

**Appropriate research, on both biological and socio-economic issues, is essential for long-term effective management of an MPA, and many MPAs in the region have the promotion of science or research as one of their objectives. This sheet provides guidance on how an MPA can develop good relationships with researchers, build up their own research programmes, and benefit in general from research activities taking place within their boundaries.**

The natural sciences are vital to understanding ecosystem function and change, and the social sciences are essential to identifying the sources of human-induced problems. Successful MPAs typically involve collaboration between managers, staff and scientists at all stages: formulating management policy and interventions; designing the MPA; identifying sources of human-induced impacts and conflicts; and evaluating and adapting the approaches used and their impact.

### RESEARCH PARTNERSHIPS

It is rare for a management agency to be able to fund all the necessary studies, and outside assistance will be required. This may come from a range of sources: local universities and research institutes, overseas researchers, students working on projects or further degrees, or consultants and volunteers. The MPA or its management authority may need to contract out research to external agencies. Developing a good partnership with academic institutions and universities is vitally important. Depending upon its location and scientific interest, an MPA may well be a potentially attractive 'field laboratory' for scientific or other research. Having research teams, including PhD students, in the MPA can put it on the scientific map, bring publicity, expose MPA staff to wider experience and knowledge and bring in modest amounts of income to support running costs.

Once researchers start working in an area, they may opt to continue to do so, thus establishing a long-term relationship that can be useful for monitoring and studies of long duration. It can result in additional useful research being carried out for the MPA at no cost. Scientists are also often willing to help train MPA staff in particular research or monitoring techniques. A memorandum of understanding (MOU) or formal agreement with an academic institution is a good way to formalise links and ensure that each party understands the expectations and potential of the other.

### RESEARCH WITHIN THE MPA

Some MPA management bodies are large enough to have a designated Research or Science Officer to oversee, coordinate and prioritise research activities. In other cases, scientific Task Forces or working groups can be set up, with staff members and perhaps individuals from local institutions. Some MPAs (for example Aldabra Special Reserve in Seychelles) have a formal scientific Advisory Board that meets on a regular basis to review research underway in or needed by the MPA and to set research priorities.

It may be appropriate to develop field station facilities with a national university or research station, or to develop collaborative arrangements with researchers from further afield. A correlation has been found between the presence of at least basic research facilities and the amount of research done in a protected area. The MPA can often charge a fee to cover the use of basic facilities, but in exchange should also be willing to assist and facilitate the research work, for example helping to obtain the necessary visas and research permits, assisting with transport and accommodation, and providing logistical support where appropriate.

The MPA should ensure that it is involved in research activities and should maintain a record of studies undertaken, and ensure that copies of all research reports and publications are provided by the scientists. The value of any research undertaken should be assessed periodically to ensure that it is contributing to the management of the MPA. This will help to avoid duplication of studies, will ensure that new research builds on the results of previous research, and will help to ensure that the results of research are fed into the MPA decision-making, planning and management process. The managers will need to understand the limitations of the research results and this can be achieved through regular discussions and feedback sessions with the scientists.



M. Samoilys

Village monitoring team in Tanga, Tanzania, preparing to conduct coral monitoring on shallow reefs.

## KEY POINTS FOR THE MPA

- ❑ Establish partnerships with appropriate research institutions, with an MOU or agreement, concerning areas of collaboration such as joint authorship of publications, ownership of specimens, and develop a research plan that lays out the roles of the MPA personnel and the external agencies.
- ❑ If funding is available, appoint a Research or Science Officer to the MPA personnel.
- ❑ Prepare a research strategy or plan, identifying key needs and priorities that can then be made available to potential researchers or students who ask to work in the MPA.
- ❑ Develop a code of conduct for researchers so that they fully understand how they are expected to behave in an MPA and what the regulations are.
- ❑ Ensure that visiting researchers and students work closely with the MPA staff; if possible assign certain staff members to the projects or research studies so that they can learn from the work being carried out.
- ❑ Ensure that regular feedback on research underway in the MPA is provided to staff and other interested stakeholders, e.g. through informal talks or seminars.
- ❑ Compile and keep up-to-date a bibliography of research work carried out in the MPA, preferably stored electronically and perhaps made available on the MPA's website (if it has one) and establish a library to host information relevant to the MPA.
- ❑ To the extent possible, provide basic research facilities, such as a field laboratory, information about the area (a standard site description is useful), simple accommodation, assistance with transportation on site, and guides, translators, and other assistants. Establish clear charge rates for the use of the facilities where appropriate.

### Sources of further information

GESAMP (IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection). 1996. *The contributions of science to coastal zone management*. Reports and Studies GESAMP 61, FAO, Rome, Italy. 66pp.

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## CASE STUDY

### Inhaca Marine Biological Station and Ilhas Inhaca e dos Portugueses Faunal Reserve

Few MPAs in the WIO have as close a relationship with research as the Ilhas Inhaca e dos Portugueses Faunal Reserve. It was established in 1965 and has a long history of research through the biological station that was set up on the island in 1951. This protected area, comprising several separate components (mangrove, coral reef, coastal forest), is managed by the Faculty of Sciences of the Universidade Eduardo Mondlane, through the Marine Biological Station. Diving is allowed in the marine part of the Reserve but no fishing or aquatic sports. The Director of the Biological Station is the manager of the protected area, the station staff are responsible for day-to-day management of the Reserve, and the University employs 12 guards. Management activities include patrolling the turtle nesting beaches (Loggerheads and Leatherbacks), monitoring the nests and erasing the tracks made by the nesting females.

The station comprises laboratories, a museum for visitors and scientists and accommodation, and receives numerous national and international students who undertake field courses there, as well as many scientists. Research activities within the coral reef component of the Reserve have increased dramatically since 2000, producing much relevant information for management, and including the establishment of two permanent coral reef monitoring stations.

The advantage of such close links with the academic community is that it results in much more consistent research. The area includes some of the best studied reefs in Mozambique with records going back to 1935, and some of the most comprehensive taxonomic studies have been carried out here. Much of this work will be used in development of the management plan that is to be undertaken shortly. However, it can mean that the protected areas is overlooked in government initiatives to support MPAs, which in recent years has tended to happen at Inhaca, although the government will now be assisting with the preparation of a management plan. The research staff also lack experience in some aspects of management, notably in terms of participatory approaches, and understanding of some of the key socio-economic issues such as the need to provide alternative livelihoods for those who can no longer use the Reserve area. This led to considerable conflict with local people which is now being addressed, as scientists and managers (in this case the government protected area agency) increasingly understand the importance of working together.