



**CO-MANAGEMENT OF PROTECTED AREAS IN SOUTH ASIA  
WITH SPECIAL REFERENCE TO  
BANGLADESH**

**Task no.:**  
**USAID Contract no.: 388-C-00-03-00050-00**



## **CO-MANAGEMENT OF PROTECTED AREAS IN SOUTH ASIA WITH SPECIAL REFERENCE TO BANGLADESH**

*Prepared for*  
**Forest Department**

*Prepared by:*  
**Ram Sharma**



With Partners : CODEC, NACOM & RDRS



## *Abstract*

Historical evolution of co-management practices for forests and protected areas (PAs) is presented for South Asian region in order to comprehend the present co-management scenario in the region in general and Bangladesh in particular. This follows an exhaustive review of current co-management of PAs in 6 main South Asian countries (India, Nepal, Sri Lanka, Pakistan, Bhutan and Bangladesh) with a view to discern relevant enabling co-management policy patterns. The relevance of emerging lessons is examined for Bangladesh in order to help decide future co-management priorities for the PAs. Co-management approach is particularly found suitable for Bangladesh PAs that are intimately interspersed with local communities, who practice cultivation and depend on forests for their livelihood needs. It is argued that more forest areas should be brought under PAs and co-management practices for *in-situ* biodiversity conservation in an agrarian economy of Bangladesh that is characterized by food deficit.

**Key Words:** Protected Area, Co-Management, National Parks, Wildlife Sanctuaries, Game Reserve, Eco-development

# Table of contents

1. Introduction.....	5
2. Evolution of Co-Management of South Asian Protected .....	5
3. Protected Areas in Bangladesh .....	8
4. Co-Managing South Asian Protected Areas .....	10
5. Emerging Co-management Lessons and their Relevance to Bangladesh.....	15
6. Conclusions.....	19
References.....	19

# 1. Introduction

A protected area (PA) is defined by IUCN (The World Conservation Union) as, “an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means”. Collaborative management – or co-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*, 2004). An equitable sharing of benefits and costs of a PA’s protection and management among the stakeholders is, therefore, an important part of co-management of PAs. A PA may be co-managed for a variety of reasons including scientific research, wilderness protection, preservation of species and genetic diversity, maintenance of environmental services, protection of specific natural and cultural features, tourism and recreation, education, sustainable use of resources from natural ecosystems, maintenance of cultural and traditional attributes, etc.

Different categories of PAs have been legally constituted in South Asian countries under their respective national Wildlife Acts. For example, three categories of PAs (National Parks, Wildlife Sanctuaries and Game Reserves) have been established in Bangladesh under Wildlife (Preservation) (Amendment) Act, 1974 for their management by Bangladesh Forest Department (FD). National Parks and Wildlife Sanctuaries have been constituted in India under Indian Wildlife Act, 1972. Similar notifications for the declaration of PAs have been made in other South Asian countries as well.

The paper reviews relevant co-management experiences at policy level in the notified PAs of 6 important South Asian countries (India, Bangladesh, Nepal, Sri Lanka, Bhutan and Pakistan) in order to draw important lessons for future co-management initiatives to be implemented in the PAs of Bangladesh. In the process an evolution of co-management of PAs in South Asia has been traced to provide an historical perspective.

## 2. Evolution of Co-Management of South Asian Protected Areas

The traditional and customary forest use systems in South Asia during ancient and medieval times were largely participatory and inclusive for meeting the livelihood needs of local communities (see Sharma 1994a and Sharma, 1995 for a detailed review). This approach of forest management realized that forests on which local people depended for their livelihood should not be managed in isolation of neighbouring communities. The first formal attempt to exercise state control in the Indian subcontinent was taken by Moghul rulers in 1793 when permanent settlement of estates including forests was done with local elites (designated as Zamindars and Talukdars), who became hereditary collectors of the land revenue *in lieu* of a fixed annual royalty. The Zamindars, who acted as commission agents, were given property rights in their estates including forests on a condition of payment of an annual revenue fixed permanently. Thus local

communities/peasants, who were traditionally using forests for their livelihood and cultivation, were made tenants at the mercy of Zamindars. As the population pressure during this period was much less and forests abundant, most of the forests remained under the nominal control of Zamindars except that wherever possible agriculture was encouraged by clearing forests in order to generate more land revenue from cultivated lands. The client-patron relationship of land tenure regime gave rise to feudalism and adversely affected both agriculture and forest land-use systems. Neither the impoverished tenants nor the Zamindars invested in forest land development and, therefore, forest land productivity suffered during the period.

A comprehensive Forest Act in the Indian subcontinent was enacted in 1927 by modifying the first Forest Act of 1865 (and its subsequent revision in 1878). Some forests were earmarked as hunting reserves for royalties, a concept extended by British in their colonies (India, Bangladesh, Pakistan, and Sri Lanka) first by reserving commercially important trees (e.g. teak for royal navy) and subsequently by reserving forest lands (e.g. reserve forest and protected forest). Thus property rights were enforced on hitherto open access forests by enacting Forest Acts (1865, 1868 and 1927) and establishing Forest Departments (e.g. Forest Departments were established in 1865 in the Indian subcontinent). Main objective of forest management during this period was production of wood, mainly timber. After independence from British rule in late 40s, the Zamindari system was abolished by the Governments of subcontinent and the State Acquisition and Tenancy Acts were enacted to bring private forests under Government ownership. Accordingly, the FDs of India and Pakistan took over the management of private forests (e.g. the present day Modhupur and Bhowal National Parks in Bangladesh) hitherto managed by Zamindars and native rulers.

