

A journey towards shared governance: status and prospects for collaborative management in the protected areas of Bangladesh

A. Z. M. Manzoor Rashid • Donna Craig • Sharif Ahmed Mukul
Niaz Ahmed Khan

Received: 2012-02-16; Accepted: 2012-05-28
© Northeast Forestry University and Springer-Verlag Berlin Heidelberg 2013

Abstract: Establishment of Protected Areas (PAs), in the face of rapid deforestation, forest degradation and climate change has been one of the key efforts in conservation of biodiversity worldwide in recent times. While Bangladesh has gained a degree of prominence in the world for its successful social forestry programs, the concept of collaborative protected area management is rather new in the country, initiated in 2004 by the Bangladesh Forest Department in five PAs with financial assistance from USAID. Based on empirical evidence from three of the pilot PAs, we examined the achievements and associated challenges and prospects for co-management. Our fieldwork revealed a number of challenges faced by co-management institutions: (1) institutions were dominated by the elite group, overshadowing the voice of the community people; (2) mutual trust and collective performance are key to good governance but had not taken root in the PAs; (3) encroachment onto forest land and subsequent conversion to agriculture remained a serious problem that discouraged forest-dependent people from participating actively in co-management initiatives; (4) legal provisions (including acts, rules and policies) were not clearly and adequately disseminated and understood at the community level; (5) there remained a degree of ambiguity regarding

the roles and responsibilities of forest department (FD) and co-management committees (CMC) in field operations, and this was not enhancing transparency and accountability of the overall initiative; (6) the long-term sustainability of co-management institutions was another major concern, as the local institutional structure was still in a nascent stage, and provisioning of resources (either internally or externally) remained somewhat uncertain. We offer recommendations for improvement.

Keywords: protected area; co-management; Nishorgo; IPAC; governance

Introduction

Of late, establishment of protected areas (PAs) have represented a key conservation strategy in the face of rapid deforestation and biodiversity loss worldwide (Ormsby and Kaplin 2005; DeFries et al. 2007; Orlovic-Lovren 2011). IUCN (1994) defines PAs as ‘areas especially dedicated to the protection and maintenance of biological diversity and associated cultural resources, which are managed through legal or other effective means’. Over the last few decades, the number and coverage of PAs has increased dramatically in most parts of the world (McNeely and Scherr 2003; Kaimowitz 2007; Sheil 2007; WCPA 2005), and currently there are more than 100,000 PAs worldwide, covering nearly 12% of the land surface (Chape et al. 2003; Scherr et al. 2004). Many developing countries in the tropics, where biodiversity is greatest and local communities rely on nature for sustaining livelihoods, have expanded their PA coverage to address growing conservation concerns (Ghimire 1994; Koziell and Saunders 2001). However, in many cases, simply setting aside PAs has failed to achieve the desired conservation goals due to pure ecological focus and poor recognition of local and indigenous people’s traditional forest rights and practices (Ormsby and Kaplin 2005; Craig 2002; Nepal and Weber 1995). This has led to conflicts and mistrust between PA managers and local forest user communities, resulting in failure to meet management goals of

The online version is available at <http://www.springerlink.com>

A. Z. M. Manzoor Rashid (✉) • Donna Craig
Environmental Law, School of Law, University of Western Sydney,
Australia.
E-mail: pollen_forest@yahoo.com

A. Z. M. Manzoor Rashid
Department of Forestry and Environmental Science, Shahjalal Univer-
sity of Science and Technology, Sylhet, Bangladesh.

Sharif Ahmed Mukul
School of Agriculture and Food Sciences, The University of Queen-
sland, Australia.

Niaz Ahmed Khan
Department of Development Studies, University of Dhaka, Bangladesh.

Corresponding editor: Yu Lei

PAs (Borrini-Feyerabend 2002 and Ferrari 2006).

Local peoples support for and involvement in PA management has been viewed as an important element of enhanced conservation in recent years, especially in developing countries (Wells and McShane 2004; Nagothu 2003). This new intervention, commonly known as co-management in PAs, under the broad canopy of community-based natural resource management (CBNRM), is a major emerging issue for conservation policy in many developing regions that has also been widely promoted by international conservation agencies (Fisher 2003; Jeanrenaud 2002; Kothari et al. 2000). The strategy enables local peoples to participate in PA management and most often offers local communities some direct and indirect benefits related to park management (Nagothu 2003; Castro and Nielson 2001).

