

Community's Perception and Involvement in Co-management of Bhawal National Park, Bangladesh

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ABSTRACT

Natural forests in Bangladesh have been severely degraded due to over exploitation, encroachment, fire, uncontrolled and wasteful commercial logging, illegal felling, overgrazing, and the collection of fuel wood to support the energy needs of a large population. This paper investigated the livelihoods of local people and their involvement in management of Bhawal National Park. Based on primary and secondary data, it revealed that community in the study area was heavily dependent on forestry-related activities to support livelihoods. Local community participation in ecotourism activities and resource protection and in protected areas can be pursued through collaborative management. At present, the natural resources of the park are degrading due to indiscriminate use by the locals and visitors mainly in the form of encroachment and tourism incompatible activities. The local community was left out in decision making process where the core problem still not addressed. This study also investigated the problems that affected natural resources and local community involvement in management to mitigate such problem. Results showed that the relationship between the local community and park administration is not significant where their participation in the management is minimal. In overall the study provides the premises where the local community supported their participation in the decision making process and participate in management for a better stewardship of the park.

Keyword: Community, Perception, Co-management, Bhawal National Park, Bangladesh

INTRODUCTION

A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base. Many of the world's protected areas (PAs) are important not only for their biodiversity, but also for their natural resources that many local people rely on for their livelihoods. Many people believe that without the active involvement of local people in forest management and increased economic incentives for their collaboration in conservation, there is little chance for PAs to be conserved and local resources to be sustainably managed.

People also argue that the conservation of biodiversity in PAs will be more challenging if local communities are heavily dependent on these areas for energy, nutrition, medicine, and other subsistence needs. Biodiversity conservation planners need to take into consideration the needs of local people, presence or absence of income sources, livelihood issues, and dependence on the forest and forest resources. In the context of Bangladesh, it is very difficult to involve local people in conservation efforts without providing them with some direct and tangible benefits - either benefits in kind or cash for their involvement.

Community collaboration in decision making process is increasingly being sought in the development and management of protected areas. Meanwhile, in promoting both the quality of life of the people and the management or conservation of resources such as in ecotourism able to recognize the direct involvement of local communities. The systems of conserving the landscapes have evolved as a result of interactions between people and nature exists in all national forests in England and Wales and some in Germany and other countries in Europe. In ecotourism, the locals who live in nearby or within the protected area have benefited from its development where it requires local community participation in its various activities and services. This has improved their livelihood by participating in the businesses that have expanded. In some cases, forest management has often keep local people out, following the view that human activities are incompatible with ecosystem conservation. Of late however, it is widely acceptable that due to the management limited capacity

local communities can play an effective role in assisting forest management to achieve sustainable use of the area. Here, the locals are considered important as the direct stakeholders and able to participate in the management in ensuring the sustainable use of resources. Cater (1994) and Lumpkin (1998) suggested that local communities could play an active role in ecotourism industry, and they could even take more responsibility in managing local ecotourism sector.

Public participation assists in identifying and understanding the communities' interests and provides an avenue to integrate social and environmental concerns into the decision-making process and thereby make decisions that support sustainable development. It also provides a means to manage social conflicts by bringing different stakeholders together. In addition, the following benefits can be obtained from community participation, namely (a) It can increase the effectiveness of activities that are based upon local knowledge and understanding of problems and therefore be more relevant to local needs, (b) It helps to build local capacities and develop the abilities of local people to manage and to negotiate activities, (c) It can identify key stakeholders who will be most affected by the activities, (d) It can help to secure the sustainability of the activities as people assume ownership and (e) It can help to improve the status of women by providing the opportunity for them to play a part.

BACKGROUND OF BHAWAL NATIONAL PARK

Protected areas in Bangladesh cover some 272,490.49 hectares, or about two percent of the country's total area. There are 17 national forests and 17 wildlife sanctuaries. Bangladesh's national forests can be defined as relatively large areas of natural beauty where the flora and fauna are protected and preserved for the enjoyment and education of the public. Himchari National Forest of Cox's Bazar was declared as the first national forest in Bangladesh in 1980 in order to conserve the biodiversity of that area. All protected areas, including national forests, are managed by the corresponding Forest Divisions at the district or sub-district level, which are under the supervision of the Forest Directorate of the Ministry of Environment and Forests (MoEF). Bhawal National Forest in Gazipur District was established to preserve an important ecosystem and to create opportunities for recreation, education, and research. BNP is noted for its coppiced sal (*Shorea robusta*) forests. It is located about 40 kilometers north of Dhaka city and is situated along the Dhaka-Mymensingh Highway (between approximately 230 55' to 240 00' north latitude and 900 20' to 900 25' east longitude). The forest offers a serene reprieve from the bustle of the city for Dhaka's residents, as well as a taste of the vast sal forests that once ran nearly uninterrupted from Dhaka to Mymensingh in northern Bangladesh.