In Nepal the first legislation for wildlife was implemented during the Rana regime more than 150 years ago. The National Parks and Wildlife Conservation Act promulgated by His Majesty Government of Nepal in 1973 provided legal basis for establishing PAs. Bhutan Forest and Nature Conservation Act was enacted in 1995 wherein the role of local communities in wildlife conservation was emphasized. Social forestry initiatives were taken up by the South Asian countries since 60s through funding from the national and provincial governments. However, large scale social and community forestry projects, supported by donors, were taken up in these countries since early eighties when forestry programs were linked with rural poverty alleviation efforts initiated by donor community. For instance, the World Bank for the first time supported large social forestry projects in the Indian states of Gujrat and Uttar Pradesh in 1981. This was followed by initiating similar social forestry projects in other Indian states supported by multilateral and bilateral donors including USAID, SIDA, CIDA, EU, JBIC, etc. The environmental functions and services of forests and PAs were being increasingly recognized during this period, both nationally and internationally, as evident from a number of international conventions and conferences organized by many multilateral agencies since 70s.

The donor funded social/community forestry programs in South Asia were implemented in areas outside the designated forests (reserved and protected forests under state ownership) mainly to create tree resources on unutilized government and private lands.

The surplus labour was employed in these efforts on unutilized lands to reduce biotic pressure on state forests and provide gainful employment to unemployed and underemployed workforce (Sharma, 1993). A negative impact of increased focus on creating tree resources outside natural forests including PAs was seen in reduced funding (and consequent degradation) for natural forest management as the respective Government diverted funds for social forestry in order to utilize donor funds by providing their matching national contribution. Consequently the next generation of forestry projects started from early 90s were taken for forestry sector as whole wherein social forestry was one of many components; the other important component being management of natural forests and PAs by associating local stakeholders. For instance, externally aided community/social forestry projects, started in Bangladesh in 1981 with financial support from Asian Development Bank were phased out in favour of sectoral forestry development programs. As a result, sector-wide forestry projects such as Upzila Afforestation and Nursery Development Project (UANDP) and Forestry Sector Project (FSP) were implemented in Bangladesh with the financial support from ADB. The country in this process witnessed a major policy shift in forestry sector towards a more participatory approach to the management of forests and PAs. Bangladesh Forestry Master Plan, completed in 1993 with the assistance from ADB, led to the promulgation of the people-oriented Forest Policy of 1994 wherein meeting peoples' needs through their gainful involvement in forest management was focused.

The World Bank supported Forestry Sector Projects were taken up in the Indian states of West Bengal and Uttar Pradesh since 1992. Joint forest management committees (for the protection of forests) and eco-development committees (for the conservation of biodiversity in PAs) were established under many donor funded forestry projects (Sharma, 1994b). World Bank funded sectoral forestry projects such as West Bengal Forestry Project and Uttar Pradesh Forestry Project started during 90s had an important component on co-management of PAs. Similarly, Andhra Pradesh Forestry Sector Project taken up in 90s had special components focusing on eco-development activities in and around PAs.

Wildlife protection legislations and acts were enacted by many South Asian countries during 70s. For example, India passed Wildlife Act in 1972, which was closely followed by other South Asian countries including Bangladesh Wildlife Preservation Ordinance in 1973. These Acts provided a legal basis for establishing PAs and so many National Parks and Wildlife Sanctuaries were declared by national Governments under their respective Wildlife Acts. A seven-year eco-development project supported by Global Environment Facility (GEF) was started in 1996 in 7 PAs spread in 7 different Indian states (West Bengal, Rajasthan, Madhya Pradesh, Kerala, Karnataka, Gujrat, and Bihar). The program targeted conserving biodiversity in 7 globally significant PAs by following ecodevelopment approach of co-managing PAs. These PAs are designated as Tiger Reserves with special focus on the conservation of tigers. Ecodevelopment in the project was defined as a strategy to overcome unsustainable and incompatible forest use by dependent communities for their livelihood in and around PAs through regulated use and alternatives (World Bank, 1996). The project had 5 main objectives : i) improved PA management, ii) village ecodevelopment, iii) development of more effective and

extensive support for PA management and ecodevelopment, iv) overall project management, and v) preparation of future biodiversity projects. The successful experiences of the eco-development project have been carried forward by implementing eco-development schemes funded by the Govt. of India in more than 80 PAs spread in different states.