Conservation without livelihood support of the forest dependent community is generally found to be ineffective. The principles of conservation and sustainable development (SD) now connect the economy on a regional scale and livelihoods of communities on a local scale (Pimbert and Pretty 1995). Co-management in this regard is playing a crucial role. The co-management approach not only addresses livelihood security of traditional communities but also deals with various management functions, rights, responsibilities and the scope of negotiation in a given set of area and or resources (Kothari et al. 1996).

The issue of 'governance' is increasingly becoming central in biodiversity conservation and is emerging as a key determinant of PA management (Balloffet and Marin 2007). Finding the right governance regime is key to the sustainable management of PAs (Berkes 2009). In a PA context, governance has various dimensions ranging from policy to practice, attitude to meaning, and from investment to impact that can influence the management objectives of the PAs (Lockwood 2001). PA governance concerns the structures, processes and traditions that determine how authority and responsibility are exercised. Five Basic principles of good governance namely legitimacy and voice, accountability, performance, fairness, and leadership are now being widely adopted and practiced for PA governance and management (Institute on Governance 2002).

Bangladesh, one of the most densely populated countries in the world, had about 20% forest cover until the British colonial period, and until 1980 was home to about half the bird species and a quarter of all mammal species of South Asia (Poffenberger 2000). Even though the beginnings of the government's conservation efforts in the country can be traced back to 1966, before independence, very few of the goals were actually met and today the actual forest cover is estimated at 6% (FAO 2009). So far, the government of Bangladesh has declared 28 PAs (according to IUCN PA management categories IV and V) comprising of 261,891.50 ha.¹ Of these, 18 PAs have adopted co-management (Bangladesh Forest Department 2011), on areas covering approximately 1.67% of the total land area of Bangladesh (Mukul et al. 2008). These figures are among the lowest in the world (World Resources Institute 2007) despite the country's exceptionally rich biodiversity favored by its unique geo-climatic conditions (Appanah and Ratnam 1992). Large numbers of the rural

poor are either forest dwellers or forest dependent for their subsistence (Roy and DeCosse 2006). Under such circumstances "Co-management" or "Collaborative management" is indispensable to maintain Bangladesh's vanishing forests and biodiversity through sustaining local livelihoods (Mukul and Quazi 2009).

Partnerships are increasingly being recognized and practiced as a driver of SD (Glasbergen 2007). Community participation in the forestry sector of Bangladesh has a long history that can be traced back as early as 1871 in teak plantations of Chittagong Hill Tracts by the tribal swidden farmers (Poffenberger 2000). However, participation in forestry sector officially began in 1980s that eventually expanded to the PAs through co-management.

Although Bangladesh is one of the leading countries in south Asia for its successful social forestry program (Zashimuddin 2004), the concept of PA co-management is new but considered a useful approach to better promote conservation and sustainable local development while delivering better options for governance. In 2002, the Bangladesh Forest Department (BFD) developed a program of forest co-management in five PAs on a pilot basis through an initiative called the Nishorgo Support Project (NSP 2006 and NSP 2007), with active support from USAID (Quazi et al. 2008). After the completion of this pilot project in 2007 it scaled up under the name 'Integrated Protected Area Co-management' (IPAC) with broader scope that included wetlands along with forest PAs. During the NSP period, five PAs (Lawachara National Park, Satchari National Park, Rema-Kalenga Wildlife Sanctuary, Chunati Wildlife Sanctuary and Teknaf Game Reserve) were selected to introduce co-management. These PAs are unique from the perspectives of biodiversity richness as well as for the high level of exploitation and human interference. Our study reports on, and shares the experiences of selected co-management initiatives from three of these pilot PAs with a focus on examining the effectiveness and acceptance of these interventions in the local communities, particularly the forest dependent community. The current study also aimed at revealing the institutional and legal frameworks in support of the co-management approach that significantly influenced the governance attributes.

Materials and methods

This article is based on the empirical findings from three (i.e. Satchari National Park, Lawachara National Park and Chunati Wildlife Sanctuary) of five pilot PA sites (Fig. 1). Field visits, systematic household surveys and in-depth interviews with an open-ended questionnaire were conducted in the study areas. The field work spanned over five months intermittently in three phases between 2008 and 2010. Four focus group discussions (FGDs) were carried out to identify potential respondents for in-depth interviews. An open-ended interview schedule was prepared to collect information. Two FGDs were conducted at Lawachara and Satchari National Parks and two were conducted at Chunati Wildlife Sanctuary. Local people, forest user groups (FUG) members, local leaders, FD and project officials were

¹ See for detailed listing

invited to participate FGDs. Eight respondents from each study site were selected considering their engagement and relevance to the co-management programme. Data were also collected by personal observation and from secondary information accessed using popular web engines namely ISI Web of Science and Scopus.

