PARTICIPATORY WILDLIFE CONSERVATION INITIATIVES IN NEPAL

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Introduction

Although comprising only 0.09% of the global land area, Nepal possesses a disproportionately large diversity of flora and fauna at genetic, species and ecosystem levels. Out of the total 118 ecosystems identified by Dobremez (1970), 80 ecosystems are included in the current Protected Areas (PAs) of Nepal (HMGN/MFSC, 2002). Nepal is home to 861 species of birds (including six endangered pheasant species), about 640 species of butterflies, 6,500 species of flowering plants and 175 mammal species (DNPWC, 2004).

Nepal's rich biodiversity is a reflection of its unique geographical position as well as its altitudinal and climatic variations. The altitude ranges from 57 m (Mukhiyapatti of Dhanusa District) to 8,848 m (Mount Everest) above mean sea level (Amatya and Shrestha, 2002). It incorporates Palaearctic and Indo-Malayan biogeographical regions and major floristic provinces of Asia, creating a unique and rich diversity of life. Owing to its typical natural landscape and cultural characteristics, Sagarmatha (Mt. Everest) National Park and Royal Chitwan National Park (RCNP) were listed as World Heritage Sites in 1979 and 1984, respectively. The Koshi Tappu Wildlife Reserve, a wetland of international importance, was declared a Ramsar Site in 1987. Three other wetlands – the Beeshajari Tal (Lake), Ghodaghodi Tal and Jagadishpur Reservoir were designated as Ramsar Sites in 2003.

Nepal is signatory to various international conventions and treaties including CITES, Convention on Biological Diversity (CBD) and the Ramsar Convention, and has the responsibility of conserving and maintaining the country's major representative ecosystems, genetic diversity, unique natural and cultural heritages, and giving protection to valuable and endangered species (DNPWC, 2004). His Majesty's Government of Nepal (HMGN) has imposed restrictions on the export of 12 plant species and one forest product. In addition, 27 mammal species, nine bird species, and three reptile species have been given legal protection under the National Parks and Wildlife Conservation (NPWC) Act, 1973. Fifteen vascular plant species, 58 mammal species, 40 bird species, 13 reptile species, one amphibian species and two insect species are listed under various CITES appendices. Sixty species of non-endemic plants are regarded as threatened. Altogether, 27 mammal species are listed as threatened by IUCN: eight as Endangered, ten as Vulnerable, four as Indeterminate, and five as Insufficiently Known. Twenty-two bird species, 9 reptile species and 2 insect species are listed in IUCN's *Red List* (1995). Nine species of birds are regarded as threatened in Nepal. Altogether, 342 plant species and 160 animals have been reported as being endemic to Nepal (HMGN/MFSC, 2002).

Nepal has had long experience in wildlife conservation through different approaches. Its conservation policy has evolved from the early emphasis on species preservation and research with strict law enforcement practices, to a more conciliatory and participatory approach (DNPWC, 2004). Nepal embarked upon a modern era of wildlife conservation with the enactment of the National Parks and Wildlife Conservation Act in 1973. The Department of National Parks and Wildlife Conservation (DNPWC) presently oversees a network of 9 national parks, 3 wildlife reserves, 3 conservation areas, 1 hunting reserve, and 9 buffer zones around national parks and wildlife reserves, covering a total of 27,685.5 km^2, or 18.81% of the country's total land area. The management plans of RCNP, Royal Bardia National Park (RBNP) and the Buffer Zone Management Plan for

Sagarmatha National Park have already been approved by HMGN.

It has been realized that conservation cannot be achieved without the people's participation. So, conservation programmes are now being designed and implemented in different models ensuring the active participation of local communities in conservation, protection and utilization of biological diversity on a sustainable basis. A number of successes have been recorded over the years in the protection and management of biological resources and their diversity, particularly with protected ecosystems and species, community forestry, agro-biodiversity and mountain biodiversity (HMGN/MFSC, 2002). The participation of communities in the decision-making process is central to this success. The participatory conservation approach has gained momentum in the conservation of biodiversity of Nepal along with the sustainable use of resources and livelihood improvement of local communities since the late 1970s. Devolution and decentralization of rights and responsibilities to local communities for sustainable management of natural resources has built and strengthened cordial relations with the communities.

Participatory wildlife conservation models

Buffer zone (BZ) models around protected areas (PAs) and the landscape approach to biodiversity conservation are the major participatory wildlife conservation initiatives in Nepal, which are described below.

Buffer Zone (BZ) Management Model

The fourth amendment of the NPWC Act in 1992 incorporated provisions for Conservation Areas (CAs) and Buffer Zones (BZs). Subsequently, the Buffer Zone Management Regulations 1996 and Guidelines 1999 were approved to design programmes compatible with national park management and to facilitate public participation in the conservation, design and management of BZs. The amended NPWC Act makes provisions for 30-50% of the parks (or reserves) revenues to be retained for community development activities in the BZ. The revenue is disbursed through a Buffer Zone Management Committee (BZMC). The BZ Management Regulations are the only regulations to promote Community Forestry (CF) in the BZs and to improve the regeneration of forests by the community (DNPWC/MFSC, 1999).

