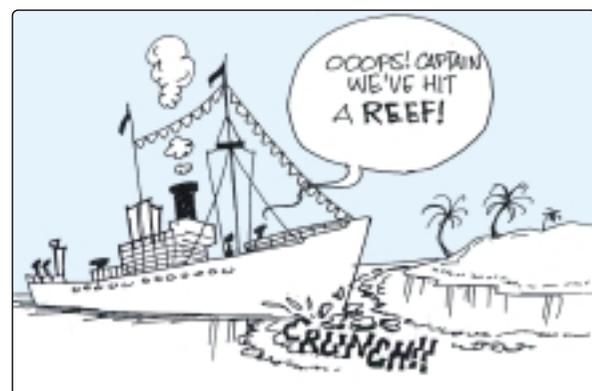
Quantifying the economic value of an MPA should not be seen as an end in itself. An economic valuation will always be an estimate as some benefits and costs cannot be measured accurately. For example, it is difficult to measure the full cost of species and habitat loss, which is one of the measures that should be factored in, although techniques are now being developed to address this. Some values are not necessarily related to real monetary transactions, and so non-economists often have difficulty in accepting them. However, if measured appropriately they are “real” values, although it is vitally important to state

the assumptions and suppositions that have been used in their determination. Furthermore, it must be remembered that some quantified economic values may not be relevant to all stakeholders, as people have different perceptions of the value of natural resources and these perceptions may vary over time.

CARRYING OUT AN ECONOMIC ANALYSIS

This involves the following steps:

1. Identify the total economic value (TEV) of the MPA which is the sum of:
 - Direct values – raw materials, services and products that can be consumed, traded or enjoyed on site, e.g. fish, building materials;
 - Indirect values – maintenance of natural and human systems through for example, coastal protection, storm control, and for provision of habitat for economically important species caught off-site;
 - Option values – the value of maintaining the area to allow for potential, but currently unknown, future uses e.g. tourism, pharmaceutical uses, industrial activities;
 - Non-use existence values – the intrinsic value of the area accruing to people who may not use the site, based on existence, bequest and altruistic motives, and sometimes including components of social, including cultural, scientific, and heritage values.
2. Identify the total economic cost incurred in establishing and running the MPA, which is the sum of:
 - Management costs – direct expenditures on, for example, equipment, infrastructure, human resources;
 - Opportunity costs - the value of the uses of the area that are foregone or precluded because it has been protected;
 - Indirect costs – other indirect costs of actions, e.g. tourism related impacts.



“Who pays for the damage to the reef...and how much?”

3. Quantify the values and costs listed in (1) and (2) above, to obtain the economic value of the MPA; techniques for this can be found in the sources and references below.
4. Identify the distribution of benefits and costs between different stakeholder groups. This shows who gains or loses from an MPA and thus what economic incentives or other benefit mechanisms are needed; for example, tourism operators may benefit more from an MPA than fishing communities if the latter can no longer fish in the area.

KEY POINTS FOR THE MPA

- Carry out an economic valuation if this has not been done, but obtain advice from a professional environmental economist with experience in carrying out such tasks; the full range of costs and benefits should be included and ways explored of enhancing benefits, capturing values and minimizing costs.
- MPA personnel should work closely with the economist during the valuation, providing accurate information and ensuring that the aims of the study are achieved.
- Economic valuations should be repeated periodically, to monitor changes.
- The results of economic valuations should be widely disseminated, especially to decision makers to strengthen their support for the MPA, and the recommendations should be followed up.

Sources of further information

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IUCN/WCPA Sustainable Financing for Protected Areas: www.iucn.org/themes/wcpa/theme/finance/finance.html

CASE STUDY

An economic valuation of an MPA in Kenya

Kisite Marine National Park and Mpunguti Marine National Reserve, administered by the Kenya Wildlife Service (KWS), are together an important tourist destination, and also contribute to fisheries. Exploitation is banned in the Marine Park while fishing using traditional methods is permitted in the Marine Reserve. An economic valuation was carried out, with the support of IUCN and with funding from BMZ-the German Federal Ministry for Economic Cooperation and Development, to help identify how the financial and management problems faced by the MPA could be addressed.

It was found that, in 1999, the Marine Park and Reserve was generating income in excess of US\$1.6 million a year in net revenues from tourism, and a further US\$39,000 from fisheries. These returns are far in excess of the estimated management and opportunity costs associated with the park of some US\$190,000 a year. If other economic benefits of the MPA, such as its contribution to shoreline protection, marine productivity, wildlife habitat and nursery, cultural and aesthetic values, had also been factored in, its economic benefits would have been even greater.

The valuation was also able to demonstrate that some groups (primarily the commercial tourism operators) receive the main economic benefits from the MPA, but others (the local fishing communities who had reduced fishing opportunities, and the local KWS office which had to manage the area although the entrance fee proceeds are managed centrally by KWS) bear the costs. Once this had been shown, activities were initiated to rectify the imbalance, focusing particularly on increasing benefits to local communities. These included constructing a mangrove boardwalk that is managed by the village womens' group (see sheet J8), and helping local boat operators to improve their services to tourists (e.g. preparation of an information leaflet and code of conduct, and assistance with obtaining appropriate insurance). These activities have led to a marked increase in support for the MPA by the local communities.

Emerton, L. & Tessema, Y. 2001. *Economic Constraints to the Management of Marine Protected Areas: the case of Kisite Marine National Park and Mpunguti Marine National Reserve, Kenya*. IUCN Eastern Africa Programme, Nairobi, Kenya. 26pp.