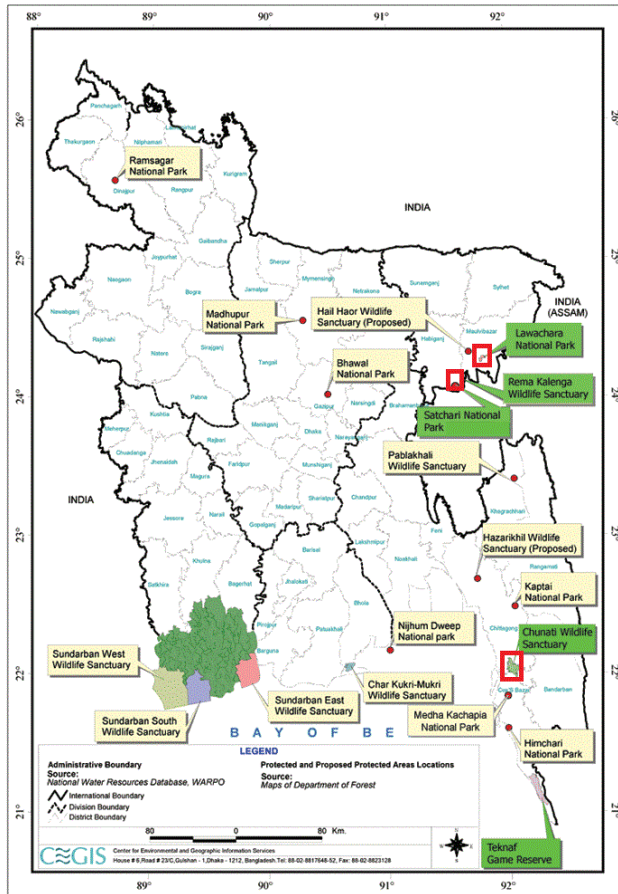


Fig. 1 Locations of the three study sites (red boxes)

Our study was based mainly on feedback from and perceptions of the local community relating to their engagement in the shared governance process. The rationale for focusing on the local community was as follows:

1. Local communities are the main targeted beneficiary of the co-management of PAs;
2. Forestry User Group (FUG) members reside in local communities and are the key role players in the governance of the PAs under co-management;
3. Rights, responsibilities, and access to cost and benefit sharing significantly influence the roles of local communities in conservation and development.

The first section summarizes the arrangement and status of PA systems in Bangladesh with a focus on efficacy for biodiversity conservation. The next section elicits key lessons from three of the pilot study sites in response to initiatives to promote co-management and equity in the areas. The final section is a recapitulation of the challenges and prospects of PA management in Bangladesh.

Results and Discussion

Protected areas of Bangladesh: Their role in biodiversity conservation

PAs are now considered the cornerstone of most conservation strategies and provide livelihoods and sustenance for dependent communities (Hockings 2003). The rapid destruction of biological resources in developing countries is influenced by socio-economic and political drivers², and brings the importance of PA conservation and management into the limelight. Long-term conservation of nature with associated ecosystem services and cultural values are the salient features of PAs by definition (Dudley 2008). In Bangladesh three types of PA are defined under the Bangladesh Wildlife Preservation Act, 1974 (amended in 2010), with the objective of conserving biodiversity (*in situ*) and the natural environment within various forest types. These include national park, Game Reserve and wildlife sanctuary.

The first group of PAs was established in the 1960s and 1970s; a second group of PAs was gazetted between 1980 and 1986, and a third group after 2000. In early 2013, twenty eight gazetted PAs included fifteen national parks and thirteen wildlife sanctuaries under the jurisdiction of the FD. Other categories of PAs managed by government include eco-parks, safari parks, ecologically critical areas (ECAs), World Heritage sites, and Ramsar sites. The PAs (IUCN categorized) of the country represent an area of 261,891.5 ha covering 1.8% of the total land area (14,400,130 ha); this is the second lowest per capita PA coverage in the world (Sharma et al. 2005).

To achieve its conservation objective a PA system must be representative of all ecosystem types (Dudley and Parish 2006). Even though the PAs of Bangladesh represent around 11% of the country's total forest area, they do not represent all ecosystems, and thus do not include all habitats and species important for conservation. The proportions of each of the three major forest types - hill forests, deciduous *Sal* (*Shorea robusta*) forests and mangrove forests represented in PAs are 5.2%, 11.2% and 23.3%, respectively (Mukul et al. 2008).

