



Introduction: Participation and the collaborative management of protected areas in Bangladesh

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Introduction

Collaborative management or “co-management” of natural resources involves sharing of responsibilities, benefits and decision-making powers among key stakeholders in a particular area. While the debate over community-based conservation and sustainable use of resources has continued for well over a decade, it has also become clear that fortress-style conservation has failed in many countries and that local cooperation is essential. In situations where competition over natural resources is intense and local people are directly dependent on the resource base, local stakeholders must be actively engaged in order for conservation to be effective and self-sustaining into the long-term. This means that local resource users should be empowered to take on a greater share of management responsibilities from government authorities while at the same time benefiting from improved resource management (Borrini-Feyerabend *et al.* 2000, Pimbert and Pretty 1995, Berkes *et al.* 1991).

In Bangladesh, as in other parts of South Asia, local level land-use planning and development have long been obstructed by the top-down approach favored by a traditionally centralized form of government. This in turn has negatively affected biodiversity conservation efforts and sustainable natural resource management,

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which have become critical issues in recent years throughout the country. Conservation in national parks and other protected areas has followed the conventional model of developing prescriptive management plans that focus mostly on biological aspects, and excluding local people while leaving access open only for scientific investigators and tourists. However, the demands of large populations of the rural poor and heavy illegal commercial extraction backed by local elites have proven to be impossible to manage in this way (Roy and DeCosse 2006, Sharma *et al.* in preparation). In fact, the illegal commercial extraction of resources from both terrestrial and aquatic ecosystems in Bangladesh far outweighs subsistence removal by the poor. Yet the powerful rural elites who run organized crime syndicates are rarely identified as a cause of resource loss. In this context, co-management has been proposed as a means of developing partnerships among various stakeholders to unite them in efforts to stop illegal extraction (Roy and DeCosse 2006).

Bangladesh has a high population density, and one of the world's lowest levels of protected area coverage per person. The country adopted its first co-management program for natural resources, the MACH project, in 1998. The MACH project (Management of Aquatic Ecosystems through Community Husbandry), which ends this year, was developed with the aim of addressing poverty, declining fish stocks and wetland degradation in the northeastern region of Bangladesh. MACH was also developed as a pilot study to investigate whether or not such a co-management model could effectively challenge the long-held traditional system of "command and control"-style resource management by allowing local voices to inform decisions (USAID 2004). In the evaluation process, USAID recommended that the MACH model of transparent governance should be replicated in the protected areas of Bangladesh to improve conservation management.

Thus, the success of the MACH project paved the way for developing a complementary co-management program for degraded forestlands on slopes adjacent to several of the MACH project wetlands. Because of the strong ecological impacts of forest degradation on water quality and flooding patterns, and because some of these forestlands are also protected areas of national importance, these upland sites were identified as priority sites for a pilot project in collaborative Protected Area management. Degraded national parks from the southeastern coastal zone were later selected as additional sites that, if restored, could potentially act as cyclone buffers.



In 2003, the forest co-management project, named the Nishorgo Support Project, was launched as an undertaking of the Forest Department of Bangladesh together with support from USAID. The overall goal of the Nishorgo Support Project (Nishorgo) is to enhance biodiversity conservation in the target protected areas through the active and formal involvement of local communities dependent on forest resources. This means improving the local economy and living standards of local stakeholders. Thus, a key factor is to empower the local poor to sustainably access benefits from the forest, as a way to counter the much greater threats from organized commercial timber theft, extraction for commercial brick fields or sawmills or land-grabbing (Roy and DeCosse 2006). Other specific goals include increasing the number of protected areas, improving infrastructure and capacity to receive visitors at parks, developing policies to promote better protected area management, strengthening institutional systems, and building the capacity of key stakeholders and the Forest Department. The ultimate aim is to develop a model for protected area management systems that can be replicated throughout the rest of the country.

Another objective of NSP is to strengthen the capacity of the Forest Department and local academic institutions to conduct applied research for the protected areas, in order to support the design of new and more appropriate management plans and policies. To this end, Nishorgo aims to assist researchers in addressing these priorities. In 2006 and 2007 Nishorgo and the East-West Center, with support from the Forest Department of Bangladesh and USAID, arranged a small grant and a series of workshops for Bangladeshi researchers. This enabled participants to develop study proposals and conduct field research in any of the pilot protected areas, and to write up their results.