The development of Forestry Master Plans initiated in many South Asian countries in late 80s and early 90s from the support of FAO/UNDP and other multilateral agencies such as ADB dealt human issues including meeting the livelihoods needs of local communities. A number of Integrated Conservation and Development Projects (ICDPs) have been implemented in developing countries though financial support of multinational development agencies such as World Bank and GEF. During 1991-2003 total investment in biodiversity projects all over world by GEF funding has been USD 1638.4 million (GEF, 2003). These projects focused on conservation of biodiversity in PAs by attempting to meet the socio-economic needs of local communities thereby reducing pressure on the habitats including forests. However, many critiques have written extensively on the narrow focus of many ICDPs (Philip and Jayawickrama, 1996) and heavy emphasis on livelihood initiatives. This experience has led to focusing on biodiversity conservation as the main objective to be achieved by implementing a number of components including one on income generation activities to be implementing by local stakeholders.

Evidently South Asian countries have experienced co-management of PAs, albeit in different forms and practices keeping in view their differing bio-physical and socio-economic environment. The traditional and community-based forest resource use systems, which gave way to centralized government systems during colonial times, are now increasingly being evolved in favor of co-management of forests and PAs. Some governments have enacted empowering policies and legislations, and have established appropriate institutions for co-management of PAs whereas others are in the process of doing so. New relationships and arrangements have evolved between PA managers and local stakeholders as the co-management approach of PA management is increasingly institutionalized. As a result, benefits to local stakeholders have started flowing in those countries where co-management practices have been operationalized.

### **3. Protected Areas in Bangladesh**

Bangladesh Forest Department manages 1.53 million ha of forest land mainly under the legal categories of reserved and protected forests. The Government of Bangladesh have established PAs in all forest types in the 4 bio-ecological zones (tropical evergreen and semi-evergreen forests, moist deciduous forests, mangrove forests, and reedland and wetland forests) under the Bangladesh Wildlife (Preservation) (Amendment) Act, 1974. Presently there are 16 notified PAs (Table 1) under the management of Forest Department, covering an area of 241,675 ha under three PA categories – 5 National Parks, 8 Wildlife Sanctuaries and 1 Game Reserve. This is the second lowest per capita area under PAs in any country. Other categories of PAs such as Ecologically Critical



Areas (ECAs) established under Bangladesh Environmental Conservation Act, 1996 have not been included in the review.

**Table 1 : Protected Areas of Bangladesh**

Sl. No.	Protected Area	Forest Type	Area (ha)	Year of Establishment

Many of these PAs were included in the respective Working Plans under “Preservation Working Circle”. After enacting the Wildlife (Preservation) (Amendment) Act 1974 a Wildlife Circle was created in 1976 with specific responsibility for wildlife policy related matters. Unfortunately the post was abolished in 1983 until its revision in 2002. Separate Management Plans have been prepared for managing all the PAs under the management of FD. However, in view of lack of resources most of the recommendations of these plans have remained unimplemented.

The country’s PAs have been an intimate interspersion of human habitations and cultivation through them with traditional dependency on neighbouring forests for their livelihood in a largely agrarian economy characterized by food deficits and natural calamities. In addition to development pressures on forest land, the traditional dependence of local communities on forests including PAs has historically been an important aspect of forests management in Bangladesh. Anthropogenic pressures including increased commercial extraction of forest produce, and forest land encroachment for habitations and agriculture, brought by manifold increase in human and cattle population, led to shrinkage and degradation of forests and PAs in Bangladesh. Illegal removals from the forests have increased off late, thereby jeopardizing the very existence of biodiversity in many PAs. This has adversely affected the local communities as well as the conservation status of wildlife habitat. In the process the livelihood of the

natural resources dependent people is affected adversely. Thus in Bangladesh the biodiversity conservation priorities cannot be set in isolation from local forest resource use and development.

## 4. Co-Managing South Asian Protected Areas

The relevant policy level co-management initiatives are reviewed from each of the six South Asian countries in order to examine their applicability in future management programs in Bangladesh.

### **India :**

The country has a history of PA co-management and a number of legislations have been enacted. The Wildlife Protection Act 1972 provides for the establishment of national parks and wildlife sanctuaries, which have been established extensively throughout India. This Act has been amended a number of times (1986, 1991 and 2002) and many states have enacted their own Wildlife Acts. India, one of the 12 mega biodiversity countries in the world, has 89 national parks and 489 wildlife sanctuaries (covering 4.7% of the country's geographical area) spread in 10 bio-geographic zones. More and more forests are being brought under PAs as effective means to retain adequate forest land under biodiversity through better protection under Wildlife Acts and financial resources provided by both federal and state governments. For example, most of the good sal forests along the *terai* region of the Indian states of Uttaranchal, Uttar Pradesh, Bihar and West Bengal have been declared as PAs. The PAs along the *terai* (a Nepalese word meaning moisture) region covering India (e.g. Katarniaghat Wildlife Sanctuary), Nepal (e.g. Bardia National Park) and Bhutan have transnational implications in view of their common landscapes across international borders.