The *Nishorgo* protected area co-management initiatives

Co-management was first adopted on a pilot basis for aquatic resource management under the auspices of the project MACH (Management of Aquatic Ecosystems through Community Husbandry) during 1998 (Cunningham et al. 2011). The aim of the MACH project was to address poverty and to ensure sustainable management of wetland and aquatic resources by engaging local communities in overall planning and decision-making (Quazi et al. 2011). The initial responses and success were promising. Considering the existing weakness of forest management and recognizing the relative success of the MACH project, the government of Bangladesh took similar initiatives in five forest PAs

² Poverty, over population, resource scarcity and over exploitation of natural resources are the common drivers.

and their buffer zones under the banner of the Nishorgo Support Project (Biswas and Chowdhury 2011) Most of the PAs of Bangladesh are part of a reserved forest (RF) and have been subject for years to massive exploitation by neighboring people for subsistence and income. One of the key challenges for the Nishorgo in these PAs was, therefore, to provide people with alternative income generating (AIG) options to reduce their dependency on forests and forest products. However, because the effort had limited financial resources it was impossible to bring the entire forest dependent community under the umbrella of AIG.

To promote participation in park management and decision-making the Nishorgo formed legal institutions named Co-management Councils and Co-management Committees (CMC) in each of the pilot sites, taking representatives from all stakeholder groups including representatives from government (GoB 2009). There were monthly meetings in these sites where members of the committee were informed any progress or initiatives taken in their respective PAs and could share their views, needs and/or any recommendations for better PA management. Some key experiences and lessons from three of these sites are briefly described below.

Local people's response to AIG initiatives in the Satchari National Park

The Satchari is one of the smallest but strategically most important PAs in the country. Its area is about 243 ha and it is one of the four PAs located in northeastern Bangladesh (Mukul et al. 2012). Because of its location and biodiversity richness, this PA deserves immediate attention from policy makers and PA managers. Before its gazettal as a 'national park' in 2005, it was part of the Raghunandan Hill Reserved Forest³. More than sixteen external villages and one internal village inhabited by the indigenous *Tripura*⁴ community had stakes at various levels in Satchari National Park.

The Nishorgo Program of the Forest Department developed a range of options and incentives for the people of the Satchari area. These were aimed mainly at regulating conventional forest use by the people living in the forests and in adjoining villages (Mukul et al. 2012). The Nishorgo apart from its CMC's created AIG options in the villages with major stakes, including support for cattle fattening, promotion of local *Tripura* handicrafts, pig rearing, support for aquaculture, vegetable gardening, nursery raising, training as eco-tour guide, and credit for purchase of rickshaw. Table 1 shows respondents' (N= 101) dependency on key forest products in the Satchari during 2006 and 2007 (Mukul and Quazi 2009).

Though these initiatives did not include all people dependent on Satchari, the experience showed that AIG activities delivered better results if they provided households substantial continuous

income and made them feel closer to local forest governance. In Satchari, for example eco-tour guide, support for nursery raising and inclusion in a community petrol group (CPG) were more effective than AIG strategies that ensured both conservation and development in the area. Inclusion as a CPG member creates a feeling of ownership of the PA that can work positively towards better PA governance (Mukul et al. 2012).

Working together for conservation in the Lawachara National Park

Lawachara National Park (LNP) is famous for its rich faunal and floral diversity, particularly for one of the largest populations of critically endangered *Hollock gibbons* in south-east Asia. The park is also inhabited by several indigenous communities including the *Khasia*⁵ and the *Tripura*, who enjoyed the usufruct right to use a limited forest area within the park for their traditional betel vine (*Piper betel*) and lemon (*Citrus limon*) cultivation. One of the *Nishorgo* initiatives in the park was recruitment of former illegal loggers as CPG members to reduce poaching of valuable timber from the park area. All the participants were paid lump sum remuneration and provided basic gear for protection service. The effort resulted in significant reductions in illegal forest activities and enriched floral and faunal biodiversity (Nishorgo Report 2007).

However, the enthusiasm and the efforts declined over time for several reasons, including absence of monitoring by CMC, lack of support from the project, and reluctance of field personnel belonging to the FD. Such limitations on implementation of co-management adversely affect governance. Fig. 2 shows illegal logging (no. of trees felled illegally) in LNP (blue line) compared with other *Nishorgo* pilot sites during four time periods. The number of trees illegally felled during 2003–2004 was about 1,200, highest amongst the pilot sites, and declined to about 400 during 2006–2007 (Mazumder et al. 2007). This positive trend in limiting biodiversity loss needs be sustained through the practice of good governance in PA management.