The first round of research papers focused on issues of rural livelihoods in the pilot co-management sites (Fox *et al.* 2007), while the current (second) round analyzes the co-management initiatives implemented by Nishorgo to assess their overall effectiveness. In this second round, graduate students, university lecturers, and mid-level Forest Department site staff developed the eleven articles included in this volume. The initial research objectives included: (1) developing a definition of participation and its implementation within the Bangladesh context and putting participation into the context of power relations; (2) examining the impacts of co-management on women, the rural poor, and ethnic minorities; (3) describing the

extent to which government policies inhibit or facilitate the performance of co-management initiatives at both the micro and macro levels; (4) describing the extent to which the institutional systems and the capacity of the Forest Department affect the performance of co-management in protected areas; (5) describing the extent to which local and customary institutions and their leaders affect the performance of co-management initiatives; and lastly, (6) addressing the central question of whether or not co-management leads to conservation.

In this chapter we provide a brief review of major concepts in the literature on co-management and protected areas, with regard to three general themes addressed in the research articles: participation and governance, applications of local knowledge, and local livelihoods. An overview of each of the research articles is then provided.

Participation and governance

The central challenge is to find ways of putting people back into conservation. Such participation will not be easy, as the term itself is interpreted in many different ways. Only certain types of participation will lead to sustainable conservation. Alternative systems of learning and interaction will help this process of participation, and lead to a new vision for protected area management that builds strongly on vernacular conservation. The new vision will need a new professionalism, new supportive policies, and innovative inter-institutional arrangements.

- Pimbert, MP, and JM Pretty. 1995. Parks, People and Professionals: Putting 'Participation' into Protected Area Management. Discussion Paper No. 57. IIED, UN RISD, WWF: Geneva.

Participation and good governance have become central themes in conservation theory and practice, including the management of protected areas. Yet, despite their broad appeal and apparent conceptual simplicity, these ideals have proven difficult to implement in many contexts, due to socioeconomic discrimination, local power struggles, weak institutions and institutional relationships, and conflicting interests among governments, private entities and communities. The resulting lack of meaningful involvement in co-management activities and governance has served to reinforce the marginalization of specific groups, particularly the



poor, ethnic communities and women. New management models and perspectives are needed to address these constraints, through a system of truly participatory 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. Building on Arnstein's framework, Rocha (1997) cites three basic models of participation, namely “paternalism” (highly centralized decision making with minimal citizen input); “conflict” (struggle among different interest groups to obtain influence over decisions and resources); and “co-production” (cooperative, consensus-oriented decision-making with significant public involvement).

These categories are instructive for thinking about community participation in the management and conservation of protected areas in Bangladesh and other countries where decisions about local access, rules and institutions have typically been made by higher-level government officials and passed down the bureaucratic hierarchy, with little if any input from local stakeholders. This “paternalism” has sometimes transformed into “conflict”, even violence, as local actors express their dissatisfaction at being socially, culturally, politically and/or economically marginalized. In contrast, “co-production” is a relatively recent objective in natural resource management in Bangladesh that is increasing in currency under the rubric of co-management. Studies of government-community relations in protected area management elsewhere have revealed that these relations are frequently dominated by a strategy of “containment”, whereby planning agencies engage in the “strategic management of public involvement... [through] conflict avoidance, exclusion of dissent, and control over knowledge and procedure” (Few 2001). Such a strategy is not conducive to meaningful participation by local stakeholders.

Many tools and mechanisms have been developed to promote greater community involvement in conservation and development programs and initiatives. They have been incorporated under the broad umbrella of Participatory Rural Appraisal (PRA), a “family” of participatory methods for ensuring bottom-up development (Chambers 1994), and have been utilized by government agencies and NGOs in a wide variety of contexts, including community based natural resource management programs and efforts to promote the collaborative management of protected areas, such as the Nishorgo Support Project.

However, these methods have also been the subject of much criticism. Some scholars claim that we should not be overly optimistic about their potential, and warn of the risks inherent in accepting participation at face value and thereby ignoring important aspects of power, interests, history, justice, legitimacy, social difference and scale (Rocheleau and Slocum 1995; Kapoor 2002). It is also important to consider the various ways in which participation can and does occur. As Lowry *et al.* (1997) suggest, participation is not just about how many people show up for a meeting or activity; it is also about specifically who shows up, and how they participate. Conversely, it is also about who does not show up and how they are excluded from purportedly participatory processes.

Baum (1999) suggests three types of participation: psychological/political, physical, and financial. Following this logic, participation in protected area management can occur in a few basic areas: (1) forest management activities (physical labor); (2) monitoring of resource use and abuse; (3) material and economic benefits (access to training, resources, and revenue from their sale); and (4) decision-making (at the community, site and higher levels). Many community members are satisfied with participation in management activities and material and economic benefits alone, until they perceive that their fundamental rights or needs are being threatened or ignored. For example, at Chunati Wildlife Sanctuary, Kabir Hossain Patwary (this volume) found that a significant number of those involved in co-management activities feel they are playing a passive role.