The land that now comprises Bhawal National Forest was formerly the private hunting grounds of the Bhawal king. In 1950, this forest area was nationalized and put under the jurisdiction of the Forest Department in order to improve its management. The area comprising Bhawal National Forest covers approximately 5,022 hectares. It was declared a protected area through the Bangladesh Wildlife (Preservation) Order of 1973, which was subsequently amended to become the Bangladesh Wildlife (Preservation) (Amendment) Act of 1974. Bhawal National Forest was declared on May 11, 1982 (as per Gazette Notification Number II/For-66/88/318 dt.11.5.1982), and includes eight *mouzas* (smallest unit of land according to the settlement department of Bangladesh) of Gazipur District. Bhawal National Forest was managed under the Dhaka Forest Division until January 2008, when it was handed over to the Wildlife Management and Nature Conservation Division of Dhaka. Overall responsibility for the forest is assigned to the Divisional Forest Officer (DFO), while one Assistant Conservator of Forests (ACF) is designated as the officer in charge of the forest.

BNP has some unique features compared to other protected areas of the country, in terms of its (1) proximity to urban areas; (2) encroachment by diverse populations; (3) the prevalence of private land within its boundaries; and (4) pressures from rapid industrialization. These differences are discussed in more detail below. Most national forests in Bangladesh are situated far from major urban centers. BNP is the only one that is located close to the capital city of Dhaka. This proximity renders it vulnerable to a number of influences that most other forests do not face. In particular, while the management of most national forests is influenced by the political priorities and affiliations of local leaders and elites, national political parties and leaders also influence BNP,

with strong connections to local leaders and economic interests. These national influences frequently interfere in the management activities of the forest.

In addition, compared to other national forests, the local population living in and around BNP is highly heterogeneous with diverse backgrounds and occupations, including a combination of long-standing local residents, recent settlers, and nonpermanent residents from different parts of the country who have migrated from other rural and urban areas and have settled in the buffer zone. Furthermore, there are different ethnic communities, such as the Kuch, who live within the forest boundaries. One of the impacts of BNP's diverse population and its proximity to Dhaka is the pressure for private land for agriculture within the forest. BNP is the only protected area in the country with private land inside its boundaries (see Figure 1). Specifically, within the forest there are pockets of private land known as *baid* lands (lowland areas where paddy agriculture is practiced). There are agricultural lands within other PAs, but the ownership of those lands is vested in the government through the FD. In BNP, the FD has no authority over the management of the private lands.

Another consequence of BNP's proximity to the urban area of Dhaka, as well as its incorporation of private land, is the presence of a large number of industries located in and around the forest. In fact, it is the only national forest in Bangladesh with industries inside the core area of the forest, where a denim and a spinning mill are currently operating. In addition, there are more than 150 industries in the buffer zone and the areas immediately surrounding the forest, with thousands of workers from these industries residing in the buffer zone area.

Bhawal National Forest contains two forest ranges: the National Forest Range and the Bhawal Range. The National Forest Range contains three beats (Forest, Baupara, and Bankharia), while the Bhawal Range has four beats (Rajendrapur West, Bishawakuribari, Baroipara, and Bhabanipur). For management purposes, BNP is divided into two zones a core area and a buffer zone area. The core zone is the area where extensive protection measures are taken. Specific economic activities, such as the setup of industries, the extraction of all sorts of forest products, and the planting of exotic species, are prohibited. However, all of the above activities are allowed in the buffer zone area. Only the Forest Beat is designated as the core zone and the rest of the beats are located in the buffer zone.