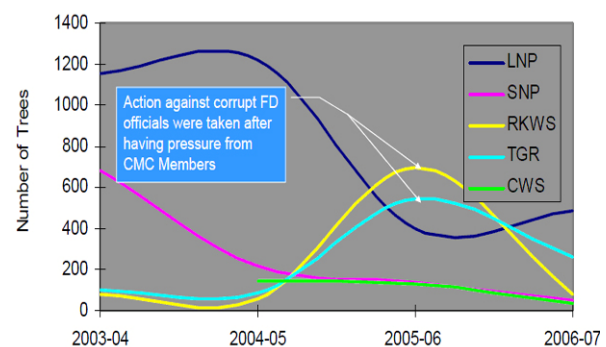


Fig. 2 Trends of illegal tree felling at different Nishorgo pilot sites (Mazumder et al. 2007)

³ According to Forest Act 1927 of Bangladesh 'reserved forest' are the forests where everything is prohibited unless permitted.

⁴ The Tripura's, also called as Tipra are the third largest tribal group of Bangladesh (after Chakmas and Marmas), and was originally from the Indian state of Tripura.

⁵ The Khasia are the Mongolite ethnic group, who descended to the Khasia hills and Jainta hills from Cherapunji and Shilong regions. The Khasias are one of the matriarchal tribes in Bangladesh.

Governance in protected areas: experience from Chunati Wildlife Sanctuary

Chunati Wildlife Sanctuary (CWS) is one of the oldest declared wildlife sanctuaries and is particularly important as it is the habitat and an important corridor for Asian elephants. A significant number of local peoples are directly or indirectly dependent on this sanctuary for their livelihood. CWS is part of the southern cluster of IPAC managed PAs where co-management is in practice from the NSP period. Currently two CMCs are in existence in CWS (one in Chunati Forest Range and the other in Jaldi Forest Range). While conducting in-depth interviews several issues and concerns were expressed that cross-cut the governance principles. The following responses of interviewees provide insight into the existing governance of CWS:

(1) Neither villagers nor FD field personnel were consulted during formulation and amendment of legal and policy documents introducing co-management. How can you expect consensus out of this? Participants and beneficiary selection were not done in harmony thus difficulties arose during implementation.⁶

(2) Local people have been apprised of their rights but they are not yet capable of securing benefits guaranteed by their rights. Vested interests of influential local groups need to be eradicated or ignored to create an environment in which disadvantaged people can have their say about their rights⁷.

(3) We have plenty of avenues to play a [significant] role in ensuring sustainable livelihoods for the forest dependent community although funding is a limiting factor. We cannot accommodate everyone who is in need of support. Such limitations are affecting the governance of CWS⁸.

(4) FD seems more positive in meeting the community people. Giving a legal basis to co-management is a positive movement toward good governance. They (policy makers) are also better motivated toward community conservation. Local government institutions such as Union Parishad⁹ must become CMCs to bring desired changes and success for sustainable PA management¹⁰.

Based on the physical follow up of the monthly CMC meeting, FGD, and in-depth interviews with stakeholders we identified challenges that CMC faces as a local institution and that have significant implications for governance. The major findings include:

(1) Co-management organizations, namely CMCs, were dominated by elite groups – often overshadowing the voice of the community. Although the number of CMC members was increased through Government Order (GoB 2009) to ensure more

representation of vulnerable groups (e.g. FUG, CPG, ethnic minorities, women), the impact was not clearly visible.

(2) Mutual trust and collective performance are required for good governance but were not found to have taken root in the study area. Local forest officials in general did not own the concept of co-management and this affected the smooth implementation of the programme. Monthly meetings were still arranged and initiated by the IPAC staff.

(3) Encroachment onto forest land and subsequent conversion to agriculture remained a major concern. This experience barred the active participation of forest-dependent people in co-management.

(4) Providing legal basis is believed to be a positive move toward good governance. It also reflects good intentions of the state agency in inviting shared governance. However, the relevant legal provisions (including acts, rules and policies) were not clearly and adequately disseminated and understood at the community level. This occasionally created conflict between FDs and communities. Furthermore, some key policy documents (notably the Forest Policy of 1994 and Social Forestry Rules of 2004 (amended in 2010) were still being revised and remained in a state of flux. There was also concern that the new amendment of the SF Rules of 2004 (amended in 2010) might facilitate a process of gradual shift toward control of a vast forest area by local political elites in the guise of ‘public-private partnership’.