The direct involvement and/or effective representation of all actors in decision-making at the local (or higher) levels is imperative to secure the material and economic benefits from participation, and to influence the specific nature and rights of involvement in forest management activities. However, research on



women's participation in the co-management of protected areas reveals that they are frequently excluded from important decision-making processes and policy dialogues – due to both systemic factors and the failure of officials to implement policies on gender mainstreaming – thereby perpetuating gender inequities at multiple levels (Svarstad *et al.* 2006). Moreover, Badola and Hussain (2003) contend that women's low self-esteem, due to their entrenched sociocultural marginalization, necessitates additional incentives for their participation. Two authors in this volume, Rizwana Subhani and Shamima Begum Shewli, concur with this. They note that while some women have benefited in material, social and economic terms from their involvement in local forest user groups, women's representation and participation in local decision-making bodies remains severely restricted. Moreover, participatory conservation initiatives, such as co-management of protected areas, are viewed as compromised when local women are involved to such a limited degree (Svarstad *et al.* 2006). Therefore, there must be explicit mechanisms for women to have direct input into both local and higher-level processes and decisions.

For planners and administrators, effective participation should not be merely an item on a checklist, but a responsibility that involves better listening; more patience; more transparency about the process and expected outcomes; more attentiveness to power, how it is exercised and by whom; and more reflection on their own role in the process (Lowry *et al.* 1997). Planners should also take the time and effort to develop a deeper empathy for alternative views and experiences, and promote the active involvement of community members in facilitating roles (Umemoto 2001). Participation depends not only on the initiative of local citizens to become involved, but also on the willingness of the governing actors and institutions to let them participate, and to incorporate their views into policy decisions and management procedures. This willingness is also a key component in the concept of good governance.

According to Dearden *et al.* (2005), “governance refers to the interactions among structures, processes, and traditions that determine direction, how power is exercised, and how the views of citizens or stakeholders are incorporated into decision-making.” Scholars have argued that effective governance depends on both downward and upward accountability, and a balance between local and higher-level

norms and institutions, whereby local actors have a say in decision-making, but state agencies also serve as a check on local excesses and abuses (Agrawal and Ribot 1999; Ostrom 2005). Clearly, to ensure effective co-management, there must also be mechanisms by which government officials are directly, downwardly accountable to local communities. Singleton (2000) proposes three categories of action that governments must take to facilitate successful co-management: (1) show support for the welfare of communities and the co-management processes; (2) demonstrate competence in research, oversight and enforcement related to co-management; and (3) ensure that accountability mechanisms that apply to both parties are built into the system and not dependent on individual actors. In other words, effective governance for the co-management of protected areas requires not only strong, accountable institutions at the community, site and national level, but above all strong linkages of accountability, transparency and collaboration among these various institutions (Barrett *et al.* 2001).

Co-management also means 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. Accordingly, there are three basic levels of governance and participation pertaining to co-management: (1) national level governance by executive and legislative bodies (e.g., government laws and regulations, Forest Department policies and directives); (2) site-level governance and participation by multiple stakeholders (e.g., through co-management decision-making bodies); and (3) participation in community-level decision-making, forest management activities, and associated benefits (e.g., via local resource management/monitoring groups and project activities). Abdullah Abraham Hossain (this volume) finds that existing laws and policies at the national level are inconsistent with, and sometimes contradict, the co-management model being carried out by the Government of Bangladesh. He notes that this incompatibility is preventing meaningful stakeholder participation and argues that government laws and policies be revised to better reflect current co-management structures and processes. Also in this volume, Ruhul Mohaiman Chowdhury identifies three distinct groups (levels) of actors with an interest in the forest: primary stakeholders (e.g., ethnic communities living within or very close to the forest,



resource collectors, illegal loggers and timber traders); secondary stakeholders (e.g., sawmill/brickfield owners, furniture shop owners and timber concessionaires known as mahalders); and tertiary stakeholders (e.g., local government and law enforcement officials; tea estate laborers and land encroachers). He observes that not all of these stakeholders have yet been incorporated into local co-management institutions.