The first Forest Policy for the subcontinent was formally promulgated in 1894 wherein meeting the bonafide needs of local populace from nearby forests was emphasized. This people-oriented focus was, however, diluted in the Forest Policies of independent India and Pakistan wherein local level needs were subjugated by national needs in terms of industrial timber, etc. Fortunately the Indian Forest Policy of 1988 reversed this trend by focussing on meeting the needs of local people as first charge on neighbouring forests. As per the policy forests are treated as an ecological necessity, a source of goods and services for use by local population and a source of wood. The diversion of PA land for non-forestry purposes including agriculture has been effectively checked after the implementation of Forest Conservation Act, 1980 that prohibited diversion of forest land by state governments for non-forestry purposes without prior approval of Government of India. In case of absolute necessity, the Government of India approves a state government proposal for forest diversion with stipulation that equivalent land will be developed as forests by the concerned state Forest Departments. The forest health of PAs are monitored by preparing Forest Status Reports (by Forest Survey of India) to be placed before the Indian Parliament every two year.

The participation of local communities in the co-management of forests and PAs has been formalized, both by the federal and state governments, by formulating enabling

policies and guidelines. Many states have issued administrative circulars for co-management of forests and PAs whereas other states have formed relevant rules under respective State Forest Acts. State Wildlife Wings, established within FD (headed by Chief Wildlife Wardens of the rank of Principal Chief Conservator of Forest/Chief Conservator of Forest) with fully operational circles and divisions, receive earmarked budget allocations under specific wildlife financial heads, both under revenue and development budgets. Similarly, the Wildlife Wing of federal Ministry of Environment and Forest, managed by foresters, allocates funds to state FDs for the co-management of PAs including eco-development schemes. Forestry sector is increasingly recognized as a service sector (like education and health sectors) wherein revenue generation is no more an important management objective in view of a variety of functions and services generated by forests and PAs. As a result, most of the wildlife divisions do get regular funds for specific co-management schemes including technical upgradation through regular orientation courses organized in national institutes such as Wildlife Institute of India. Co-management planning guidelines including management zoning formulated by the WII for developing management plans are implemented by state FDs.

As an integral part of co-management programs, self-help/user groups are formed at village level and a village development fund is set up and operated by the groups with seed money provided by FD under different federal and state government funded schemes. The fund is used mainly for the creation of community assets but can also be used for loan to individual group members for taking up income generation activities. In some states including Orissa, Andhra Pradesh and Harayana these groups have been registered as NGOs and cooperative societies in order to receive funds directly from state and federal governments for implementing various rural development activities. Public-private partnerships have been established in some states such as Rajashtan by creating Foundations/Trusts (e.g. Ranthambore Foundation, Ashoka Foundation) for taking up co-management activities in the PAs. Eco-tourism activities around important PAs such as Jim Corbett National Park, Jaldapara Wildlife Sanctuary and Koeldeoghana Bird Sanctuary are generating both forward and backward linkages triggering economic growth around the PAs. A part of revenue generated out of eco-tourism and other development activities is retained by state FDs (e.g. West Bengal and Madhya Pradesh) for ploughing back in conservation and community development activities in and around the PAs.

Natural regeneration technologies have been prioritized for habitat restoration, and enrichment planting of indigenous species is suggested in identified gaps where existing rootstock cannot be regenerated. Mono-cultures of exotic tree species are gradually replaced through canopy manipulation. Most of the PAs in India have core and buffer areas identified both on the maps and in field. In buffer areas of the PAs inhabited by tribal communities, separate funds are allocated both by federal and state governments under “food for work programs” being implemented by Forest Development Agencies of FD under integrated tribal development schemes. Regular budget provisions are made in all the Indian states for compensating local villagers, who suffer loss of property and life due to wildlife attacks. Wildlife insurance schemes have been initiated by West Bengal

FD by paying annual premiums for insuring individual households in core and buffer areas.

A recent amendment (2002) to the Wildlife Act has suggested two new categories of PAs - conservation reserves and community conserved areas - in order to bring more areas under conservation by involving local people. The Biodiversity Act 2002 provides for biodiversity conservation through participation of local people organized into biodiversity management committees. The Biodiversity Action Plan 2003 focuses on livelihood needs of local people and at the same time maintaining ecological security.

### **Nepal :**

There are 9 National Parks, 3 Wildlife Reserves, 3 Conservation Areas and 1 Hunting Reserve, covering an area of 27,874 sq. km. across Nepal (18.33% of the country's total land area). The Department of National Parks and Wildlife Conservation established in 1980 is entrusted with the responsibility of planning and managing the PAs. The co-management of forests and PAs in Nepal has progressed rather well when compared to other South Asian countries particularly in terms of establishing enabling policies, legislation and institutions. Since the establishment of the first National Park (Chitwan gazetted in 1973), the country has enacted a number of policy and legislative measures for the operation of co-management approach for PA management. For example, one of the objectives of the Forestry Master Plan prepared for the conservation of ecosystems and genetic resources is "to enhance education in resource and protected area management and people-park relations" (HMG, 1988). Similarly the National Conservation Strategy for Nepal outlines consultative process for identifying management zones and meeting local peoples' needs.

A number of initiatives were taken by the Nepal government during 1992-2004 for implementation of co-management practices in PAs. The National Parks and Wildlife Conservation Act, 1973 was amended in 1993 for formulating Buffer Zone initiative wherein Article 25 (a) enabled the residents of buffer zone to receive 30-50% of the annual revenue of a Park for local community and conservation development. A buffer zone is a designated area surrounding a PA within which the use of forests by local communities is allowed in lieu of their gainful efforts in biodiversity conservation. Its main objectives include minimizing adverse human impacts on PAs by meeting livelihoods needs of local communities, supporting local communities to organize them into self-governed local institutions capable of undertaking conservation and community development activities in and around PAs.