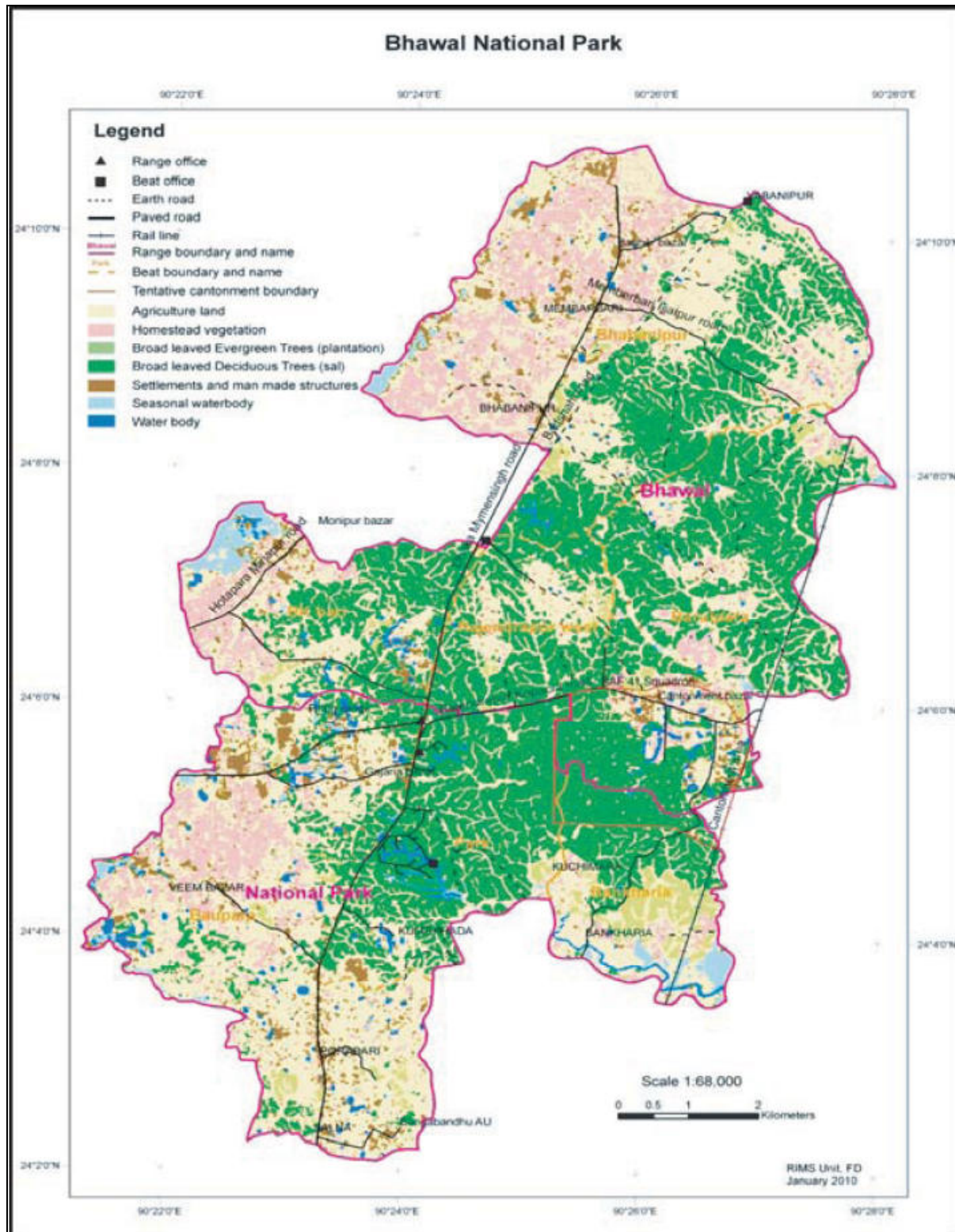


Figure 1: Map of Bhawal National Forest

A large number of visitors come to BNP during the winter, mainly to enjoy picnics and observe nature. The Government of Bangladesh earns considerable revenue from the forest. In 2010, gate receipts totaled BDT 8,810,000 (USD 124,000) from about 10,000,000 visitors, an amount that nearly doubled in 2011 to BDT 15,150,000 (USD 214,000). Visitors walking through the forest often disturb wildlife because they are not restricted to footpaths and designated areas. They go everywhere, including sensitive wildlife areas. In fact,

there are too many visitors, more than the forest can sustain. Extensive fuelwood collection, a major and very visible activity in Bhawal National Forest, is another practice that poses a threat to forest biodiversity. While this activity occurs year round, extraction is most intense during the dry season. Fuelwood is collected for both household consumption and commercial purposes. Most of the collectors are adults, both male and female, and adolescent boys. Most collectors are poor and supplement their income by selling fuelwood.