(5) There remained a degree of ambiguity regarding the roles and responsibilities of FDs and CMCs in field operations, which conflicted with the notions of cooperation, transparency and accountability of the overall initiative.

The long term sustainability of the CMC was another major concern because the local institutional structures were still in a nascent stage, and the provisioning of resources (either internally or externally) remained somewhat uncertain. This significantly influenced the performance and contribution of the CMC members.

Conclusions and suggestions for improvement

Good governance is crucial for achieving both conservation and development goals. The cultural and socio-economic contexts of the respective country or location demands extra attention in this regard. There has been of late a major shift from the top-down approach to a people-centered management regime in various forms as reported from many countries (see for example Borrini-Feyerabend 2003). From the field experiences as well as from the feedback and views of the stakeholders, it is evident that co-management interventions in PAs have brought slow but visible changes: decentralized, site-specific and community based activities are gradually, and to varying degrees taking root in place of centralized, classical, custodial approaches to natural resource management. Households that were previously engaged in organized plundering of the local forests had begun to participate in forest protection. Communities also showed a greater degree of awareness regarding conservation attributes: this needs further and long-term nurturing to bring sustainable positive

⁶ Interview with a deputy Range Officer, Chittagong Wildlife and Nature Conservation Division, CWS.

⁷ Interview with a panel lawyer of BELA.

⁸ Interview with a CMC member

⁹ The lowest tier of the local government at Upazila level

¹⁰ Interview with Chief Research Officer, Bangladesh Forest Research Officer, Chittagong.

changes. To ensure long-term sustainability in conservation and better forest governance, it is essential to focus on socio-economic development of the communities living on forests and ensure equity in benefit sharing. Attitudinal changes of the Forest Department staff toward the shifting paradigm of PA management are crucial in this regard. To avoid conflict, and promote traditional livelihoods of the communities, it is necessary to allow people to harvest some forest products but to ensuring ecological sustainability (Mukul et al. 2010). Financial

and technical sustainability of the CMC's must be ensured through innovative mechanisms (i.e. continuous training for capacity building, provision of direct grants to CMCs; linking with external and internal funding agencies with funding through international negotiable instruments such as REDD) followed by constant supervision and monitoring. Finally legal and policy support to the consolidation of co-management practices is also imperative as this can pave the way for bringing better governance in PA management.

Table 1. Respondents collecting forest products from Satchari for sale in 2006 and 2007

Village	Timber*			Firewood			NTFPs		
	January 2006	January 2007	Change*	January 2006	January 2007	change*	January 2006	January 2007	change*
Tiprapara (n = 22)	1 (4.55)	0 (0.0)	-1 (4.55)**	6 (27.27)	2 (9.09)	-4 (18.18)	1 (4.55)	0 (0.0)	-1 (4.55)
Ratanpur (n = 16)	8 (50.0)	3 (18.75)	-5 (31.25)	5 (31.25)	4 (25.0)	-1 (6.25)	4 (25.0)	3 (18.75)	-1 (6.25)
Deorgach (n = 32)	6 (18.75)	7 (21.88)	1 (3.13)	3 (9.38)	4 (12.5)	1 (3.13)	2 (6.25)	3 (9.38)	1 (3.13)
Goachnagar (n = 33)	4 (18.18)	1 (3.03)	-3 (9.09)	2 (9.09)	2 (6.06)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	19	11	-8 (42.11)	16	12	-4 (21.05)	7	6	-1 (14.29)

* Values in the parenthesis indicate percentage of the sample collecting forest products from respective villages; ** Negative values imply positive changes and vice-versa; *** Percentage change of in respect to total people collecting forest products during 2006