The Buffer Zone Program, focusing on gainful association of local people in the conservation of PAs through partnerships, was first piloted in Royal Chitwan National Park in 1995 followed by its implementation in other Parks. A public-private partnership has been established through King Mahendra Trust set up for Royal Chitwan Park. The Buffer Zone Management Regulations, 1996 and the Buffer Zone Management Guidelines, 1999 operationalized the relevant provisions of the Buffer Zone policy and legislation. Biodiversity Strategy, 2002 has strong commitment on participation of local stakeholders from the planning stage as a part of co-management of PAs and Buffer

Zones. By 2002 the Buffer Zones (covering an area of 3,941 square km; nearly 14% of the total PA area) have been declared in 6 National Parks (Royal Chitwan, Royal Bardia, Langtang, Makalu Barun, Sagarmatha and Shey Phoksundo) with relevant regulations and guidelines for their management through active participation of local communities and NGOs. A Buffer Zone Forum was launched in 2002 and Nepal Biodiversity Strategy was also endorsed in 2002. Under a savings and credit scheme, introduced with the user groups formed in buffer zone areas, the members deposit savings weekly/monthly in their user group account in addition to the revenue deposit allocated out of the share of communities (30-50%) as per the Buffer Zone Policy.

### **Sri Lanka :**

There are 11 National Parks and, 56 Wildlife Sanctuaries and Reserves covering an area of 0.65 million ha (nearly 10% of the country's land area). National Policy on Wildlife Conservation was approved by Sri Lankan Government in 1990. The National Forest Policy, 1995 and Forestry Sector Master Plan, 1995 emphasize participatory management of forests and PAs, both for present and future generations. For instance the policy states, "the state, where appropriate, form partnerships with local people, rural communities and other stakeholders, and introduce tenurial arrangements". For this purpose forests were proposed to be zoned in to 4 categories to practice co-management in different forms. Co-management practices have been implemented in Ritigala Nature Reserve where 14 villages surrounding dry zone mountain reserve were associated. This Reserve was also included in a WorldBank/GEF funded biodiversity conservation project implemented in Sri Lanka. DeCosse and Jayawickrama (1996) provides a detailed review of co-management initiatives taken up in Sri Lanka.

### **Pakistan :**

The National Conservation Strategy for Pakistan, ratified by the federal government in 1994, emphasized collaborative management. Similarly, the Provincial Conservation Strategies, Pakistan Biodiversity Action Plan, Wildlife Policy and Model Provincial Wildlife Laws all focus on empowering local communities in co-management of PAs. The Mountain Areas Conservancy Project funded by GEF, UNDP and Government of Pakistan is working in North West Frontier Province and Northern Areas in conserving biodiversity by organizing local communities. In Khunerab National Park nearly two-third of the new employment opportunities are earmarked for local people. Seventy percent of the proceeds from game hunting outside the park are given to local people. In Bar Valley the collaborative efforts of local communities and WWF for the conservation of Himalayan ibex have been successful and 50% of the revenue from trophy hunting goes to local community.

### **Bhutan :**

The management of PAs in Bhutan is being done by following the provisions of Forest and Nature Conservation Act, 1995, which reflects strong Buddhist conservation traditions. Local communities are increasingly involved in the co-management of forests and PAs as in case of Nepal and India. For example, local communities manage pastures within the Jigme Dorji National Park through a system of rotational grazing and levying taxes on the grazing of yak herds (Kothari *et al*, 2000).

**Bangladesh :**

Relevant co-management practices for the PAs of Bangladesh are discussed in detail in order to visualize future co-management scenarios. With the promulgation of Forest Policy of 1994 the emphasis of forest management shifted from timber production to ecological requirements, conservation of biological diversity, meeting bonafide consumption needs of local people, and other functions and services of forests. It was increasingly recognized that an important objective of the management of forests and PAs should be to maintain perennial vegetative cover, necessary for various environmental and socio-economic functions and conservation of biodiversity. But past rural development efforts in Bangladesh have so far either been inadequate or failed to take into account relevant linkages between conservation of PAs and welfare of local people. Not only local people are getting less production and employment opportunities due to decreasing land fertility and reduced under-ground water tables but also degraded forests are not able to meet their bonafide consumption needs for forest produce. A gainful association of unemployed and under-employed rural mass, achieved by establishing appropriate partnership mechanisms is, therefore, essential for sustainable management of the country's PAs.

