

# Co-management approach and its impacts on social, economic and ecological developments: Lessons from Lawachara National Park, Bangladesh

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Received: May 15, 2015; Accepted: June 27, 2015

Communicated by: Dr. A. Z. M. Manzoor Rashid, Shahajalal University of Science and Technology, Bangladesh

## ABSTRACT

Illegal forest activities are one of the major challenges to forest management and conservation in tropical developing countries. In order to prevent this, the Government of Bangladesh, with support from some national and international organizations, has taken the initiative of community based forest management in some protected areas of the country. Lawachara National Park is one of the pilot sites where several co-management interventions, namely Nishorgo Support Project, Integrated Protected Area Co-management and very recently Climate Resilient Ecosystems and Livelihoods (CREL) program have been undertaken. This paper highlights the initial goals and objectives of two of these programs and impacts of co-management on social, economic and ecological aspects of the park and people in the area. Both programs positively influence species richness and abundance in the park area, encourage people for forest conservation through economic incentives, and ensure local participation in park governance. Inadequate support from the project, lack of coordination among different stakeholders, and limitations of the Forest Department, however, controlled the development of co-management projects in the area.

**Key words:** governance, rural livelihood, stakeholders, protected area, Bangladesh

## Introduction

Illegal forest activities including logging, land encroachment and deforestation are among the major threats to forest management and conservation in tropical developing countries (FAO 2009; Tacconi et al. 2003). In tropical regions, poverty and inequality influence rural people to be engaged in illegal forest activities (Hirakuri 2003; Kaimowitz 2003). Globally, the annual market losses from illegal logging is about US\$10 billion, with governments losing an additional US\$5 billion in revenues (WWF 2015). Though the underlying factors responsible for illegal forest activities and its impacts on people, biodiversity and national economy are poorly

understood and rarely investigated, there are a plenty of opinions and speculations (see – Tacconi 2007; Tacconi et al. 2003; Kaimowitz 2003). Illegal forest activities are responsible for the losses of social capital, ecosystem services and benefits and collapse in country's forest production and revenues in the long run (Kaimowitz 2003).

Forest law enforcement is thought to be the first important step to control illegal activities in forests (DFID 2007; Inoguchi et al. 2005). Unfortunately, poor forest dwellers are however are the first victims of existing forest law application (DFID 2007). Local forest dependent people are also the first victims of changes in forest quality and supply of forest products (Sohel et al. 2015; Mukul et al. 2012). In south Asia, community participation in local forest management has brought substantial positive impacts on forests in terms of conservation and management (Mukul et al. 2015, 2012, 2010; Mukul and Quazi 2009). As a consequence, governments together with national and international donor organizations increasingly supporting co-management in forest protected areas (PAs) in the region (Mukul et al. 2014; Rashid et al. 2013a).

## Highlights

- Co-management approaches are becoming common for management of tropical forests;
- Co-management positively influence local biodiversity and people's conservation attitudes in Bangladesh forest protected areas;
- Lack of coordination among different forest stakeholders and managers limits the success of co-management .

The concept of co-management or collaborative management is defined as "a situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or set of natural resources" (Borrini-Feyerabend et al. 2000). An effective co-management approach will help build a successful link of socio-economic and ecological incentives and sustainable biodiversity conservation (Sharma 2005). A fair and equitable sharing of cost and benefits is therefore prerequisite for a successful co-management initiative.

This paper highlights the goals and objectives of two major co-management programs, namely Nishorgo Support Project (hereafter referred as to NSP) and Integrated Protected Area Co-management Program, (hereafter referred as to IPAC) for forest PAs of Bangladesh. Particular emphasis was given on project's social, economic and ecological impacts. Major limitation and drawbacks of the projects were also identified with recommendations for future better management.

### History and context of NSP and IPAC

The government has initiated the community based forest management program in five pilot PAs in Bangladesh with the purpose of restricting forest degradation and improving livelihoods of local communities (Rashid et al. 2013b). The project was administered by the Ministry of Environment and Forests (MoEF), funded by the United States Agency for International Development (USAID) and implemented by the International Resources Group (IRG) and allied local non-government organizations (NGO). The project was launched in 2004 and ran until 2007, and re-launched again in 2009 as IPAC. During implementation of the projects, several initiatives were undertaken to ensure active involvement of local people. One of the main initiatives was providing economic incentive in the form of alternative income generation (AIG) options like nursery raising, fisheries and livestock and poultry rearing (Mukul et al. 2014). The local people were also involved in forest patrolling and eco-tour guides, etc. (Mukul et al. 2012).