References

- Appanah S, Ratnam L. 1992. The importance of forest biodiversity to developing countries in Asia. *Journal of Tropical Forest Science*, **5**(2): 201–215.
- Balloffet NM, Balloffet, Marin, Angela S. 2007. Governance trends in protected areas-experiences from the Parks in Peril Program in Latin America and the Caribbean (The Nature Conservancy, USAID), p. 46.
- Bangladesh Forest Department. 2011. Available at: <http://www.bforest.gov.bd/conservation.php> [accessed on 8 February, 2012].
- Berkes F. 2009. Community conserved areas: policy issues in historic and contemporary context. *Conservation Letters*, **2**(1): 20–25.
- Biswas G, Chowdhury AM. 2011. Protected area co-management lessons learned: co-management organization (CMO) perspective (Paper presented in the 1st Bangladesh Forestry Congress, held in 19–21 April, 2011, Dhaka, Bangladesh, Organized by BFD and MOEF).
- Borrini-Feyerabend G. 2002. Indigenous and local communities and protected areas: rethinking the relationship. *Parks*, **12**(2): 5–15.
- Borrini-Feyerabend G. 2003. Governance of protected areas-innovation in the air. *Policy Matters*, **12**: 92–101.
- Castro AP, Nielsen E. 2001. Indigenous people and co-management: implications for conflict management. *Environmental Science and Policy*, **4**(4–5): 229–239.
- Chape S, Blyth S, Fish L, Fox P, Spalding M. 2003. *United Nations list of protected areas*. Cambridge, UK: The World Conservation Union (IUCN), Gland, Switzerland, and UNEP-WCMC.
- Craig D. 2002. Recognizing indigenous rights through co-management regimes: Canadian and Australian experiences. *New Zealand Journal of Environmental Law*, **6**: 199–254.
- Cunningham EJ, Chassels M, Fox J, Mustafa MG. 2011. Introduction: Tailoring Collaborative Conservation in Bangladesh. In: Jefferson Fox et al. (eds), *Rural Livelihood and Protected Landscapes: Co-management in the Wetlands and Forest of Bangladesh*. USAID, Nishorgo Network, p. 204.
- DeFries R, Hansen A, Turner BL, Reid R, Liu J. 2007. Land use change around protected areas: management to balance human needs and ecological function. *Ecological Application*, **17**(4): 1031–1038.
- Dudley N, Parish J. 2006. Closing the gap-creating ecologically representative protected area system (CBD Technical Series: 24). SCBD, Montreal, Canada.
- Dudley N. 2008. Guidelines for applying protected area management categories. WCPA, IUCN.
- Ferrari MF. 2006. Rediscovering community conserved areas in south-east Asia: people's initiative to reverse biodiversity loss. *Parks*, **16**(1): 43–48.
- Fisher RJ. 2003. Innovations, Persistence and Change: Reflections on the State of Community Forestry. In: *The Community forestry current innovations and experiences*. Bangkok, Thailand: Regional Community Forestry Training Center (RECOFTC) and FAO-Regional Office for Asia and the Pacific (FAO-RAP), pp. 16–29.
- Food and Agriculture Organization of the United Nations (FAO). 2009. *State of the World's Forests 2009*. Rome, Italy: FAO.
- Ghimire KB. 1994. Parks and people: livelihood issues in national parks management in Thailand and Madagascar. *Development and Change*, **25**(1): 195–229.
- Glasbergen P. 2007. Setting the scene: The partnership paradigm in the making. In: Pieter Glasbergen, Frank Biermann, Arthur P J Mol (eds), *Partnerships, governance and sustainable development-reflection on theory and*

