

How to measure effectiveness in marine protected areas

“How to” workshop summary

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Summary

Creating an effective marine protected area (MPA) begins with incorporating local knowledge, particularly from indigenous communities, fishers and coastal residents, who have a deep understanding of the ecosystem. These stakeholders possess valuable insights into species migration patterns, breeding grounds and seasonal variations that scientific surveys alone might miss. Engaging with local communities through participatory mapping and consultations ensures that traditional ecological knowledge is integrated with scientific data, resulting in an MPA that reflects both conservation priorities and sustainable resource use.

- Data-driven decision-making is crucial for the success of an MPA. By utilising satellite imagery, biodiversity assessments and oceanographic data, policymakers can identify critical habitats, such as coral reefs, seagrass meadows and fish-spawning areas.
- Advanced technologies like acoustic monitoring and tagging programmes help track marine-



- species movements, allowing for the creation of dynamic protection zones that adapt to environmental changes.
- Combining scientific research with real-time monitoring improves the effectiveness of the MPA and ensures that it addresses threats such as overfishing, habitat destruction and climate-change impacts.

- Successful MPAs also rely on adaptive management, where continuous data collection and community feedback shape policies over time. Establishing local governance structures, such as co-management boards with representatives from government agencies, conservation groups and local fishers, fosters a sense of ownership and compliance with regulations.
- Regular assessments using ecological surveys and socioeconomic-impact studies allow for necessary adjustments, ensuring that the MPA remains effective in protecting biodiversity while supporting local livelihoods.
- Leverage the input of local communities and create transparent data
- Data collection and mapping is critical; however there are challenges in organising the data
- Without data there is a risk of lack of enforcement
- Determining when it is best to act on the data once received is a critical step
- What is being measured and who is it being measured for?
- National versus local objectives are often hard to define

When local knowledge and scientific data work hand in hand, MPAs become more resilient, benefiting both marine ecosystems and the communities that depend on them.

Key takeaways:

- There is no one-size-fits-all solution
- Adoption of solutions is dependent on the MPA— location, government, local communities and management
- For the best chances of success, community and stakeholder collaboration is important in the earlystage development of the MPA
- Local communities should be heard at the beginning of the MPA design and engaged throughout. This will save time and cost
- Building trust between all parties is important

