

MARINE PROTECTED AREAS

Information Sheet 2

INTRODUCTION TO MARINE PROTECTED AREAS

1. WHAT IS A MARINE PROTECTED AREA (MPA)?

It is 'an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, and managed through legal or other effective means'¹(Bohnsack, 1999).

An MPA may include among others (i) Coral Reefs; (ii) Seagrass beds; (iii) Lagoons; (iv) Mudflats; (v) Saltmarshes; (vi) Mangroves; (vii) Shipwrecks; (viii) Underwater areas on the coast; and (ix) Seabeds in deep water.

Worldwide, MPAs are very common however in Samoa, there are three known MPAs. These are Palolo Deep Marine Reserve, Aleipata MPA and Safata MPA.

The marine environment plays a number of important key roles which contribute to sustaining the cycle of life on earth.

(i) Ecological roles

- Sustain ecosystems/habitats for numerous species of fish, molluscs, crustaceans, seaweeds, etc;
- Provide effective protection for beaches and the coastline from the constant thrashing of ocean waves and strong currents (e.g. mangroves and coral reefs);

(ii) Social and economic roles

- Provide most of the seafood protein for many people;
- Provide income and export earnings;
- Provide attraction for tourists;
- Serve as a source of raw materials for:
 - (i) medicine (e.g. anti-leukaemia drugs have been derived from sea sponges, and many more useful agents from other marine flora and fauna. Coral is also used for bone transplant);
 - (ii) handicrafts (e.g. shells and black corals for necklaces, etc.);
 - (iii) construction (e.g. limestone source for cement manufacture and building blocks and sand);

Unfortunately, the marine environment is the target for many human activities and therefore is under increasing pressure from human-induced and natural factors such as uncontrolled and over-fishing practices, use of destructive fishing methods, marine pollution, habitat destruction and cyclones.

These activities have resulted in the overall loss of marine biodiversity, decline in marine resources and/or species stocks which in some cases have led to extinction of some species while others have reached the level of threat of becoming extinct.

3. THE NEED FOR MARINE PROTECTED AREAS

Establishing MPAs is not the solution to all problems experienced in the marine environment however it is widely recognized as a practicable management tool for the restoration and lasting protection of marine biodiversity.

MPAs serve a number of important functions which include:

3.1. Conserving/protecting biodiversity and ecosystems

Many marine fauna species spend specific stages of their life cycle in different habitats. These habitats are biodiversity hotspots for these species as they continue life.

Setting aside an area that contains the biodiversity of plants, animals and habitats offers protection to the immense variety of life that makes these areas special. Furthermore, establishing a network of protected areas ensures the maintenance of ecosystems which can provide new species for recruiting surrounding areas.

3.2. Helping maintain genetic diversity

Having a breeding population with a diverse genetic pool ensures species survival and adaptability with the environment. Marine protected areas help conserve genetic diversity, especially in heavily exploited populations by providing refuges where individuals can grow through maturity without being affected by harvesting and other human impacts. The chances of maintaining genetic diversity can be much greater in these areas than in open access fishing grounds given that fishing can indiscriminately remove a population of species.

3.3. Helping protect/restore rare/threatened species

MPAs help protect the rare or threatened species as well as its habitats as it needs secure areas to forage and breed if they are to survive in the long term. They provide ideal protection if the habitat is important to some stage of the species' life cycle.

3.4. Allowing for Research and Education opportunities

MPAs can contribute to ones understanding of the marine environment by means of researches and education. They:

¹ Bohnsack J. 1999. *MPA News*. Volume 1. No.2.

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Information Sheet 2

INTRODUCTION TO MARINE PROTECTED AREAS

- (i) allow for a scientist to deduce and quantify the interrelated elements/systems of the marine environment;
- (ii) serve as a control site for scientific experiments, thus allowing for the timely assessment and comparison of the status of the marine environment. It also helps broaden our understanding of marine ecosystems and increase our capacity to ensure its protection.

3.5. Contributing to ecosystem-based management of fisheries

In principle, a MPA provides a form of insurance for fisheries and may increase fisheries productivity. For some species, it could provide a refuge that can ensure some populations survive in the event of stock collapse by allowing individuals to mature fully and reproduce more effectively.

A MPA can protect breeding and recruitment areas by providing a source for larvae propagation and a sink for juvenile recruits, and hence insurance against recruitment failure that can result from overfishing and other threats. It may also help to preserve the natural composition of ecosystems and population structures.

3.6. Providing support for the tourism industry

The diversity and abundance of marine life within a MPA is an attraction for tourists, which then create business opportunities and in return sustain coastal communities. At the same time, a MPA controls the impacts of tourism on the marine environment and ensures equitable access rights. This ensures that the benefits of the area continue to be available to all, including the tourism industry. The fact that such an area is highly protected can be a marketing edge in attracting visitors to that area.

3.7. Helping conserve cultural heritage

A MPA can provide a broad level of protection for the context within which important historical sites and structures occur. They can compliment the site-specific protection offered under national laws specifically designed to protect cultural heritage.

4. WHO CAN MANAGE A MPA?

Depending on where it is located, a MPA may be managed by the national government, a combination of government agencies and the local communities. There are two main types of approaches to MPA protection.

- (i) Multiple-use Zones: Zones which allow a variety of human activities that are managed comprehensively to support compatible uses while at the same time protecting key habitats and resources. Protection

may apply only to certain uses or resources and may be uniform across the MPA or allocated spatially and/or temporally through marine zoning to reduce user conflicts and minimize adverse impacts;

- (ii) No-take Zones: Zones within larger multiple use zones that restrict all extraction or destruction of natural or cultural resources within the MPA boundaries. Some may also prohibit access and/or other activities that may adversely impact resources, processes and qualities, or the ecological or cultural functions they serve.

The kinds of activities that are allowed or excluded in a MPA depend on the reasons for setting up that area. Irrespective of that, all marine protected areas share at least one common objective – to protect marine biodiversity.