- practice. Edward Elgar Publishing Ltd, p. 314.
- Government of Bangladesh (GoB). 2009. Bangladesh Gazette No. pabana/parisha-4/nishorgo/105/sting/2006/398 dated November 11, 2009.
- Institute on Governance. 2002. Governance principles for protected areas in the 21st century. Discussion paper, Institute on Governance, p. 29.
- IUCN. 1994. Guidelines for protected area management categories. Cambridge, UK: IUCN.
- Jeanrenaud S. 2002. *People-oriented approaches in global conservation: is the leopard changing its spots?*. London, UK: International Institute for Environment and Development (IIED), and Brighton, UK: Institute for Development Studies (IDS).
- Kaimowitz D, Sheil D. 2007. Conserving what and for whom? Why conservation should help meet basic human needs in the tropics. *Biotropica*, **39**(5): 567–574.
- Kothari A, Pathak N, Vania F (eds.). 2000. *Where Communities Care: community-based wildlife and ecosystem management in South Asia*. Pune, India: Kalpavriksh, and London, UK: IIED.
- Kothari A, Singh N, Saloni S. 1996. *People and protected areas: towards participatory conservation in India*. New Delhi: SAGE Publications, pp. 276.
- Kozziell I, Saunders J (eds.). 2001. *Living off biodiversity: exploring livelihoods and biodiversity*. London, UK: IIED.
- Lockwood M. 2001. Good governance for terrestrial protected areas: A framework, principles and performance outcomes. *Journal of Environmental Management*, **91**(3): 754–766.
- Mazumder AH, DeCosse P, Sharma R, Ahmad IU. 2007. Forest conservation in Bangladesh: tracing its ebb and flow in recent decades, with observation for the future. Paper presented in international conference ‘The Future of Forests in Asia and the Pacific: Outlook for 2020’ held in October 16–18, 2007 at Chiang Mai, Thailand.
- McNeely J, Scherr S. 2003. *Eco-agriculture: strategies to feed the world and conserve wild biodiversity*. Washington DC USA: Island Press.
- Mukul SA, Quazi SA. 2009. Communities in Conservation: Changing protected area management and enhanced conservation in Bangladesh. In: Leslie RN (ed.). Proceedings of the international conference; ‘The Future of Forests in Asia and the Pacific: Outlook for 2020’ held in October 16–18, 2007 at Chiang Mai, Thailand. pp. 143–159.
- Mukul SA, Rashid AZMM, Quazi SA, Uddin MB, Fox J. 2012. Local peoples’ responses to co-management regime in protected areas: A cases study from Satchari National Park, Bangladesh. *Forest, Trees and Livelihoods*, **21**(1): 16–29.
- Mukul SA, Uddin MB, Rashid AZMM, Fox J. 2010. Integrating livelihoods and conservation in protected areas: understanding role and stakeholders’ views on the prospects of non-timber forest products, A Bangladesh case study. *International Journal of Sustainable Development and World Ecology*, **17**(2): 180–188.
- Mukul SA, Uddin MB, Uddin MS, Khan MASA, Marzan B. 2008. Protected areas of Bangladesh: current status and efficacy for biodiversity conservation. *Proceedings of the Pakistan Academy of Sciences*, **45**(2): 59–68.
- Nagothu US. 2003. Local people’s attitudes towards conservation and wildlife tourism around Sariska Tiger Reserve, India. *Journal of Environmental Management*, **69**(4): 339–347.
- Nepal SK, Weber KE. 1995. Managing resources and resolving conflicts: national parks and local people. *International Journal of Sustainable Development and World Ecology*, **2**(1): 11–25.
- Nishorgo Support Project (NSP). 2006. Protected Areas of Bangladesh: A visitor’s guide. Dhaka, Bangladesh: NSP.
- Nishorgo Support Project (NSP). 2007. Restoration of degraded forest habitat: Monitoring report Lawachara National Park, 2005–06 & 2006–07. NSP, NACOM.
- Orlovic-Lovren V. 2011. The role of education in protected area sustainable governance. *Management of Environmental Quality*, **22**(1): 48–58.
- Ormsby A, Kaplin BA. 2005. A framework for understanding community resident perceptions on Masoala National Park, Madagascar. *Environmental Conservation*, **32**(2): 156–164.
- Pimbert MP, Pretty JN. 1995. Parks, people and professionals: putting participation into protected area management (Discussion paper No.57, UNRISD, Geneva), p. 49.
- Poffenberger M. 2000. *Communities and forest management in South Asia: A regional profile of WG-CIFM the Working Group on Community Involvement in Forest Management*. IUCN (International Union for Conservation of Nature and Natural Resources), p. 161.
- Quazi SA, Bushley BR, Miles WB. 2008. Introduction: participation and the collaborative management of protected areas in Bangladesh. In: Jefferson Fox et al. (eds). *Connecting Communities and Conservation: Collaborative Management of Protected Areas in Bangladesh* (East West Center, USAID), p. 282.
- Roy MK, DeCosse P. 2006. Managing demand for protected areas in Bangladesh: poverty alleviation, illegal commercial use and nature recreation. *Policy Matters*, 94–102.
- Scherr SJ, White A, Kaimowitz D. 2004. A new agenda for forest conservation and poverty reduction-making markets work for low-income producers. Washington DC, USA: Forest Trends; , Bogor, Indonesia: CIFOR; Cambridge, UK: IUCN.
- Sharma R, DeCosse P, Khan M, Mazumder A. 2005. Co-management of protected areas in South Asia with special reference to Bangladesh. Dhaka, Bangladesh: Nishorgo Support Project.
- WCPA (World Commission on Protected Areas). 2005. *WCPA strategic plan 2005–2012*. Cambridge, UK: IUCN.
- Wells MP, Mchane TO. 2004. Integrating protected area management with local needs and aspirations. *Ambio*, **33**(8): 513–519.
- World Resources Institute (WRI). 2007. Earth trends: the environmental information portal. Available at: <http://earthtrends.wri.org>.
- Zashimuddin M. 2004. Community forestry for poverty reduction in Bangladesh. In: Sim HC, Appanah S, Lu WM (eds.), *Forests for Poverty Reduction: Can Community Forestry Make Money?* Bangkok, Thailand: FAO-RAP, pp. 81–94.