The ADB assisted Forestry Sector Project (FSP, 1996-2006), being implemented by associating local communities based on usufruct benefits sharing basis, has a conservation area management component covering 7 PAs (Modhupur National Park, Lawachar National Park, Rema-Kalenga Wildlife Sanctuary, Chunoti Wildlife Sanctaury, proposed Hazarikhil Wildlife Sanctaury, Himchari National Park and Teknaf Game Reserve). Local people and communities participate in developing, protecting and managing forests/plantations in and around the PAs in lieu of usufructury rights granted as per participatory benefit sharing agreements (PBSAs) signed between participants and land owning agencies (such as FD in case of reserved forests and protected forests, and Roads & Highway Department in case of strip plantations along roads). Local stakeholders organized into user groups have access and get usufructury rights over forests in return for increased responsibility for the protection and conservation of biodiversity of the 7 PAs. As a result, for the first time PAs in Bangladesh have been brought under co-management initiatives under FSP. Three main activities under the conservation area component of FSP are i) buffer zone plantations to be established around the PAs, ii) core area activities including enrichment plantations in identified gaps, and iii) extension of PAs by declaring new PAs or extending the areas of existing PAs wherever feasible. This was followed by another co-management initiative for managing the PAs of world famous mangroves of Sundarbans under Sundarban Biodiversity Conservation Project initiated by ADB support in 1998.

Forest Department in 2004 developed a Nishorgo Program by focusing on the co-management of the PA system of Bangladesh. It broadly covers the USAID funded Nishorgo Support Project (NSP) covering 5 pilot PAs, the ADB supported FSP and different GoB funded wildlife schemes (e.g. Sitakunda and Dulahazara Safari Parks, and

Bhowal and Madhopur National Parks). At the heart of Nishorgo Program is a focus on building equitable partnerships between the FD and key local, regional and national stakeholders, who assist in conservation efforts for the PAs. An effective implementation of the Nishorgo Program is helping FD to conserve biodiversity through facility development, capacity building, and gainful partnerships with key stakeholders. Under its partnership with the Government of Bangladesh, the USAID, Bangladesh through NSP is providing targeted technical support to main aspects of the Nishorgo Program. The NSP is a part of a broader Nishorgo Program of Forest Department aiming to protect and conserve the forests and biodiversity of the country's PAs by building gainful partnerships between the FD and main stakeholders based on mutual trust and shared roles and responsibilities for biodiversity conservation and sustainable use.

The NSP (formerly Co-Management of Tropical Forests in Bangladesh) has been started since 2003 as a 5-year pilot project for co-managing 5 pilot PAs (Lawachara National Park, Rema-Kalenga Wildlife Sanctaury, proposed Satchuri National Park, Chunoti Wildlife Sanctaury and Teknaf Game Reserve) of Bangladesh. The NSP is working closely with the FD and key conservation stakeholders to develop and implement a co-management strategy to help conserve the country's PAs where gainful partnerships with relevant stakeholders are essential for PA conservation. Main focus of forests management in PAs is on conservation of forests and constituent biodiversity resources, sustainable use of specified areas where this can help achieve conservation on a broader scale, and involvement of local people and other key stakeholders in PA management. The co-management planning approach under Nishorgo Program comprises, i) protection and conservation of all remaining natural forests and constituent biodiversity in the PAs, ii) conversion of monocultures of exotic tree species into natural and man made regeneration of indigeneous species by gradually opening the canopy, iii) development of co-management agreements (by linking PA conservation with benefit sharing arrangements) with key stakeholders to reduce ongoing habitat damage by helping them achieve sustainable livelihoods through participatory forest use and alternative income generating activities, and iv) provision of support to better administration and management of the PAs including capacity development, facility/infrastructure development, training, and wider extension and communication.

Two main schemes on wildlife management being funded by GOB are Modhupur and Bhowal National Parks schemes where main focus is on providing protection and facility development infrastructure. Other wildlife schemes focus on safari parks in Dulahazara and Sitakunda mainly for eco-tourism purposes.

## **5. Emerging Co-management Lessons and their Relevance to Bangladesh**

An overall focus of PA co-management planning in South Asian countries is to manage them in as natural and less disturbed conditions as possible, and to provide protection to

their constituent biodiversity by establishing gainful partnerships with key stakeholders in view of their intimate interspersed with human habitations and cultivations in a largely agrarian economies with traditional dependency on neighbouring forests for livelihoods. A PA ecosystem creates its own micro-climate that is an integrated result of meteorological processes and the conditions within the space occupied by the forest ecosystem. Success of PA management would depend upon adequate site information, understanding of flora/fauna and local communities, nutrient availability, natural regeneration, etc. Management of biodiversity within PAs and generating forest functions and services while maintaining their environmental roles and multiple functions are necessary. Co-management of PAs will be a part of biodiversity and forest land management strategy so that perennial vegetative cover is maintained. The PA co-management system should be perceived as husbandry of renewable biodiversity with attention to the protection, conservation, recreational and other values. The value of PA functions and services such as socio-ecological security, regulation of steam flow, source of biological diversity and sink for carbon content is being increasingly recognized in PA co-management decisions.

The maintenance and development of good quality forest cover with natural structure and composition, and the conservation of its constituent biodiversity are important considerations in PA co-management. As in case of India and Nepal, sustainable forest use practices need to be allowed to local forest dependent people particularly in interface landscapes based on co-management agreements with specific roles and responsibilities for gainful stakeholders' partnerships. Natural regeneration and eco-restoration are to be encouraged wherever possible. Enrichment planting of indigenous species of shrubs and trees are to be taken in those areas where regenerative rootstock does not exist. The present practice of clear-felling in neighbouring forest (e.g. Rema-Kalenga) is to be done away in favour of either no felling or at the most selection felling. Visitor use for outdoor recreation, research and educational purposes will be encouraged in designated areas/zones.

