2. Strategic Adaptive Management of MPAs: Linking science with management for effective conservation

Conveners: Jennifer O’Leary, Arthur Tuda, Amin Abdallah, Clay Jones, and Allen Cedras
Email: jkoleary@calpoly.edu

Description:

If you are a researcher working in marine protected areas of WIO or a manager focused on marine systems, this workshop will help you boost your conservation achievements by contributing to a growing adaptive management network in Western Indian Ocean that links science to management. Our objective is to discuss how adaptive management frameworks can help improve management of marine systems, demonstrate progress and lessons learned through case studies in two nations, and have 3 targeted discussions on how scientists and MPA managers can network regionally for effective management and conservation. We will focus on our case studies in implementing adaptive management in nationally-governed marine protected areas (MPAs), but the approach applies to any marine management including fisheries or locally managed MPAs.

The rationale for this session lies in the fact that there remains an ongoing disconnect between scientific knowledge and conservation action. Despite large amounts of research on MPAs and MPA networks, existing MPAs sometimes fall short in effectiveness and thus fail to deliver promised ecological and societal benefits. MPAs must be actively assessed and managed to maintain benefits despite increasing external threats (including climate change). In the Western Indian Ocean, there are more than 100 MPAs and increasing numbers of community-based locally managed marine areas (LMMAs) that were established to create intact ecological systems in a region with intense small-scale fishing and limited fisheries management capacity. However, management of these MPAs is not always focused on social and ecological outcomes. Thus, increasing science-based management capacity is a regional priority. Globally, studies also point to significant shortfalls in MPA management effectiveness.

Effective management occurs when managers have flexibility to respond rapidly to threats and are able to use data strategically to guide management decision-making. Published conservation strategies, and even local monitoring data, when they exist, often fail to lead to management action. Managers often lack access to scientific information or do not have the capacity to interpret it. Even when research outputs are translated for management, little management progress has been made because there is often no framework that helps managers incorporate data into decision-making. Numerous researchers have suggested adaptive management frameworks as a solution. Through adaptive management, measurable objectives are established based on agency or societal objectives, targets are set using scientific data, and actions are based on the status of objectives. Managers evaluate previous management actions in a system of continual learning. Management actions are thus experiments that can improve knowledge of social-ecological dynamics. In collaborative implementation of adaptive management frameworks, managers and stakeholders think through what information is needed to assess management progress, and researchers learn about management needs. Adaptive management thus helps develop problem solving approaches, resulting in innovative conservation solutions and new levels of management action without increasing costs.

In this session, we bring together scientists and managers to determine best practices in building capacity to effectively use the adaptive management framework and scientific
information to guide management decision-making and to evaluate management effectiveness in coral reef, seagrass, and mangrove ecosystems.