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POLICY BRIEF

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# Success factors for pairing conservation with enhanced forest and fish-based livelihoods

## Lessons from Tanzania

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In settings in which people rely directly on either forest or marine resources, protecting both the natural resources and livelihoods is challenging. Findings from Tanzania suggest that, where budgets are limited, key factors for a successful combination of livelihood and conservation policies include the strategic location of livelihood projects that target those most dependent on the protected resource rather than those most likely to cooperate with access restrictions. Further, differentiated resource rights for those living inside and outside the protected area can encourage local enforcement.

During the last 30 years, the number of protected areas established worldwide to protect natural systems has grown dramatically. Coinciding with that expansion, many government agencies and NGOs advocate for combinations of livelihood policies and conservation policies that address rural poverty and welfare while conserving the particular resource. This trend toward pairing conservation and development policies occurs in Tanzania, as elsewhere, for both forests, through participatory forest management, and fisheries, through marine protected areas, with projects and resource access for local communities. Yet finding win-win solutions has proven elusive. Here we discuss commonalities and differences between conservation in forest and marine settings in which people rely directly on those resources.

### Key Points

- **Equity:** Protected areas typically impose costs on most nearby villagers but efforts to compensate them for lost access to resources, such as providing bee hives or fish ponds, benefit only a few. This situation can increase conflict and reduce cooperation. In contrast, all households in REDD project villages receive cash payments, implying more equitable benefit sharing.
- **Differentiated resource rights:** Encouraging local enforcement can enhance and supplement official enforcement, but this strategy may work best when locals have differential rights from "outsiders".
- **Right location:** The location of livelihood projects and patrols can be used with enforcement locations to manipulate spatial patterns of degradation and protection, which increases returns to limited funds.

*Fish pond introduced as alternative income generating project.*

Following the 1998 National Forest Policy and the Forest Act of 2002, Participatory Forest Management (PFM) has been introduced to manage Tanzania's forests. This approach allows local communities, under specific conditions, to benefit legally from nearby forests, but at the same time re-imposes more restrictive extraction rules in forests that are particularly important for ecosystem provisioning and biodiversity protection. Depending on the particular designation of a forest, villagers' access to the PFM forest may be curtailed, either in the short run—to let the forest regenerate before villagers resume managed and restricted resource collection in community-based forest management (CBFM)—or permanently, in the case of protected preservation government forests in joint forest management (JFM). In the short term, and for some forests, villagers lose access to forest resources to which they have traditionally had access, albeit often illegally. Villagers may be better off in the long run, provided that they do not permanently lose access to the forests. In the short run, however, most villagers living near PFM forests are likely to be worse off in terms of access to forest resources.

Marine Protected Areas (MPAs) are increasingly popular policy tools that, especially when applied in poor countries, typically have a central goal of protecting livelihoods in addition to protecting marine biodiversity and particular sites for recreation. In Tanzania, many MPAs permit limited fishing, in contrast with marine reserves and no-take zones. MPAs often seek to address their negative impact on local households by providing some benefits, both to induce compliance with the restrictions and to defray the burdens the park imposes on households. Still, the MPA restrictions on fish harvest can be particularly costly for small-scale fisherfolk who have few alternative livelihood options, particularly in the early stages of MPA implementation when the combination of degraded fish stocks and new harvest restrictions create difficulties for households near MPAs.

Though managing terrestrial and marine protected areas clearly present different challenges – not least that fish move and trees don't – commonalities and joint lessons abound. In both settings, poor people rely on resources and managers face the goal of conserving those resources without burdening local communities. Here we consider a number of areas where similar issues confront the management of both forest and marine protected areas.

## Equity is important for success

Livelihood projects are often introduced in or near a new protected area, ostensibly as compensation for local villagers' lost or reduced access to forest or fish resources located within a newly established or enforced protected area. Yet we find that these livelihood projects typically benefit only a few people, whereas the access restrictions tend to harm most of the population. This situation raises questions about such inequalities causing conflict, and prompts a search for options to ensure that benefits reach the most harmed community members. We find that REDD (Reduced Emissions from Deforestation and forest Degradation) pilot schemes introduced in Tanzania by the NGO TFCG (Tanzania Forest Conservation Group), such as in Kilosa, provide equal payments to each REDD village household regardless of the cost imposed on the household by the access restriction. All "insider" villagers therefore get some reparations for reduced access to forests. In protected areas with limited budgets, such community-wide compensation may only be possible with "cash for carbon." However, managers will watch to learn if this even distribution of benefits increases the likelihood of success of the initiative, reduces conflict, and provides a possible path toward successful implementation of a protected area with minimal costs born locally.

## Initiatives to protect both resources and livelihoods remain elusive

*Beehive introduced as alternative income generating project.*

In low-income countries, regulations or NGOs typically require protected areas, whether marine or forest, to protect both livelihoods and ecosystem services. Livelihood activities that directly link to protection of the resource are most likely to create incentives for protecting ecosystem services while providing income to local villagers. This dual goal may be easier for forest than fisheries protection. For example, bee hives provide incentives to maintain/ improve forest quality through a non-extractive income-generating opportunity that relies on forest protection. In contrast, MPA livelihood projects often have little connection to fisher livelihoods. In MPA communities, we found that fish ponds were often adopted by those least dependent on fishing. Similarly, those MPA villages near forest and farther from ocean fishing, who therefore fish less, faced the largest incentives to undertake bee husbandry. A question therefore remains as to how incentives for conservation can be generated by livelihood projects, particularly for MPAs.