It is not participation and governance in and of themselves that matter, then, but rather participation in governance. In a macro-study of 41 countries, Dearden *et al.* (2005) determined that protected area governance has become more participatory over the last decade or so, leading to enhanced management effectiveness, and that these changes are increasingly supported by legislation and formal accountability mechanisms. As Brown (2002) states, “Fundamental changes are necessary to institutions and management and decision-making strategies... to effectively meet conservation and development objectives.” In her study of Joint Forest Management in India, Sundar (2000) notes that the state can play a positive role in promoting more equitable and participatory forest management, by mitigating conflicts among villages over previously open-access forest lands, and articulating the needs and rights of more distant or marginalized stakeholders. In Bangladesh, while community participation in material and economic benefits, forest management activities, monitoring efforts, and local institutions regulating these aspects is critical to effective protected area management, direct involvement in higher-level institutions and policy discourses that regulate these activities is of vital importance and is still lacking. In this volume, one of the problems noted by Ruhul Mohaiman Chowdhury is that members of the primary co-management institutions are not fully accountable to their various constituents. Indeed, co-management and community-based natural resource management are still in their infancy in Bangladesh, and have yet to learn many of the lessons about participation and governance that have already been incorporated into management and policies in other countries.

Participation in monitoring and evaluation

Many authors have pointed out that conservation projects must be truly participatory in order to survive in the long-term. This is also important for the operational

aspects of protected area management. Pimbert and Pretty (1995) highlight the need to use local knowledge systems as a starting point for conservation assessment as well as the need for local participation in design, planning and evaluation of management plans. 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 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 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.

The first condition, the use of local and traditional ecological knowledge in conservation planning, has gradually gained ground as a means for both increasing the knowledge base and sharing what is known about particular ecosystems. It is also accepted as a way of increasing interactions of local communities with outside researchers and empowering them (Berkes 2004). In a review of 15 case studies across 13 countries, Danielsen *et al.* (2005) found that locally developed monitoring plans are cheaper than professional ones, and that they can prompt management decisions more quickly in response to immediate threats to the local environment. Locally generated data may help improve the understanding and attitudes of local stakeholders towards sustainable resource management, have a stronger influence on community members to take conservation action when needed, and strengthen systems of community-based resource management where they already exist. However, the review also identified a need for more reliable systems that would satisfy higher levels of park management and provide information for global databases (Danielsen *et al.* 2005).



The second condition, measuring the responses of local resource users to conservation activities, is also critical to co-management. Several case studies have used participatory research itself as an evaluation tool to assess local peoples' perceptions and understanding of the protected area systems that they inhabit. Jim and Xu (2002), working in the Shimentai Nature Reserve in China, identified inadequate communication and the lack of community involvement in the management process as barriers, leading to misinformation and unrealistic expectations of benefits on the part of the local resource users. In some cases, this confusion actually prompted villagers living in the forest to cut trees in areas where they feared they would no longer have access. Similarly in Nanda Devi Biosphere Reserve in India, Rao *et al.* (2003) found that the interactions of local villagers with park authorities were very limited, and that villagers did not have a clear understanding of park objectives. In fact, local priorities for social and economic development were frequently found to differ considerably from the options that park management had deemed appropriate. Coupled with the fact that more villagers are subjected to economic losses rather than gains by changes in the park administration, this lack of coordination has led to conflict between the two groups.

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. Working in a southern game reserve, Nayeemul Karim investigated the potential to adapt the existing system of bird counting to a community-based monitoring approach. In one of the northern national parks, Mohammad Abdul Aziz found that local villagers residing in and around the park have a much greater understanding of forest biodiversity than local people living farther away, but are far less likely to be directly involved in the co-management process.

Participation and local livelihoods

The livelihoods of many people in Bangladesh and worldwide are closely connected to forests. People rely on forests to fulfill a number of important functions. Forests safeguard environmental services that communities depend on by protecting watersheds, preventing erosion, and assuring a relatively steady source of water flow for agriculture (Balmford *et al.* 2002). Forests help many people to meet their subsistence needs with wild foods, wood to fuel fires, medicinal plants, and building

materials. Forests offer a range of economic benefits and opportunities (Godoy *et al.* 2000). Some authors have written about the role of forests as a “safety net” of sorts for when misfortune occurs, providing food and a temporary means of surviving during difficult times (Arnold 2002). Others have seen forests as a possible “pathway out of poverty” for people who harvest non-timber forest products, manage agro-forests, and/or benefit from logging and the conversion of forests to farmland (Cavendish 2003). Finally, forests (such as sacred groves) have cultural and spiritual significance and contribute to people’s lives in non-monetary ways (Dudley, Higgins-Zogib, and Mansourian 2005).