Encroachment is one of the main reasons for forest habitat degradation. This occurs through the expansion of agricultural lands, the development of new settlements, and the establishment of industries, such as garment manufacturers, spinning mills, and dyeing, pharmaceutical, and poultry feed industries. Almost 70 percent of the forest habitat has been destroyed due to such practices over the last four to five decades. As mentioned above, there are extensive small pockets of private land inside the national forest. The most critical issue arising from this occurs when private landowners sell their plots to industrialists who then establish industries. As a result, conflicts arise between FD officials and local people over land use, particularly with owners of disputed lands. Ground fires are a common phenomenon in Bhawal National Forest as well. These are usually set by local people to facilitate the collection of fuelwood. Due to ignorance about the conservation of forest resources, people employ such practices without thinking of their short- and long-term detrimental effects. Fires destroy flora, kill subsoil insects and other fauna, and disrupt the balance of the ecosystem. Many medicinal herbs and shrubs have all but disappeared due to such practices. Attempts to increase forest biomass through timber tree plantations, often with exotic monocultures, were carried out by the FD through the planting of fast-growing trees of short rotation. They also planted bamboo and cane species as undergrowth. Because encroachment is a major problem, fast-growing species were selected to cover the area, and thereby resolve the encroachment problem. However, these reforestation efforts pose their own threat to the diversity of both plants and animals in the forest.

Different resource users also collect various other resources from Bhawal National Forest. People living in the villages adjacent to the forest harvest vegetables and fruits from the forest. They mainly collect these fruits for their own consumption; in addition, local people sometimes hunt jungle fowl and wild boar for household consumption.

METHODOLOGY

To conduct this study, both primary and secondary data used. Convenient sampling with structured interview questionnaires was used. The respondents included in this survey were forest staff, local people working in the forest and local communities from the three neighbouring villages. The representativeness of the sample was based on comparison with available demographic data and consultation with local informants.

RESULTS AND DISCUSSION

Existing Livelihoods of study area

The livelihood conditions of local people were analyzed in terms of sources of cash income for households in the study areas. The primary source of income was defined as the income that contributed more than half of the household's earnings. Primary occupations are forestry-related (55%). Among respondents, 16% are farmers (agriculture cultivation), 9% were day laborers, 7% were engaged in business, 7% worked in the non-governmental sector, 1% are in government service, and 5% are engaged in jobs under the category of 'other', which includes van driver, truck driver, blacksmith, grocer, hotel owner, and a variety of other occupations.

For the household survey, It categorized the households into four different income classes based on monthly income: extremely poor (1,999 BDT), poor (2,000-4,999 BDT), medium class (5,000-7,999 BDT) and rich (8,000 BDT). It found that more extremely poor and poor people live in this area the majority of local people in the study area depend on natural resources for their livelihood activities. Traditionally, local people collected various

resources from national forest forests. People extract wood, fuelwood, bamboo, and cane from forests both to meet their household's needs and for sale as an additional income to support and supplement their livelihoods.

Different NGOs and banks provide micro-credit to local people for small business, livestock rearing, fish cultures, poultry, and other alternative income generating activities. Bank loans are provided in order to support income generating activities for poverty reduction and rural development. For example, banks will encourage income generating activities with seed money for agriculture and handicrafts. Most women in the study area are involved in NGO credit programs. Some of these organizations are also working on issues such as mass education, health and sanitation, and women's development. Although these organizations and activities are providing important support, respondents expressed that these activities were not sufficient to support their livelihoods.

Statements which are concerned with the relationship of forest administration namely (i) forest administration meets and discusses about the ecotourism activities/issues with local community (Mean: 1.52); (ii) forest administration discusses and gets opinions from local community in revising ecotourism operations (Mean: 1.45); (iii) forest administration shares their latest information with the local peoples for the development of BNP (Mean: 1.55); (iv) local peoples can freely share their knowledge and opinions about steps/arrangements in service delivery (Mean: 1.57) and (v) forest administration gives technical support to those locals who want to enhance their skill in ecotourism delivery (Mean: 1.60) showed poor score (Mean score is between 1.45 to 1.67) indicating their disagreement with the statement.