## "Insiders" versus "outsiders"

Insiders — local community dwellers — and outsiders — people who temporarily locate near forests or in fisheries to extract — respond differently to social pressure to conform to rules governing resource use. Outsiders extract resources in protected areas but do not benefit from projects, nor are they subject to social pressure; examples include timber and charcoal producers who come from outside the locality and migrant fishers from outside the MPA. Outsiders also have no long-run ties to the forest or fishery, while insiders may have relied on nearby resources for many years and may have traditionally cooperated with each other to manage the forest. Insiders are often negatively affected by a protected area, particularly in the early years of implementation, but can access projects and respond to community pressures. This two-group structure suggests that enforcement of regulations may require different approaches for insiders and outsiders (and different user groups), but national regulations may not permit such distinctions. Whether it is fair to privilege insiders over outsiders is not a simple question to address. If people outside the MPA have historically used the resource, they may perceive it as unfair to be excluded from the resource simply due to the location of their village. But Ostrom's first rule for managing common pool resources under common property regimes is the need for clearly defined boundaries and users.

*EfD researchers discuss bee keeping with women villagers.*

## Local enforcement by villagers

Enforcement by insider villagers who are part of the MPA or PFM initiative can supplement official enforcement of extraction restrictions in protected areas, particularly against outsider extraction. For local people to take on this responsibility, however, they must have some legal standing and appropriate incentives. For example, legalising the collection of some forest products or the use of some fishing

areas by insiders can empower villagers to protect against outsiders. Differential punishments for insiders and outsiders could also help. In forest settings, managers indicate that they rarely enforce against extraction for home use but current regulations do not permit such differential treatment. Insiders report that they do not help with enforcement against outsider charcoal extractors despite the damage caused to forests because they are also engaged in illegal extraction, albeit more minor. In contrast, in Tanzania's MPAs, local communities have exclusive access to some fishing grounds and react by reporting the presence of outsiders in the MPA. Still, not all Tanzanian MPAs have been able to establish a workable insider identification system, which limits villagers' willingness to participate in local enforcement.

## Hypothecating revenues

Park revenues often go to a central fund rather than remaining in the revenue-generating MPA/forest community. The lack of connection between revenue generation and park budgets limits incentives to local villagers and local resource managers to undertake activities and behaviours that would increase revenues. Some of Tanzania's MPAs have developed mechanisms to increase the direct link between conservation effort and reward but such policies have not arisen in forest areas. The central fund does, however, create a funding mechanism for protecting marine and forest areas that are important for ecosystem services that, due to location or other characteristics, have few ways of raising funds directly, such as through tourism.

## Location matters

In Tanzania, marine and forest protected area managers use both enforcement and livelihood projects in their efforts to conserve resources. These managers typically have an additional tool that goes underutilized: the choice of the location of livelihood projects and of the spatial patterns of patrols. Managers can site their guards and the projects in patterns that influence the extraction/conservation behaviour of people in ways that contribute to the area's ability to provide ecosystem services. For example, the right location for bee hives in a protected forest can encourage local enforcement against charcoal producers and contribute to the pattern of forest health. Similarly, strategic locations for patrols would locate patrols where they deter the most extraction, which may be different locations from those facing the most extraction or containing the most sensitive species. The strategic location of livelihood projects and patrols can increase the impact of limited funds on conservation outcomes.


*Little of Mafia Island Marine Park's increasing tourism revenue directly benefits the MPA.*

## Policy implications and recommendations

In a world of limited budgets, marine and terrestrial protected areas rarely receive sufficient funds to achieve the double objective of protecting livelihoods and protecting resources. Our findings suggest that policy makers and park managers need to be strategic and pragmatic rather than dogmatic; to link "carrots" and "sticks"; to differentiate between insiders and outsiders; and to consider location choices for projects and enforcement. In addition, managers of forests and of marine settings face similar issues and can learn from each other's successes and failures to the betterment of management of both types of resources and of the local communities that rely on those resources.

For example, those households least affected by lost access to resources after the introduction of a protected area are most likely to cooperate with park regulations. Indeed, in Tanzania's Mnazi Bay Ruvuma Estuary Marine Park (MBREMP), such households have been rewarded with livelihood projects for this positive approach. However, such an approach only worsens the disparities between the most fishing-dependent households, who find cooperation most costly, and the least dependent. Policy makers therefore need to think carefully about how to allocate scarce resources and not to be tempted to maximise cooperation rather than actual reductions in resource use.

However, there is a tension between compensating households equally and compensating them according to the costs that the access restrictions impose. Where REDD payments have been allocated in Tanzania, a decision was made that households would each receive the same payment regardless of costs imposed, thus avoiding the problem of compensating individuals for ceasing what may well have been illegal extraction of forest resources whilst not rewarding those who had not been damaging the forest. Further, with limited budgets, it is particularly important for policy makers to use livelihood projects not just to compensate households but also to change behaviour.

Finally, we have found that decisions over where to patrol are rarely strategic, and often focus on detection and punishment rather than deterrence of the most damaging illegal activities. An important starting point is for park managers to use historical records of where patrols occur and the outcomes of these patrols to allocate scarce patrol budgets more effectively.

#### ABOUT THIS BRIEF

This brief is based on:

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