Protected areas are the most commonly used mechanism for protecting forest biodiversity. However, in recent years attention has increasingly been brought to the more sinister side of protected areas, and to the ethical issues associated with the establishment of parks and reserves (West and Brockington 2006). Two of the most obvious negative impacts that protected areas can have are the displacement of people from their homes and the restriction of people’s access to forest resources (Adams *et al.* 2004; Cernea and Schmidt-Soltau 2006; Brockington, Igoe, and Schmidt-Soltau 2006). But the design and management of protected areas is changing in an attempt to lessen the negative impacts parks have on local people and to improve the ability of PAs to conserve biodiversity. Protected area zonation, which allows varying levels of use in different ‘zones’ of a park, and co-management, which involves local people in natural resource management decisions, are two examples of how the protected area conservation model is evolving.

This volume considers the influence of protected areas in Bangladesh on local people, and looks at ways co-management strategies are being used to help mitigate the negative impacts of protected areas on communities while also improving conservation. Abu Rushed Jamil Mahmood and Mohammed Ehsanul Hoque discuss the impact of newly established co-management structures on the livelihoods of local people, while Quazi Mohammed Nurul Karim and Bikash Chandra Saha Roy write on the initiatives being employed by NSP to improve the livelihoods of people living near national parks in Bangladesh. Together, the chapters by Mahmood, Hoque, Karim and Roy draw a picture of how protected area co-management schemes in Bangladesh are being designed to address local livelihoods issues, and the initial impacts these schemes are having on local people.



Further insight into the relationship between Bangladesh's protected areas and local livelihoods can be found in the first volume of this series, *Making Conservation Work: Linking Rural Livelihoods and Protected Area Management in Bangladesh* (Fox *et al.* 2007).

Overview of papers in this volume

Participation and Governance

The five papers in this theme cover the full spectrum of governance and participation with respect to co-management of protected areas, ranging from national level policy issues relevant to the overall structure and implementation of co-management, to participation in everyday activities and opportunities that help conserve the forest and support people's livelihoods at the community level.

Abdullah Abraham Hossain examines the policy and legal constraints affecting co-management activities at Chunati Wildlife Sanctuary. Hossain finds that NSP initiatives to involve local people in conservation at CWS are impeded by, and sometimes contradictory to, national laws and policies. He also reports a general lack of awareness among members of the co-management councils, co-management committees, and forest user groups at CWS regarding laws and policies associated with protected area management. Hossain concludes that current policy directives contain inadequate provisions to enable co-management, and that the system is still set up in a way that precludes meaningful stakeholder participation in protected area management. He recommends that government policies be revised to enable more effective co-management structures and processes.

Ruhul Mohaiman Chowdhury assesses the functionality of the Co-management Council and Co-Management Committee at Lawachara National Park – one of Bangladesh's most touted protected areas – according to four basic principles of good governance: inclusiveness, participation, accountability and transparency. He finds that the institutional foundation for co-management at the park remains without broad-based policy support, and is driven by government and donor objectives and funding priorities. He also notes that the Council and the Committee are dominated by elite stakeholders and their interests, and that they lack basic democratic norms. He concludes that there is insufficient designation and devolution of

responsibilities and financial/administrative powers for individual Committee members; that these members are not fully accountable to their various constituents, and that under-represented groups continue to be marginalized as a result. Finally, and perhaps most importantly, he notes that there is no clear mechanism in place to replace current external project support. Chowdhury further acknowledges that, since its beginning in 2004, the Nishorgo Support Project has demonstrated that it can promote a number of promising activities and forums for the conservation of biodiversity; yet he concedes that five years is not sufficient to ensure the long-term sustainability of the Nishorgo institutional framework. He concludes that the current institutional platform – while it has not yet brought about a complete shift from a top-down conservation approach and still faces many challenges – does show promise for ensuring sustainable, participatory governance of Lawachara National Park and other protected areas, whereby local communities share fully in the responsibilities and benefits of conserving biodiversity.

In her study of “The Role of Women in Co-management at Lawachara National Park,” **Shamima Begum Shewli** explores participation in three women’s forest user groups. Specifically, she assesses three key issues: women’s involvement and empowerment through NSP co-management activities; the impact of these activities on women’s livelihoods; and women’s awareness of these activities. Just over half of the women (54%) state that they participate actively in forest user group meetings, by sharing their opinions, taking on meeting responsibilities, and raising questions. However, most women face constraints in attending meetings regularly, due mostly to household and family obligations. Women are also poorly represented in higher-level co-management institutions. In fact, none of those interviewed during the study belong to the Co-management Council or Committee. Results also show that nearly half of the women earn income independently. Of these, about 81% are engaged in Nishorgo activities. The top two reasons reported for joining a FUG are to “save money” and “preserve biodiversity”. However, awareness about co-management activities is quite low. Less than half of the respondents know that NSP promotes forest protection, and only about one third are aware of specific training programs or meetings organized by NSP. Despite this low awareness, many women report that they motivate their neighbors and/or husbands to conserve the forest. Based on these results, Shewli concludes that increased involvement of women in a fuller range of co-management activities and forums will both



enhance the socioeconomic well-being of their households, and aid in the preservation of the valuable biodiversity on which this well-being ultimately depends.