The other two statements, i.e. (i) local peoples are not responsible for taking care of the well-being of forest resources including their protection (Mean: 4.35) and (ii) with the coordination of forest administration, local peoples have the autonomy to arrange ecotourism activities (Mean: 4.10) are supported by them indicating their responsibilities and freedom in relation to forest administration. In line with these findings, Cihar and Stankova (2006) found that the relationships of residents to the Podyji NP itself and NP administration were sometimes different and not always favorable.

Dependence of Households on Forests

Results from this study reveal that in the village of study area, 82% of households engage in forestry activities inside national forest forests, while 18% do not engage in such activities. Fuel wood is collected from national forest forests by 75% of households for daily consumption and also for sale. The rest of the households interviewed do not collect fuel wood from the forest; instead they collect fuel wood from other locations, such as their own homesteads (11%); lands near the national forest (7%); or at a market (7%). In addition to fuelwood, It also found 20% of households collect wood and that 18% collect fruits and leaves from forests.

Study indicated that the level of dependence of local people on forest resources is high and that forest-related activities are the major income source for most local people. Dependence on the forest is not new; it is custom.

Participation of Local community in Forest Management

Local community participation in national forest management is a very important issue nowadays for various reasons including the protection of resources and ecotourism. In relation to this management concept, it was an important objective of this study to know the level of participation. The mean scores of perceptions of the respondents indicate that there is no participation of local community in the forest management. Most of the respondents were strongly disagreed with the statement containing their participation such as (i) forest administration meets and discusses about the ecotourism activities/issues with local community (Mean: 1.55); (ii) forest administration discusses and gets opinions from local community in revising ecotourism operations (Mean: 1.45); (iii) forest administration shares their latest information with the local peoples for the development of BNP (Mean: 1.50); (iv) local peoples can freely share their knowledge and opinions about steps/arrangements

in service delivery (Mean: 1.57). However, some of the local peoples are working in the national forest for the tourism services. This arrangement is not officially documented and accepted due to the existing protected area management policy of the government. They are not directly participating in the forest management. Cihar and Stankova (2006) found similar results and added that the resident had no real participation in the process of planning and decision making of Podyji NP in Czech Republic. Contrastingly, in Annapurna, Nepal, locals are also involved in planning and decision making, in addition to accommodation and food services and thus generating income and ensuring their local ownership (Nyaupane et al., 2006).

Respondents' of this area shown relationship with forest management based on their education level. Kruskal-Wallis test shown that there is significant difference in perception that forest administration gives technical support to the locals to enhance their skill in ecotourism delivery ($\chi^2=10.321$; $p=0.035$). Higher education seemed to realize the technical support given to them than that of lower educated respondents. Similarly, there are significance differences in perceptions of respondents who live at different distances from the forest such as (i) forest administration meets and discusses about the ecotourism impacts upon local community ($\chi^2=11.107$; $p=0.025$) and (ii) discusses and gets opinions from local community in revising ecotourism operations ($\chi^2=10.312$; $p=0.035$). Hence, respondents who live closer to the forest could easily be familiar with the activities of the forest compared to those who live further away.

In the national forest, local peoples occupation include those who work as food suppliers, tourists' transportation and as nature tourist guides who are able to recognised their relationships with the forest. The statements such as (i) local peoples can freely share knowledge and opinions about steps/arrangements in service delivery ($\chi^2=17.778$; $p=0.001$); (ii) local peoples are responsible for taking care of the well-being of forest resources including their protection ($\chi^2=12.104$; $p=0.017$) and (iii) forest administration gives technical support to those locals to enhance their skill in ecotourism delivery ($\chi^2=21.552$; $p=0.000$) showed significant differences in perception of respondents having different forest-related occupations. Here, people with better socio-demographic background, forest staff and locals who works in the forest have clearer views about the forest due to their involvement in various forest's activities.

CONCLUSION AND RECOMMENDATION

PAs play an important role in the conservation of forests, the maintenance of biological diversity, and the protection of ecosystem services. However, when local people are dependent on forests that lie within PAs it is important that they are actively involved in forest management. Local communities living near and within national parks often have important and long-standing relationships with these areas.

