
Introduction:

Co-management Initiatives Implemented by IPAC in Wetlands and Forests of Bangladesh

Jefferson Fox and M. G. Mustafa

In 2003 the Forest Department of Bangladesh (FD) launched, in association with the United States Agency for International Development (USAID), the Nishorgo Support Project with the objective of enhancing biodiversity conservation in target protected areas through the active and formal involvement of local communities in the management of these sites. Nishorgo sought to empower local communities to sustainably access benefits from protected areas as a way to counter much greater threats from organized commercial timber theft, extraction for commercial brick fields or sawmills or land-grabbing (Roy and DeCosse 2006). Nishorgo also sought to increase the number of protected areas, improve infrastructure and capacity to receive visitors at parks, develop policies to promote better protected area management, strengthen institutional systems, and build the capacity of key stakeholders. The ultimate aim was to develop a model for protected area management systems that could be replicated throughout the country.

In addition, Nishorgo sought to strengthen the capacity of the Forest Department and local academic institutions to conduct applied research to support the design of new and more appropriate management plans and policies. To this end, Nishorgo and the East-West Center, with support from FD and USAID, arranged a series of workshops for FD officials and local researchers. These workshops enabled participants to develop study proposals, conduct field research in the pilot protected areas, and to write up their results. These workshops resulted in the publication of two edited volumes. The first volume published eight papers focusing on issues of rural livelihoods in the pilot co-management sites (Fox *et al.* 2007); and the second volume contained eleven papers that analyzed the co-management initiatives implemented by Nishorgo to assess their overall effectiveness (Fox *et al.* 2008).

In 2008 the Bangladesh Ministry of Environment and Forests (MoEF) and Ministry of Fisheries and Livestock (MoFL) launched, in association with USAID, the Integrated Protected Area Co-management (IPAC) program as a successor to Nishorgo and MACH. The Management of Aquatic Ecosystems through Community Husbandry (MACH) project was launched in 1998, also with the assistance of USAID, to develop community-based participatory approaches to wetland management. The project continued until 2005 and during that time officials worked with partners to secure dry season water rights, establish fish sanctuaries, reduce fishing pressure by exploring alternative income generating activities, promote policy-level coordination, link resource users, and improve local wetland habitats (USAID 2007).



IPAC seeks to improve the management of both protected wetlands and forests. The program was designed to meet the needs of co-management arrangements at national, regional, and local levels including policy development, institutional capacity building, and support for site-specific implementation. IPAC operates under the Government of Bangladesh's Nishorgo Network, a national network of protected areas.

As with Nishorgo, IPAC also sought to strengthen the capacity of the Forest Department, as well as the Department of Fisheries, the Department of Environment, and local academic institutions to conduct applied research to support the design of new and more appropriate management plans and policies for protected forests and wetlands. In collaboration with WorldFish, the East-West Center ran another series of workshops to enable participants to develop study proposals, conduct field research, and to write up their results. The first volume in the IPAC series but third in the Nishorgo/IPAC series contained eleven papers that focused on co-management and livelihoods in the protected sites (Fox *et al.* 2011).

For this fourth and final volume, we invited an analysis of co-management initiatives implemented by IPAC in wetlands and forests in the Nishorgo Network sites. We invited applications from participants prepared to analyze questions surrounding co-management in wetlands and forests, and to explore strategies for conserving resources while improving the livelihoods of rural peoples. Among the types of questions we were interested in exploring were:

- Participation and Governance - what is participation and how is it implemented? Who are the key stakeholders and how do we put participation into the context of power relations? To what extent do government policies and/or institutional systems and capacity of government departments (Forests, Fisheries, and Environment) inhibit or facilitate the performance of co-management in protected areas?
- Livelihoods - what is the impact of co-management on the rural poor, especially women and ethnic minorities? In light of the economic activities under way at the sites, who are the current and expected beneficiaries? What benefits (products) do rural people derive from wetlands and forests and what services do they provide in return?
- Resources - does co-management lead to conservation? What are the impacts of co-management on biodiversity, ecosystem services, quality of forest and fishery resources? How do local people monitor the quality of protected areas, and how does that perspective relate to participatory monitoring efforts supported by IPAC? Does co-management increase a community's awareness of methods for adapting to and/or mitigating climate change?