Rizwana Subhani evaluates the influence of participation in forest user groups at Satchari National Park on women's access to income-generating activities, their degree of socioeconomic empowerment, and the physical and material well-being of their households. She finds that membership in women's user groups has risen over the past year, and that about two thirds of women non-members show an interest in joining a group. Her findings also reveal that nearly three out of five FUG members have received training and funding for alternative income generating activities, and that 41% of those trained have successfully developed their own enterprises, compared with 7% of non-members, who have received no training. Perhaps due to their involvement in these activities, most of the FUG members' report that their households are no longer involved in the fuelwood trade. In addition to advancing their material well-being and reducing their reliance on forests, results indicate that some women feel their participation in forest user groups helps increase their skills, their decision-making power and their respect in the eyes of family members and society. These results suggest that participation in co-management activities and institutions, through membership in user groups, can enhance women's economic and social status, as well as their livelihoods.

Kabir Hossain Patwary explores the degree and quality of participation by local people in the co-management of Chunati Wildlife Sanctuary. His research looks at how communities in close proximity to the sanctuary are involved in the planning, management and evaluation of co-management activities. Drawing on Arnstein's "ladder of participation" (1969), Patwary discusses how participation can take many forms and occur at varying degrees. He uses Deshler and Sock's framework (1985) to study how local people involved in co-management activities perceive their own degree of participation in protected area planning, management, benefit-sharing and project evaluation. His findings show that interviewees feel they are most involved in the implementation of co-management activities and the sharing of benefits, and considerably less involved in protected area planning and project evaluation. Patwary also investigates people's knowledge of co-management activities at CWS and finds that although most people are familiar with the general purpose of co-management, only a few can give specific objectives. Patwary's study

brings to our attention the ambiguity of the term “participation”, and the importance of involving people in more truly collaborative management.

Participation in Monitoring and Evaluation

Nayeemul Karim examines the existing system of bird monitoring in Teknaf Game Reserve to evaluate its suitability for a community-based monitoring approach. The objective of the study is to assess the level of local peoples’ knowledge with regard to eight indicator bird species chosen for avian monitoring. These species were pre-selected by a team of biologists without any direct meetings with local stakeholders, but with the intention of including recognizable species where possible. Almost all birds were well-known, especially those which are valuable as food, pets, trophies, or for pest control. Nayeem’s study finds that respondents’ level of knowledge of the species increases steadily with the proximity of their settlements to the forest.” Although age and gender have no relationship with the level of a person’s knowledge, factors corresponding to the distance of people’s homes to the forest (i.e., ethnic community and religion) are clearly linked to their level of local knowledge. Only villagers living within the forest are familiar with all of the selected species, and so a community-based monitoring system using all eight species inside the forest would be most effective if restricted to participants from only that group. However, communities living in the edge areas of the park are able to identify most species, so they would also be able to participate in bird surveys for the species known to them. Thus, the value of the indicator species used for community-based monitoring programs depends on the groups who are to carry out the surveys.

Similarly, **Abdul Aziz** finds that local villagers residing in and around Lawachara National Park have a much greater understanding of forest biodiversity than local people living further away. Although similar proportions from each group understand the importance of trees and forests, villagers are more likely than townspeople to correctly identify major forest vertebrates from photographs. Villagers are also about twice as likely as the local town elites to have had firsthand observations of the animals used in the survey and to understand their ecology. However, these villagers are poorly represented in the co-management apparatus, and have little knowledge of the park’s objectives. More than half of the villages are not represented at either the co-management council or committee level, whereas two zones represented in these administrative bodies (Srimongal and Komolgonj) are not even located in the immediate park vicinity. Conversely, members of the local elite and



local government are heavily involved in the administrative bodies for co-management compared to the villagers, and have a clearer idea of the park's goals; but they have little knowledge about the species and ecological significance of the park itself. These individuals sometimes take over the co-management meetings to further their own personal agendas. This detracts from attending to important administrative concerns of the park that affect rural people, such as habitat restoration, wildlife management, and forest protection. In fact, in cases where the elite are involved in forest poaching, local villagers who witness the crimes have no means to report the offenders. This major division of power in the management of the park is yet to be addressed.