In many places in the world, forest resources are important for people's livelihoods and their cultural survival (Khattak 2002). The primary purpose of this study has been to learn about the livelihoods of local people living in this National Park and better understand their dependence on the park's forests as well as their past and present involvement in the management of forest resources.

In light of past and current struggles with co-management, following recommendations must be considered for Bhawal National Park:

1. Alternative income generating activities, such as cultivation of bamboo and cane, handicraft making, medicinal plant nurseries, poultry, bee cultures, and cattle rearing can help improve the livelihoods of local people and reduce dependency on forest.
2. For reduce dependency on forest for Fuel wood, efficient stoves should be promoted.
3. Homestead plantation activities should be promoted to reduce dependence on national park forests.
4. A habitat restoration and forest rehabilitation program employing local people should be implemented to restore degraded areas in the park.
5. Ecotourism should be introduced by developing publicity activities (colorful posters, booklets, and postcards), eco-cottages and other tourist facilities, guide vehicles, and certified eco-guides. In this way eco-

tourism could potentially become another income-generating activity for local people. However, much care must be taken with eco-tourism to ensure that local people and ethnic minorities, rather than more wealthy and connected outsiders, are the beneficiaries.

REFERENCES

- Abdullah, M. Amat Ramsa, Y. Shamsor Nahar, Y. and Kuen, I.K. 2000. The Relevance of Protected Areas and Biodiversity to the Quality of Life of Local People. *The Malaysian Forester*. 63(3): 126-135
- Abdullah, M. Yip, H. W. and Amat Ramsa, Y. 2008. Ecotourism Co-Operative Management for Resources Protection of Taman Negara National park , Malaysia. *The Malaysian Forester*. 71(1): 65-69
- Abdullah Mohd et al. 2008, The Management of Bhawal National Park, Bangladesh by the Local Community for Resource Protection and Ecotourism, *Asian Social Science*, Vol: 4, No.: 7
- Borrini-Feyerabend G., T.M. Farvar, J. C. Nguinguiri, and V. A. Ndangang 2000. Co-management of Natural Resources. IUCN: Gland, Switzerland and Cambridge, UK.
- Carney. D. 1988. Implementing the Sustainable Rural Livelihoods Approach. In *Sustainable Rural Livelihoods: What contribution can we make?* Paper presented at the Department of International Developments Natural Resources Adviser's Conference, edited by D. Carney. London: DFID.
- Cihar, M. and Stankova, J. (2006). Attitudes of stakeholders towards the Podyji/Thaya River Basin National Park in the Czech Republic. *Journal of Environmental Management*. 81: 273-285.
- FSB (2000). *Forest Statistics of Bangladesh*. Bangladesh Forest Research Institute, Chittagong, Bangladesh.
- GOB (Government of Bangladesh). 2007. *Lessons Learned from Co-Management under Nishorgo and Guidelines for Adapting Co-Management to other Protected Forest Areas*. Forestry Department. Dhaka. Bangladesh.
- GOB (Government of Bangladesh). 2006. *Participatory Sal coppice Management: Bulletin No. 6*. Forestry Sector Project. FD. Dhaka. Bangladesh.
- IPAC (Integrated Protected Area Co-management project) 2009. *Site-Level Field Appraisal for Forest Co-management: IPAC Madhupur Site*. Bangladesh: International Resource Group (IRG).
- Little, P.D. 1994. The link between local participation and improved conservation: A review of issues and experiences. In Western, D. and Wright, R.M. (Eds.), *Natural Connections: Perspectives in Community-based Conservation*. Washington DC: Island Press.
- Mesozeza and Janaki R.R. Alavalapati. 2004. Forest Dependency and its implications for Protected Areas Management: A case study from the Nyangwe Forest Reserve, Rwanda. *Scandinavian Journal of Forest Research*, 19 (suppl.4).
- Mukul, S. A., M. B. Uddin, M. S. Uddin, M. A. S. A. Khan, and B. Marzan 2008. Protected areas of Bangladesh: current status and efficacy for biodiversity conservation. *Proceedings of the Pakistan Academy of Sciences* 45(2): 59-68.
- Sharma, R., P. Decosse, M. Roy, M. Khan, and A. Mazumder 2006. *Co-management of protected areas in South Asia with special reference to Bangladesh*. Dhaka: Partner Report, Nishorgo Support Project (with FD, USAID and IRG).