ECONOMIC VALUATION OF MARINE ECOSYSTEM SERVICES

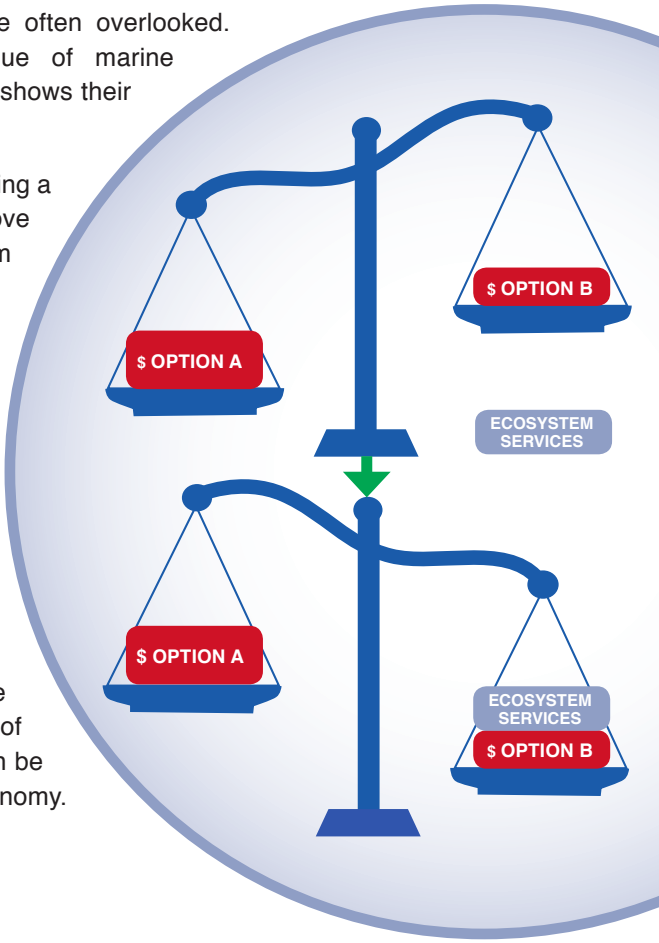
What are ecosystem services?

Marine ecosystems in the Pacific provide important benefits to society including to the livelihoods and food of millions of people in the Pacific and hundreds of millions of people around the world. Limited land resources and the dispersed and isolated nature of communities make inhabitants of Pacific island countries uniquely dependent upon the benefits of marine ecosystems. These benefits (called ecosystem services) include a broad range of connections between the environment and human well-being including provisioning services such as food and building materials; regulating services such as carbon sequestration and protection from erosion and flooding; cultural services like recreation, cultural identity, and aesthetic appreciation; and supporting services like nutrient cycling and photosynthesis[1].

The case for economic valuation of marine ecosystem services in the Pacific

Quantifying the benefits of marine ecosystems in the Pacific helps to highlight and support wise use and sustainable management decisions. Ecosystem services are not usually visible in business transactions or national economic accounts in Pacific Island countries. Despite the fact that more than 95% of Pacific Island territory is ocean, the human benefits from marine and coastal ecosystems are often overlooked. Determining the economic value of marine ecosystem services to Pacific Islanders shows their importance to society and decision-makers.

Every time we make a decision that affects nature, we are implicitly putting a value on the environment. For example, if we choose to clear a mangrove in order to build a golf course, a trade-off is made between the ecosystem services provided by the mangrove and the new development. There is a problem, however, if the decision maker is not fully aware of the long-term benefits provided by the mangrove. It is then possible that such decisions make society worse off instead of better off. Economic valuation of ecosystem services provides information to help decision-makers weigh up what will be lost or gained by making a decision. Having access to reliable information on the values of marine ecosystem services in Pacific Island nations facilitates more objective, transparent and informed decision-making.



Economic valuation is not the only way to communicate the importance of ecosystem services. Alternative approaches, such as bio-physical indicators (e.g. tonnes of fish catch, numbers of species), can also be used. The advantage of using economic valuation is that the values of ecosystem services are measured in a common unit, money, which can be directly compared with the values of other goods and services in the economy.

1 Definitions from the Millennium Ecosystem Assessment (2005).

How can economic values for ecosystem services be used in decision making in the Pacific?

Valuation of marine resources can serve a variety of policy and resource management applications. Information on the economic value of ecosystem services can be used to:

- Raise **awareness** of the value of the marine environment;
- Reveal the **distribution** of costs and benefits of resource uses among winners and losers;
- Design the most effective tools for marine environmental **management**;
- Design appropriate **fees** for the use of marine ecosystem services;
- Calculate potential **returns on investment** for projects that impact the marine environment;
- Compare c**osts and benefits** of different uses of the marine and coastal environment;
- Calculate values for marine ecosystem services for input into **natural capital accounting**; and
- Determine **compensation** for damages to the marine environment.

FURTHER READING: www.macbio-pacific.info/marine-ecosystem-service-valuation/

macbio-pacific.info

MACBIO
Marine and Coastal Biodiversity Management in Pacific Island Countries

SPREP Secretariat of the Pacific Regional Environment Programme

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On behalf of: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety of the Federal Republic of Germany

This factsheet was prepared by the Marine and Coastal Biodiversity Management in Pacific Island Counties (MACBIO) project, which is assisting Fiji, Kiribati, Solomon Islands, Tonga and Vanuatu, in valuing, planning and managing their marine ecosystems. MACBIO is funded by the German Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety (BMUB) through the International Climate Initiative (IKI). It is being implemented by the German Agency for International Cooperation (GIZ), in close collaboration with the Secretariat of the Pacific Regional Environment Programme (SPREP) and with technical support from the International Union for Conservation of Nature (IUCN). The three organization are the inherent copyright owners of this publication. The views expressed here do not necessarily reflect those of the organizations or donor.