Participation and Livelihoods

Quazi Mohammed Nurul Karim examines NSP's support for alternative income generating activities (AIGAs) to reduce local people's dependency on forest resources inside Teknaf Game Reserve. These activities include poultry rearing, vegetable gardening, pisciculture, investment in family businesses, establishment of tree nurseries, installation of improved cooking stoves, and cattle rearing. Karim's findings reveal mixed results. One of the poultry varieties provided by NSP is so highly susceptible to disease that many of the recipients of these birds have lost not only the donated chickens but also their own older stocks. Some of the pisciculture AIGAs have not fared well either, because participants are not trained in proper pond preparation and fish introduction techniques. On the other hand, AIGA support for small-scale trade, tree nursery development, and chulla making has done reasonably well. One of the greatest challenges of the program is that so many people depend on the reserve for their livelihood needs, yet AIGA opportunities are insufficient and are only offered to members of the co-management committees and councils, community patrolling groups, and forest user groups. Karim's research also reveals inequities in the distribution of AIGA opportunities, with some households receiving training and supplies for two activities, while others receive none. Finally, the economic value of AIGA remains limited, bringing into question whether they can significantly reduce recipients' dependence on the forest or bolster their livelihoods. Based on these findings, Karim calls for better coordination between the Forest Department, NSP and intended beneficiaries; and more consistent monitoring to ensure that AIGA support is equitably and effectively distributed.

Protected areas in Bangladesh and elsewhere are used by local people who collect fallen limbs and twigs for fuelwood, and also cut immature trees. The unsustainable harvesting of fuelwood from PAs leads to environmental degradation, but curbing the collection of fuelwood creates an ethical dilemma because many local people depend on fuelwood to meet their energy needs, the most important of which is cooking. NSP, German Technological Cooperation (GTZ) and Grameen Shakti (a Bangladeshi NGO) have introduced more energy efficient cooking stoves (chullas) to local people surrounding Chunati Wildlife Sanctuary as a means of addressing the problem of forest degradation from excessive fuelwood harvesting. In his paper, **Bikash Chandra Saha Roy** discusses the impact that the improved chulla program at Chunati Wildlife Sanctuary has had on reducing local people's dependency on the sanctuary for fuelwood. His findings suggest that users of improved chullas collect smaller amounts of fuelwood, and less often, from the sanctuary. They are also considerably less likely to illegally sell fuelwood than users of traditional chullas. Roy also highlights inequities in the availability of improved chullas, especially among the poor, and recommends that measures be taken to make them more easily available and affordable to all people living near CWS and other PAs in Bangladesh.

Mohammed Ehsanul Hoque evaluates the impact of people's involvement in forest user groups (FUGs) on the reduction of poverty and inequality in Chunati Wildlife Sanctuary. Stratifying his respondents according to wealth, he uses a few basic measures (i.e., number of meals per day, social status within the community, perceived benefits of membership) to compare the general level of poverty. Adopting the Sustainable Livelihoods Approach (Ashley and Carney 1999) he assesses differences in "ownership of and access to resources" (i.e., human, natural, financial, physical and social capital) between the two groups. Using these measures, he finds that poverty is lower among FUG members, and that resources are distributed more equally among FUG members than among non-members. Moreover, the study reveals that FUG members are more conscious of health-related issues, more likely to have access to safe drinking water, less likely to become ill, more financially secure, more equal in their land accessibility, more socially empowered, more apt to interact with other members of their community, and more likely to receive support from other community members in times of need. These findings imply that the overall situation of poverty and inequality among FUG members has been



enhanced, especially compared with non-members. Suggesting that these findings appear to validate the co-management model, Hoque recommends the expansion of research on this topic to cover a broader community and more protected area sites.

Abu Rushed Jamil Mahmood adopts a methodology developed by Colfer *et al.* (1999) to examine the perceptions of key primary stakeholder groups of Chunati Wildlife Sanctuary (forest villagers, betel-leaf cultivators, and fuelwood/bamboo/sungrass collectors) about the impacts of co-management on three major elements of their well-being: intergenerational access to resources; means and rights to manage forests; and the health of forests, forest actors and their cultures. His findings reveal that, although stakeholders have clearly acknowledged rights to manage the forest, they feel that access is inequitable and not adequately secured for future generations. For example, in most cases (except for bamboo collectors), primary users feel that the Forest Department and local traders accrue a greater share of resources than they do. Overall, respondents view the Forest Department as holding nearly half (45%) of the rights and means to manage resources in Chunati, with the remainder divided among Nishorgo officials (23%) the Co-management Council and Committee (12%), forest patrolling groups (10%), forest user groups (7%), and other stakeholders (3%). Thus, primary resource users feel they have very limited rights or influence in the management of the sanctuary. Moreover, they predict that the availability of all major livelihood resources derived from the forest will decline substantially over the next ten years. Many also sense a lack of balance between human activities and environmental conditions in the forest, noting that illegal activities continue to degrade the forest, threatening the health and culture of local populations. Overall, despite some perceived progress, Mahmood concludes that human well-being remains severely compromised at Chunati Wildlife Sanctuary and that Nishorgo's conservation efforts will only succeed when local people benefit fully from co-management decisions and activities.