With the promulgation of progressive forest policies and legislations in many South Asian countries, the PA co-management has focused on ecological requirements, conservation of biological diversity, and meeting bonafide consumption needs of local people by associating them in gainful partnerships. Management zoning by these objectives has been attempted in the management plans prepared for 7 PAs covered under FSP. Given protection against illicit felling, land encroachment, forest fire and grazing (to be achieved through co-management initiatives) it should be possible to naturally regenerate PAs in Bangladesh in view of favourable above-ground and below-ground biophysical factors. The capital resources for taking up natural regeneration technologies may be tapped from global initiatives such as GEF, CDM and other Carbon Funds. This may require taking up applied research initiatives particularly on assessing intangible benefits accruing from the PAs. *In-situ* biodiversity conservation measures including natural regeneration technologies to be implemented in the PAs will be complemented by *ex-situ* conservation efforts by establishing botanical gardens, zoos, etc.



The diversion of forest land is quite common in densely populated Bangladesh due mainly to immense biotic pressure brought on the remaining chunk of forest land by industries, agriculture and settlement. For instance, the forests lands are being increasingly encroached by neighbouring cultivators particularly in sal forests of central and northern regions. Except in parts of CHT, most of the forest lands in Bangladesh are suitable for cultivation and so in food deficit country there is great temptation to harvest remainder forests in order to release land for cultivation. Although this disturbing trend has been reversed in some South Asian countries, this phenomenon of diversion of forest lands for cultivation and industrialization is still continuing in Bangladesh. The diversion of forest land for agriculture is aggravated in Bangladesh in view of suitability of forest land for cultivation and a very high population depending on agriculture for their subsistence livelihood.

The continuing trend of loss of forest land needs to be immediately stopped by enacting appropriate legislation and government orders, and implementing them strictly as has been achieved by FDs in India. This will check the use forest lands under PA for non-forestry purposes. The existing forest areas of 7 PAs covered under FSP may be extended by re-notifying as proposed in the management/action plans prepared under FSP. The present practice of giving forest land on leases by FD should be immediately done away with. More and more natural forests are being brought under PA network in countries like India, Sri Lanka and Nepal mainly to provide effective protection to biodiversity (through updated wildlife policy and legislations) but more importantly to retain forest land under vegetation cover and enhanced budget provisions. In these countries PAs have proved effective for retaining forest lands and protecting remaining natural forests.

Most of the remaining natural forests in Bangladesh are home to ethnic minorities and intensively managing these forests as PAs may be our last hope for retaining the natural vegetation, forest land and tribal-forest association. Biodiversity in sea, wetlands and farms can be another means of expanding PA network in Bangladesh. In fact vegetation-water linkages are more pronounced in Bangladesh and so need to be tapped by adopting watershed approach of PA management (e.g. Lawachara, Rema-Kalenga, Teknaf, etc.). As in case of India, there is scope for developing community conserved areas and conservation reserves particularly on khas lands and unclassed state forests in Chittagong Hill Tract. Similarly new PAs can be established in order to cover remaining good natural forests, particularly in Sylhet, Chittagong, Cox's Bazar, CHT and Sundarbans.

Unlike Nepal and India, neither Bangladesh Wildlife (Preservation) (Amendment) Act, 1974 nor the gazette notifications for the notified PAs mention about core area and buffer area. Accordingly, buffer zones have neither been identified in field nor delineated on maps for the notified PAs. In view of limited area and fragmented nature of PAs in Bangladesh the concept of Buffer Areas as in case of Nepal is not practically feasible. However, the landscape approach of PA management encompassing both relevant eco-systems and human systems is relevant for the PAs in Bangladesh. Accordingly, appropriate landscapes are being identified as a part of management zoning being implemented around the 5 pilot PAs covered under NSP. A landscape approach of PA co-

management would necessitate identification of a surrounding landscape that impact co-management of PAs. Demarcation of PA boundaries and co-management zones need to be taken up in all the PAs of Bangladesh. As compared to other South Asian countries the PAs in Bangladesh are smaller in area and so the entire declared PA area may be earmarked as core area for suitable management interventions including assisted natural regeneration technologies. The interface landscape zones should therefore be delineated in each PA and managed in partnerships with local stakeholders.

Adequate trained staff need to be posted in the PAs as per the recently approved organogram. Separate institutional facilities and funding mechanisms need to be developed within FD in Bangladesh (with separate budget heads both for development and revenue heads) as being done by the federal and state Governments for PA management in India. Public-private partnerships as developed in India and Nepal are required in Bangladesh as well. A good start in this direction is already made by recently set up Aranayak Foundation with the assistance of USAID. Separate Wildlife Departments (as in case of Sri Lanka and Nepal) are not advised for Bangladesh at this stage in view of early stage of co-management development. However, separate Wildlife Wing may be set up within FD as being practiced in India.