### Goals and objectives of NSP and IPAC

NSP was first initiated with the goal of engaging local people in co-management approach to develop the PAs of Bangladesh. The broader objective

was to support the Forest Department (FD) and local stakeholders in managing, protecting, rehabilitating and conserving forest and ecosystems, and construct a collaborative partnership among stakeholder based on shared rights and responsibilities on forests and PAs (Sharma 2005).

Along with USAID, FD and IRG, three local NGOs took part with NSP for implementation of the project. These are Community Development Center (CODEC), Nature Conservation and Management (NACOM), and Rangpur Dinajpur Rural Service (RDRS), subcontracted by the IRG. The Wildlife Trust Bangladesh (WTB) was also a partner and stakeholder of the project. The Bangladesh Environmental Lawyers Association (BELA) joined the project in 2007 with the aim of updating the existing Wild Life Preservation Act 1974 (amended) (Khan 2008).

According to Sharma (2005), the main objectives of the NSP were as follows:

- Develop a functional model for formalized co-management of PAs;
- Create alternative income generation opportunities for key local stakeholders;
- Develop policies conducive to improved PA management and build constituencies to further these goals;
- Strengthen the institutional systems and capacity of the FD and key stakeholders;
- Develop infrastructure facilities within PAs;
- Restore and manage habitats.

In 2008, IPAC project was started at LNP. It was built on following the lessons learned and strong foundation launched by NSP, with the support of USAID and FD. IPAC was committed to carry forward the integration of co-management in forested areas done by NSP (IPAC 2008).

According to the IPAC work plan (IPAC 2008), it consists the following three main components:

- Developing a systematic plan of action regarding integrated protected areas' biodiversity conservation through co-management approaches as well as improving other strategies like constituency building, policy analysis and strategy development. Developing advancement in visioning and expanding communication strategy with the aim of awareness building;

- Engaging stakeholders and increasing their institutional capacity through various ways like managing training for national and local level staff of the government of Bangladesh, NGOs' and local communities; improving existing training centres by providing new and practical training courses; and formulating local assistance for participatory co-management approaches;
- Developing particular strategies of co-management approaches for different protected areas with the objective of land testing and institutionalization of proven co-management approaches in current and new aquatic and terrestrial protected areas.

The particular objectives and purpose of IPAC described in the IPAC work plan (IPAC 2008) were as follows:

- Provide technical advisory services to GOB environment, forestry and fisheries departments to support the further development of the natural resources sector and the conservation of biodiversity;
- Develop a protected area strategy that applies to all ecologically and economically significant areas, including those outside of freshwater and forest ecosystems;
- Build technical capacity within national and local level institutions for PAs co-management;
- Expand the geographic area of Bangladesh under site specific implementation of co-management to ensure the long-term success of the co-management model and to extend socio-economic benefits to surrounding communities, including increased access to improved drinking water supplies and to opportunities for AIG;
- Address within IPAC a series of short, medium and long term climate change mitigation and adaptation issues.

### The case study site

This study used Lawachara National Park (LNP) as the case study site (Figure 1). LNP has an area of about 1250 hectares, and is one of the five pilot PA sites in Bangladesh, where co-management system was introduced through NSP (Rashid et al. 2013a). It is a part of the West Bhanugach Reserved Forest and was declared as national park in 1996 (Mukul 2008). According to Alam (1988) the forest originally supported an indigenous vegetation cover

of mixed tropical evergreen forest, although almost all of the original forest cover has been removed and the forest of the area has now turned into a secondary forest. The park supports approximately 167 plant species, 4 species of amphibians, 6 species of reptiles, 246 species of birds and 20 species of mammals (IPAC 2012).

LNP is a distinctive example of forest-people interactions since several indigenous communities, including *Khasias*, *Tripuras* and Garo are living within or around the forests (Mukul 2014). LNP and surrounding forests supports 30 villages, of which five are located within the park and the rest lie on the boundary of the park (Haider and Kabir 2014). Surrounding villages are entirely or partially dependent on the resources from LNP (Mollah et al. 2004).