Participation and governance

Participation is a common theme in research and programs on conservation and protected area management, and figures prominently among the papers in this volume. Public officials often see participation as a binary variable on a checklist – you either have it or you don't. In reality, however, participation is considerably more complex and elusive. Arnstein (1969) notes that participation occurs on a “ladder” with multiple possible rungs or degrees, from outright manipulation to full, unfettered involvement in decision-making. In practice, participation often falls somewhere between these two extremes, in the realm of “tokenism”: the limited involvement of local actors through informing, consultation or placation.

Brechin *et al.* (2002) argue that much of the debate on biodiversity protection has relied on a false dichotomy between rural livelihoods and biodiversity conservation. In contrast they suggest that establishing a legitimate process to constructively work with people is the most feasible and morally just way to achieve long-term nature protection. They suggest that since conservation is a human organization process, the goal of biodiversity protection depends on the strength and commitment of social actors. They posit that successful biodiversity conservation will ultimately be based the adoption of three broad principles that local people must have the right to: 1) participate at all levels of the policy making process as equal partners; 2) self-representation and autonomy, and 3) political, economic, and cultural self-determination. Co-management should mean that local users and stakeholders provide input for the decisions that affect their livelihoods and access to resources. This input can take the form of participation in decision forums within their own communities, as well as representation and influence in higher-level governance bodies that incorporate multiple communities and various other local and non-local stakeholders.

In this volume, *Ariful Hoque Belal* writes that co-management committees have been established and functioning in Teknaf Wildlife Sanctuary for the last six years despite various limitations and complexities. He found that the diverse stakeholders are represented in co-management committees; that these committees conduct regular meetings and engage in collaborative activities including patrol groups, installing improved cooking stoves, and alternative income generating activities (AIGAs). He concludes that co-management is having a positive impact on local livelihoods and the conservation of forest resources. *Rafiqul Islam Chowdhury* compared co-management in Satchari National Park where it has been practiced since 2005, and in Bhawal National Park, which does not have a co-management initiative yet. In contrast to Belal, Rafiq argues that the sustainability of co-management through policy supports and financing has yet to be ensured; co-management committees have yet to be developed into institutions for promoting conservation, and ensuring representation from various stakeholders is still a problem; collaboration between the FD and IPAC is minimal; community patrolling groups lack support for AIGAs; and existing project support for AIGAs is not sufficient or sustainable.



Clearly the tension between these two papers show the many dimensions of the social relations involved in community based resource management and the difficulties of fostering learning across relationships. They paint a picture that is often messy, complex, and not always successful. They show where theory is difficult to implement. It is precisely these experiences that we hope will advance the development of better resource management in protected areas of Bangladesh.

On the fisheries front, *Umme Kulsum Ferdousi* found that people who did not fish around Mokosh Beel were actively engaged in co-management decision-making and the preparation of management plans, whereas people who did fish were not involved in decision-making and planning. Contrarily, she found that both fishers and non-fishers were engaged in the implementation of activities including the establishment of fish sanctuaries, excavation of canals, awareness raising programs, and the distribution of micro-credit. Respondents in the study area expressed a great desire to continue co-management practices, although they feared inconsistency in co-management activities due to improper supervision after termination of the IPAC project. *Abul Bashar's* paper found that the MACH and IPAC projects have worked with various partners to improve dry season water management, establish fish sanctuaries, reduce fishing pressure by introducing AIGAs, promote policy-level coordination, link resource users, and carry out other activities with the overall goal of improving local wetland habitat. Bashar concludes that the active engagement of fishers in co-management activities around Keuta Beel reduced fishing pressure resulting in an overall increase in fish production in this region.

Livelihoods

The papers in this volume review alternative income generating activities being implemented by IPAC. AIGAs are a form of payment for environmental services (PES). A review of PES programs concluded they are concentrated in four fields: carbon sequestration, watershed protection, biodiversity benefits, and landscape beauty (Landell-Mills and Porras 2002). While these approaches are motivated by environmental concerns, there is increasing interest in their potential to also deliver development benefits. Yet it remains unclear to what extent the two objectives of environmental conservation and development can be achieved simultaneously through market-based mechanisms.

Grieg-Gran *et al.* (2005) found a key obstacle to scaling up PES initiatives was insufficient ability to pay for environmental services. For example, a payment scheme in Costa Rica was heavily oversubscribed on the supply side. If all applications from landowners for PES enrolment were to be accepted, three to four times the amount of financing currently available would be needed (Rojas and Aylward 2003). A PES project in Ecuador was obliged to rethink its scope and not sign further contracts, as a result of reduced financial backing (Grieg-Gran *et al.* 2005).