As in case of Sri Lanka, there is a case for formulating a separate Wildlife and Protected Area Policy for institutionalizing co-management model in Bangladesh. Co-management models and approaches being developed under NSP for pilot areas need to be replicated in other PAs as well. Control of illicit felling, forest fires, forest land encroachment and grazing is only possible by involving local communities through co-management. Empowerment of local stakeholders will require development of village level institutions and development funds to be operated by communities themselves as is the case in Nepal and India. This approach of decentralized co-management matches closely with Bangladesh experience of developing user groups and community operated funds (e.g. ADB supported Forestry Sector Project and UNDP supported Fishery Project in Cox's Bazar). Appropriate linkages with biodiversity conservation and livelihoods programs through self-help groups and village development funds as mandatory in India and Nepal should be replicated for PA co-management programs in Bangladesh. Similarly the Vulnerable Group Development (VGD) concept implemented by the Government of Bangladesh may help identify user groups of poor who are in need of help under co-management activities. NSP has a provision of setting up a landscape development fund for which seed money will be provided by USAID.

International surge on biodiversity conservation as reflected in enhanced funding for environmental functions and services of forests and PAs has brought these issues in mainstream international discourse. Enabling policies and legislations compatible with relevant international conventions and protocols are being increasingly adopted by countries such as India and Nepal. With Kyoto Protocol coming in force, the value of PAs as carbon sink will increasingly attract funding from different funding mechanisms such CDM and Carbon Funds, which should be tapped through careful planning. India has moved ahead of other South Asian countries in designing and developing a portfolio of future projects for such funding under Kyoto protocol. Valuation of both tangible and

intangible benefits from co-management of PAs as being attempted in India need to be taken up in Bangladesh as well.

As in India there is a strong case for making provisions for the compensation to wildlife victims by FD. Similarly by insuring the local villagers for their life and property FD can develop co-management linkages with local stakeholders. Such provisions can be included in the draft Wildlife Act that is now under revision process. A wide public consultation is necessary for finalizing the revised draft Act in order to take on board co-management approach. As in case of the Indian Wildlife (Amendment) Act 2002, the applicability of community conserved areas and conservation reserves may be examined while revising the Bangladesh (Preservation) (Amendment) Act, 1974.. Other important issues including provisions for zoo upkeep rules and co-management rules, retention of FD revenue for PA improvement, separate budget head for wildlife management, etc. should also be considered while revising the Act.

## 6. Conclusions

Co-management practices have historically been implemented in forests that were open to local communities as common pool natural resources for their livelihoods. State property rights were established by colonial rulers as a result of which community-based forest use and management weakened. However, off late appropriate co-management practices have evolved in many South Asian PAs where local communities have taken collective efforts in the face of degrading forests and environment. Such initiatives have been further strengthened under donor funded participatory forestry and biodiversity projects. A number of co-management initiatives have proved successful in South Asian countries such as Nepal, India and Sri Lanka. In the process many relevant lessons have been learnt for co-management of PAs. The future success of co-management of PAs in Bangladesh would depend on successfully implementing such lessons in developing gainful partnerships with key stakeholders, who are empowered by enacting and implementing enabling policies and programs. Socio-environmental functions and services from forests and PAs in Bangladesh need to be adequately appreciated by policy makers. Earmarking new PAs and better co-managing the existing PAs in Bangladesh is necessary for *in-situ* biodiversity conservation, and also for checking loss of forest land and degradation of vegetation cover. Putting in place relevant institutional and financial mechanisms and sustainability tools is equally important for sustainable biodiversity conservation in Bangladesh.

## References

1. GEF (2003) *Making a Difference for the Environment and People*. GEF Annual Report 2003. Global Environment Facility, Washington DC.

2. Borrini-Feyerabend, G; Michel, P; Farvar, M T; Kothari, A and Renard, Y (2004) *Sharing Power. Learning by doing in co-management of natural resources throughout the world.* IIED and IUCN/CEESP/CMWG, Cenesta, Tehran.
3. HMG (1988) *The Master Plan for Forestry Sector.* His Majesty Government of Nepal, Kathmandu.
4. Kothari, A (2003) *Community-Oriented Conservation Legislation : Is South Asia Getting Somewhere?* Paper presented to South Asia Workshop for the World Parks Congress, Dhaka (June 19-21, 2003).
5. DeCosse, P J and Jayawickrama, S S (1996) *Co-management of Resources in Sri Lanka : Status, Issues and Opportunities.* USAID's Natural Resources and Environmental Policy Project, IRG, Sri Lanka.
6. Sharma, R A (1993) Socioeconomic evaluation of social forestry in India. *Ambio*, XXII (4) : 219-24.
7. Sharma, R A (1994a) Learning from the Experiences of Joint Forests Management. *Forests, Trees and People*, 24 : 36-41.
8. Sharma, R A (1994b) Participatory Wildlife Management in India. *Wastelands News*, X (1) : 25-26.
9. Sharma, R A (1995) Participatory Forest Management in India. *Ambio*, 24 (2) : 131-33.
10. World Bank (1996) *Staff Appraisal Report : India Ecodevelopment Project.* Agriculture and Water Division, World Bank, Washington, D C.