### Results and discussion

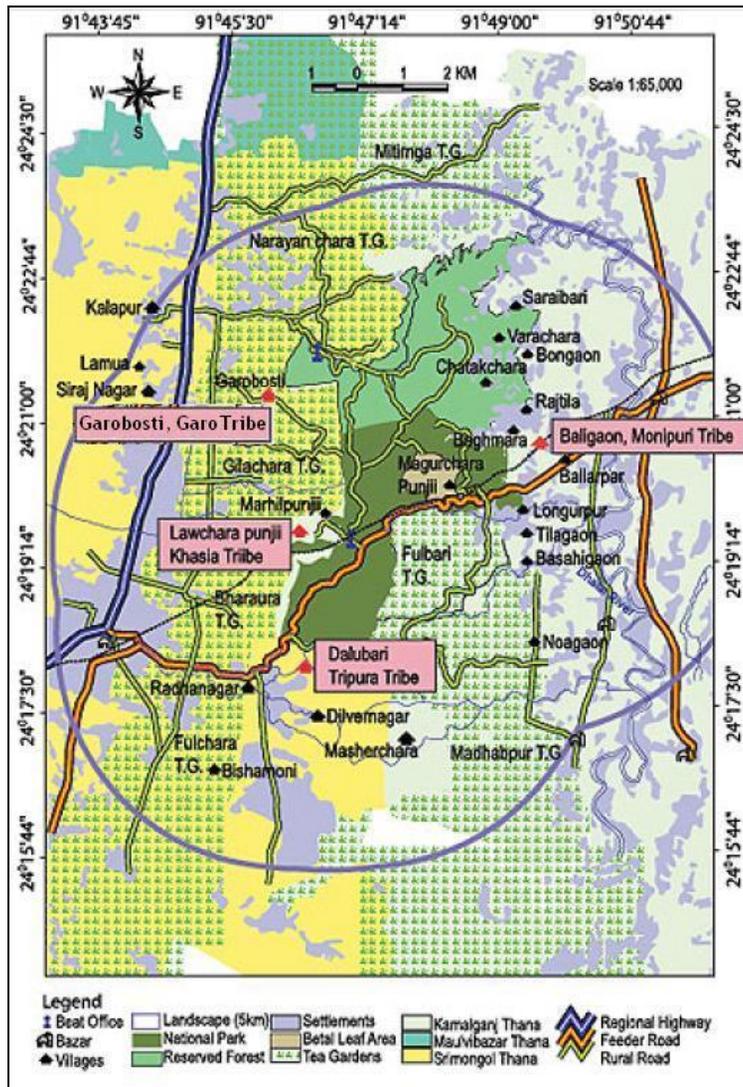
#### *Impacts of co-management programs on different forest management aspects at LNP*

Generally, conflicts with local people in conservation approaches arise when local people are forced to use resources outside the conservation areas (Chowdhury et al. 2014). Such occurrences are responsible for developing rivalry between managing body and local communities. And this rivalry ultimately results in unsuccessful implementation of the strategies and/or failure of the biodiversity conservation programs (Chowdhury 2014). According to the work plan of NSP and IPAC, the situation can be worsened if the local people were kept away from using the forest resources. That is why they were taken in resource management decisions and implementations. And the new approach was welcome by the local people as they started to consider that forest is their own property and it should be managed properly so that they can use it for a longer time (Haider and Kabir 2014).

Co-management approaches brought various positive as well as negative impacts on LNP (Uddin et al. 2007). A detail of the changes regarding social, economic and ecological conditions of LNP is discussed hereafter.

#### i. Forest conservation

In LNP, species richness and abundance have been found to be increasing in the core zone and the dense area of the park since people interference has been reduced in these areas (Haider and Kabir 2014). The number of herb, shrubs, creepers and undergrowth



**Figure 1.** Location map of Lawachara National Park, with indigenous communities living inside the park (Source: NSP 2007)

trees has also found to increase. Reduced disturbance and natural condition have initiated natural vegetation in some parts of the park. Though the forest villagers thought that the quality of resources decreased, the management body claimed that resource quality increased (Haider and Kabir 2014). However, a study conducted by Uddin and Hassan (2010) found that the number of woody plant species has decreased in the park area due to illegal logging and trading.

Under the co-management projects, the plantation area of the park has been increased. According to Haider and Kabir (2014), there has been introduction of non-native species like oak (*Quercus rubra*), pine (*Pinus sylvestris*), lohakath (*Xylia dolabriformis*) in some parts of the park. These non-native species are planted as test plantation and after observing the growth of trees, plantation will continue in larger parts of the park.

ii. Controlling illegal forest activities

A large number of former illegal loggers were recruited as petrol guards to protect poaching of valuable timber from the park area. All participants were paid a reasonable amount of money and basic gears for their protection service. And the attempt was found to bring a noticeable change in the area whereby significant reductions in illegal forest activities were experienced (NSP 2007). It was also found that the number of trees illegally felled during 2003-04 periods were about 1,200 being highest amongst the pilot sites, and was about 400 during the 2006-07 period (Mazumder et al. 2007).

Surprisingly, it has been found that illegal loggers who was recruited as forest guards reacted in a more optimistic manner than those who got other economic

incentives like poultry, livestock rearing etc. (Haider and Kabir 2014; Mukul et al. 2012). When local people got the feelings that they are being believed by the government and are given responsibilities to protect their own forest, they respond positively and cooperate with the projects (Mukul et al. 2014). Paloniemi and Vainio (2011) claimed that, with increasing mutual trusts, authenticity and legitimacy local people encourages their willingness to cooperate in conservation efforts in forest areas.