Conclusions

The eleven papers in this volume illustrate that the co-management of natural resources and protected areas occurs on multiple levels. The authors show that although community-based natural resource management is still in its infancy in Bangladesh, measurable improvement has been made in terms of poverty reduction,

gender equity, resource dependence, and income-earning opportunities. However, co-management is not only about allowing local citizens to participate in forest management activities and share in the benefits that these activities produce; local users and stakeholders must also have the ability to influence the decisions that affect their livelihoods and their access to resources. It is in this area of participation that many issues remain to be addressed. Lack of local stakeholder input afflicts not only the governance machinery in place for co-management (i.e., the structure of the councils, committees, and forest user groups), but also the biological and social monitoring process, and the means by which PA benefits are distributed and selected. Moreover, power differentials continue to determine whose voices are heard in each of these matters, which in turn affects the flow of valuable information from those most closely in contact with the resource base. This leads to weakened protected area management that serves the needs of local elites, academics, and forest administration to the exclusion of local villagers, women, ethnic minorities, and the poor.

This situation is particularly precarious in Bangladesh, where deforestation since the 1970s has been driven largely by the patronage of the elite. By utilizing their social and political networks, hiring the local poor to carry out illegal felling and encroachment operations, and influencing the authorities to secure contracts and resolve legal charges in their favor, local businessmen have exploited public forests for private commercial gain without hindrance. Rampant corruption has reinforced this system over time, and there is a danger that even under co-management, the most powerful stakeholders will usurp the process. To paraphrase Wyckoff-Baird *et al.* (2000), participatory management runs the risk that in widening the group of actors making decisions, those with the most money and expertise will unite and control the management process. This is especially true in a country where democratic processes are still nascent and good governance is yet to be established in the wider public realm.

Several of the studies in this volume indicate that this may already be happening. For instance, current co-management institutions (i.e., the Co-management Councils and Committees), as well as existing laws and policies, still reflect the top-down approach of the previous management structure (Hossain, this volume). Furthermore, co-management institutions are dominated by elites, are not fully accountable to their constituents, and lack clear guidelines on the devolution of authority



and responsibilities to their various members (Choudhury, this volume). In addition, direct involvement of forest-dependent stakeholders, especially women, in co-management activities, institutions and decision-making forums that can enhance their socioeconomic well-being and their contribution to forest conservation remains very limited (Aziz, Shewli and Subhani, this volume). Finally, many primary stakeholders perceive themselves as playing a limited or passive role in PA management and decision-making (Patwary, this volume), and as having a low level of awareness about Nishorgo activities (Shewli, this volume), while their participation in alternative income generating activities is viewed as both insufficient and inequitable (Nurul Karim and Shewli, this volume).

Government conservation agencies such as the Forest Department have an obligation to address these issues by recognizing that effective participation can enhance forest management and protection, and also promote socioeconomic benefits and greater human and gender equity. Local people who are most directly invested in the parks' well-being must be empowered to participate meaningfully in conservation. The advancement of conservation and livelihood goals will ultimately depend on the ability of government agencies to support the aspirations and management practices of local user groups, both financially and technically. What is perhaps most important is the relative power of local resource users and institutions vis-à-vis village-level leadership, parallel institutions, external private actors, and local administrative and governing bodies. In other words, accountability in governance depends on the right and the ability to challenge local actions and decisions and higher-level decisions concerning how, and by whom, local resources are managed and utilized. Forest authorities are critically positioned to mediate such power relations. However, effective participatory governance also requires the ability of governments to 'let go', or to stop interfering in local-level decisions about the management of protected areas, by granting local governing institutions greater autonomy, while ensuring their accountability to local constituents by insisting on democratic structures and processes.

Although co-management does not necessarily eliminate conflicts between government actors and communities, or ensure that resources are managed sustainably, it does open up new possibilities for constructive engagement between the state and communities. The role of the state in successful co-management efforts far exceeds "getting the institutions right" or acting merely as a third-party enforcer of rules"

(Singleton 2000). Through the concerted efforts of local actors and conscientious officials, ongoing support from the Forest Department, innovative projects like Nishorgo, and practical insights from researchers, such as those contained in this volume, co-management has the potential to bring lasting benefits to communities living in and around the protected areas of Bangladesh, while preserving precious biodiversity for the use and appreciation of generations to come.

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