The AIGAs examined in these projects involve communities in ways where the service buyer “is viewed not as a development partner, but as a paternalistic charity. There was no contract, either implicit or explicit, detailing the communities’ or (the buyer’s, i.e., IPAC) rights and responsibilities’ (Asquith *et al.* 2002). These initiatives are thus much closer to traditional Integrated Conservation and Development Projects than to quid pro quo initiatives. It remains to be seen if these AIGAs can be sustained or will be discontinued in the future. On the other hand, growing pressure on forest and wetland resources in Bangladesh opens up windows of opportunity for new market-based environmental service initiatives. This topic will grow in importance, so it is essential to discuss its developmental implications from the early stages.

In this volume, **Ranadhir Kumar Das** reviewed AIGAs as a means of improving the livelihoods of villagers living around Madhupur National Park. He found that only about ten percent of households received AIGAs. Likewise, **Mahbub Morshed** found unanimous agreement among stakeholders in Rema-Kalenga Wildlife Sanctuary that natural resource depletion had been reduced and that local communities had benefited from AIGAs. He found, however, that the AIGAs were insufficient in terms of both the amount dispersed and the number of beneficiaries. His study questioned the institutional sustainability of CMCs because of insufficient AIGAs.

In the fisheries arena, **Fozlul Kabeer** studied co-management in Baikka Beel, a MACH project site. He found that participants in the MACH program were more positive and optimistic about sustainable resource management than non-participants; incomes of MACH fishers were higher than that of non-MACH fishers; MACH fishers had AIGAs, non-MACH fishers did not; fishing rights of both MACH and non-MACH fishers are not well established due to current leasing systems; and fish production and biodiversity have been improved due to community-based sustainable management. He concluded that AIGAs and secure fishing rights increased the income level of poor fishers by supporting strategies for better fish management. **Jahir Uddin Akon’s** research in the Sundarbans found that AIGAs had a small but definite impact in this area, slightly reducing the surveyed households’ dependence on fishing and on local moneylenders. However, the AIGAs provided thus far are insufficient; individual AIGA loans/grants should be larger, and more households should have access to AIGAs. There is also a need for programs supporting greater awareness of sustainable practices, and it is crucial that more effort be put into halting fishing with poison. **Solaiman Haider** studied Hakaluki Haor, one of the most important wetlands in Bangladesh in terms of the goods and services it provides to local communities but also as a precious ecosystem with global significance for migratory birds that visit the wetland each year. He found that AIGAs had positive impacts on the livelihoods of the community and strongly supported the institutionalization of AIGA initiatives for the betterment of both the community and ecosystem.

Resources

Traditional conservation models have depended heavily on the knowledge and priorities set by professionally trained biologists, foresters, and government officials, with little regard for the needs and preferences of local resource users. Assuming that rural resource users are the cause of forest and wetland degradation and that local people are not interested in conservation, protected area professionals have focused on controlling and policing the local people rather than learning from their experiences. However, the solution is not a total reversal of this situation as some have implied. While the involvement of the community is critical, in many cases both government agencies and local institutions are too weak to handle the various levels of park or wetland management independently. Berkes (2004) cautions that in shifting the balance of power from professionals to local communities, decision-making authority should be shared across stakeholder groups in order to more effectively deal with complex management issues. Monitoring and evaluation of conservation projects, then, should not only (a) incorporate local ecological knowledge and participatory data collection, but also (b) address the responses of the local resource users to the management systems themselves.

Both these aspects of monitoring and evaluation the use of traditional ecological knowledge and local responses to co-management activities are addressed in this volume. **Jahidul Kabir** studied elephant habitat conservation and human-elephant conflict in Chunati Wildlife Sanctuary. He found that co-management brings positive changes among participating members in terms of increasing awareness about elephant habitat conservation and the Wildlife Act, and may help to reduce forest dependence to some extent. He also found that human-elephant conflict increased during the last two to three cropping periods, and that the increase in the number of elephants is contributing to increased human-elephant conflict.