The use of conventional forest law is often not suitable to control illegal forest activities. Mukul et al. (2014) found that the implementation of law was sometimes create a vicious cycle of illegal logging, in which the illegal loggers keep doing illegal activities to enable them to afford the fees of their legal representation and appearance in the court as well as enabling their livelihoods.

### iii. Social and economic improvements of local people

One of the very important aspects of the management approach is to provide AIG as economic incentives to the local people. Though the support was very limited, it has built the trust between the government and local stakeholders (Mukul et al. 2013; Rashid et al. 2013a). The number of tourist has a positive influence in local business, and the number of tourists has been increasing in the park. According to the IPAC tourism study, during 2009-2010, the number of tourists in this park was 90,000 per year and the next year (2010-2011) was 100,000 (Haider and Kabir 2014). Sarker et al. (2012) stated that the number of visitors jumped to 120,000 in the year 2011-2012.

According to the study of Haider and Kabir (2014), thirty villages are being supported by this park and all the villages have a village council forum (VCF). Co-management committee discuss with the VCF before any decision regarding resource management is finalized. This study showed that 52% participants agreed that their daily income and amount of resource collection have increased. 40% of the respondents were happy being able to take part in the decision making process of management approaches through the co-management committee and most importantly 52% of the respondents thought that their achievement is to present their problems to the management body. Moreover, local people can collect non timber forest products for their household use and consumption unofficially. Women were encouraged to be involved in the livelihood programs like forest patrolling, micro-credit operation, nursery

development, handicrafts making, etc. And this approach of management was found fruitful and speeded up the community engagement (Khan 2008). Though it was prohibited to enter the core zone of the forest, the poor people used to get a 45% share of the buffer zone plantation (Haider and Kabir 2014).

### *Limitations of NSP and IPAC*

The efforts of NSP and IPAC were limited by several factors, including lack of coordination among co-management committee, lack of support from the project and reluctance of the field staffs belonging to the FD. Such limitations of any programs can adversely affect the governance mechanism. According to Kolahi et al. (2013), failing in building connections with local people is the main cause of unsuccessful management approaches in PAs. A number of stakeholders complained that the working body of the co-management committee was not always cooperative in engaging local people in decision making. They claimed that there is a communication gap between VCFs, co-management committee and local villagers which is sometimes responsible for the unsuccessful conservation approaches (Haider and Kabir 2014).

There is an absence of women's leadership in the co-management committee at Lawachara forest. Women engagement in leadership could have been more successful since the guideline of NSP suggests that, female participation should be happening in a culturally appropriate manner (Khan 2008). Engagement of particular NGOs' sometimes created problematic situations as every NGO has their specific goals and objectives. For example, BELA was engaged with the project in 2007 as a result of a proposal made by the participants in a workshop for bringing necessary modifications to the Act of 1974 (amended). Though BELA and IUCN had to work together in the operation in Lawachara, later BELA was not interested for various reasons (Khan 2008). Another drawback of co-management approaches is- sometimes the people get charge of patrolling the forest, are found to be involved in illegal activities since it is easier for them to recognize each and every corner of the forest.

Though the number of visitors is considered effective and non-damaging to the park, sometimes it causes reduction in number of wildlife species. According to the focus group discussion facilitated by Haider and Kabir (2014), the wildlife of the park was decreasing. The respondents claimed that the increasing number of tourists and their irresponsible manner has hampered the natural habitats of various wild animals and as a result, causing wildlife decline in the park. Lack of

knowledge regarding eco-tourism principles among tourists and tour guides hamper the management system badly.

Apart from these problems, there were other major issue that creates problems in conservation strategies- elite people of the village and their politics. Elite stakeholders are often very influential in villages- they want to get more advantages by depriving the poor people, which creates an unstable environment as well as a gap between the local people and co-management committee members.

### Concluding remarks

Since people's involvement is one of the major criteria of co-management approaches, their involvement should be confirmed from decision making to the implementation process, and sharing of benefits should be exercised in a fair and honest approach. Most of the poor villagers have little or no idea about biodiversity conservation. So, steps should be taken by the managing body to make villagers aware of species conservation as well as the link of deforestation, global warming, climate change and their consequences. Visual effects can be shown to the local people regarding global warming and climate change so that they can easily understand these issues. The tourist guides should be trained properly to perform their duties. Government should take initiative in establishing a village school (should be far from the PA) so that people can educate their children and make them capable of reducing their forest dependency through securing AIG.

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