Mahbub Ul Haque examined fish biodiversity in beels adjacent to and removed from protected areas, fishing practices, perceptions among local community members about the effectiveness of the Baikka Beel Sanctuary, and benefits that local fishers derive from the sanctuary. He found that 31 species of fish were reported in Balla Beel and 24 species in Sixty Two Beel. Boal (*Wallago attu*) is the dominant species found in the beels adjacent to Baikka Beel. Exotic species like grass carp (*Ctenopharyngodon idella*) and common carp (*Cyprinus carpio*) are also common in both wetlands. Indigenous species like *Ompok bimaculatus*, *Puntius sarana*, *Nandus nandus*, *Labeo gonius*, and *Chitala chitala*, which were rare before the establishment of the fish sanctuary, are now common in both beels.

Mohammad Abdur Rouf studied the present status of fish biodiversity, as well as the impacts of co-management on fish biodiversity, at Dhali-Baila Beel (a MACH site) and Shaitandaha Beel (a non-MACH site). Forty-four fish species were recorded at the MACH site and 15 fish species were found at the non-MACH site.

The average fish production was 313 kilograms per hectare at the MACH site, and 196 kilograms per hectare at the non-MACH site. Eleven fish species were found to be endangered at the non-MACH site, compared to only one species at the MACH site. Furthermore, eight fish species were revived at the MACH site and no fish species was revived at the non-MACH site. His results suggest that fish biodiversity at the MACH site is richer than at the non-MACH site, and that the impacts of co-management on fish biodiversity conservation in this important wetland ecosystem have been positive overall.

Summary

Bangladesh is among the most poor and densely populated nations on the face of the globe. The difficulties government officials and NGO activists face in promoting the conservation of flora and fauna are among the most severe found anywhere. This joint project of the East-West Center, WorldFish, and IPAC encouraged employees of the Bangladesh Forest Department, Department of Fisheries, Department of Environment, and local academic institutions to conduct field research on the impacts and implications of protected areas on the livelihoods of people living in and around the chosen protected areas.

The papers in this volume are the results of this initiative. These papers point to several important conclusions about linkages between rural communities and conservation in protected area management. First, they illustrate the importance of developing constructive ways of involving local stakeholders in conservation and sustainable resource use practices based on the goals, interests, and understanding of the people living in and around the protected areas. These case studies confirm that protected areas cannot be managed successfully on the basis of simple and incorrect assumptions about how local people use natural resources. The authors of these case studies unanimously argue for incorporating local people and their knowledge into park and wetland management decisions through some type of co-management system. These authors suggest that establishing a process to constructively work with people is perhaps the most important step that can be taken on the road to sustainable protected area management. The process by which decisions are made about resource management may be more important than any product or plan protected area managers can produce.

Second they suggest that strategies to link rural livelihoods and conservation are not a universal panacea for conservation problems. AIGAs may give local communities incentives for protecting these species, but this may have little or no impact on overall habitat conservation. These papers suggest that no one strategy will work everywhere and indeed, probably no one strategy can work on its own at any given site. It may be possible to link AIGAs, for example, in only one part of a protected area, and use other approaches in other parts of the park. To make conservation happen, park and wetland managers need to be able to understand the

specific local conditions at their project site, both at the start of the project, and as they change over time. They need to develop the appropriate mix of strategies that include incentives and other strategies such as education and awareness. In addition, they need to monitor the results of their interventions, analyze the data, and use it to make appropriate responses in a process of adaptive management.

As Salafsky and Wollengberg (2000) suggest, establishing linkages between livelihoods and conservation may be necessary for improved resource management, but it may not be sufficient for conservation to take place. Salafsky *et al.* (1999) suggest that successful conservation strategies require that projects generate cash and noncash benefits for the stakeholders and that the stakeholders have the capacity to take action to mitigate internal and external threats. Other factors include the biophysical, social, and institutional context that the project is operating in and the skill of the project team. Ultimately we may face a tradeoff between achieving better rural livelihoods and better resource management. Communities, and those institutions supporting communities such as NGOs and donors, must struggle to find the most appropriate balance between achieving the objectives of better resource management and more equitable distribution of access rights to resources.

Protected forests and wetlands may not ultimately help people escape the poverty trap. This raises the questions for advocates of co-management about how far these initiatives can go towards alleviating poverty. The answer may depend upon whether poverty reduction is seen as a relative goal, where improvement of the current situation is the aim, or an ‘absolute concept’, not related to the perceptions and relative situation of the social groups. Community based resource management initiatives are evolving into a form of social action that is concerned with broader issues beyond resource management such as governance and democracy.

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