BZ development is primarily focused on improving the socio-economic well being of local communities surrounding PAs, while restricting access to the PA. Conservation programs are designed to meet local needs and reduce the dependency of local people on PA resources by developing an alternative natural resource base in the BZ (HMGN/MFSC, 2002). Legal provisions allow BZs to be managed under community forest, religious forest and private forest structures (Sharma, 1999).

As of 2004, eight BZs have already been declared in different PAs – Royal Chitwan National Park, Royal Bardia National Park, Langtang National Park, Shey-Phoksundo National Park, Makalubarun National Park, Sagarmatha National Park, Koshi Tappu Wildlife Reserve and Royal Suklaphanta Wildlife Reserve. More than 127 VDCs are involved in sustainable use and conservation of biodiversity in declared BZs. In June 2005, HMGN declared the buffer zone of Parsa Wildlife Reserve covering 278 km^2. The new addition makes a total of nine buffer zones covering 3766.5 km^2.

Landscape Approach to Biodiversity Conservation

The landscape approach to biodiversity conservation aims for representation of all distinct natural communities, maintenance of ecological and evolutionary processes that create and sustain biodiversity, maintenance of viable populations of species, ecosystem resilience to large-scale disturbances and long-term changes and promotion of sustainable livelihoods.

Landscape level conservation is not new to Nepal, as many successful lessons have been learnt through the experiences in community forestry, conservation areas and the buffer zone programme. Declaring BZs around national parks and reserves with a view to developing compatible land use patterns adjacent to PAs to simultaneously address the growing needs of the people and the rapidly decreasing natural cover is an effective initiative in landscape conservation. NBS is committed to making efforts to link PAs with

wildlife-friendly corridors. Development of biodiversity landscapes through a holistic and integrated approach by incorporating all the ingredients of a landscape, namely national parks, reserves, conservation areas, buffer zones, national forests, community forests, farmlands and wetlands, with supportive policy regimes and plans would pave the way towards achieving landscape level conservation. Biodiversity conservation at the landscape level is practiced in two models in Nepal. The first one is the Minimum Dynamic Area Model, and the second one is Network Model.

The Minimum Dynamic Area Model is, by and large, the existing conservation practice in Nepal. This model emphasizes the importance of maintaining an existing habitat of an appropriate size and character, which is suitable for the maintenance of biological diversity, by isolating it from intensive land-use surroundings. The premise of this view is that the area available for nature reserve elements should be large enough to provide well functioning populations or communities. This approach emphasizes a better protection for the habitats that still exist in the PAs. This can be accomplished by establishing BZs in and around those habitats. Nepal has made significant progress towards the Minimum Dynamic Area Model by declaring nine BZs in and around the PAs.

The second model is the Network Model, which advocates the overall reduction of land use, protection of large areas for nature conservation, and creation of a network of corridors and connectivity or other small landscape elements. Terai Arc Landscape (TAL) jointly implemented by DNPWC, DoF, and WWF in collaboration with the local community and other stakeholders, is an example of this model as it is practiced in Nepal. It has connected eleven PAs that spread across the boundary of Nepal and India to ensure the conservation of globally significant biodiversity in the long run. The most important corridors and linkages under the TAL Programme are Khata Corridor, Basanta Corridor, Lamahi Bottleneck and Dovan Bottleneck in the lowland of Nepal. The other important activities conducted by the TAL Programme in a participatory manner are centered on capacity building, community management of forest resources and improving the livelihoods of the local people. Barandhabar Forest Corridor, connecting RCNP with the forests of the foothills of the Mahabharat range in the north, is a successful example of the landscape approach carried out at the initiation of the King Mahendra Trust for Nature Conservation (KMTNC).

Existing participatory wildlife conservation programs

A number of participatory conservation and development programs have been implemented by various organizations joining hands with the Department of National Parks and Wildlife Conservation (DNPWC) inside, outside and within the BZs of different PAs, which are described below.

Participatory Conservation Program (PCP)
Implemented by DNPWC with the support of the United Nations Development Program (UNDP), the PCP has been extended until June 2006 to complete the targeted works, particularly those relating to sustainability of the program and mainstreaming of target groups and the poor living in the BZs. The PCP activities have been launched in the BZs of seven PAs. The PCP has made considerable progress in institutionalizing the achievements and successes of the Park People Program (PPP) (WWF Nepal, 2004). The major activities carried out by PCP include providing policy and institutional support to the Ministry of Forests and Soil Conservation (MFSC)/DNPWC, strengthening community-based organizations such as User Groups (UGs) and User Committees (UCs), providing training for the members of UG/UC, and support for income generating opportunities. Other notable achievements were the institutionalization of the savings and credit scheme, the Biodiversity Conservation Facility through cooperatives, conservation education and awareness programs, and support for UGs for self-initiative after social and environmental benefits. PCP also provided support for the preparation of park management plans, resource profiles, habitat and natural resource management and infrastructure development (DNPWC, 2004).

Terai Arc Landscape Program (TAL)

In 2002, WWF Nepal began the Terai Arc Landscape (TAL) Program in collaboration with the MFSC, DNPWC, DoF, and local community-based organizations to "conserve the biodiversity, forests, soils and watersheds of the Terai and Churia hills in order to ensure the ecological, economic and socio-cultural integrity of the region" (WWF Nepal, 2004). It is based on the landscape approach of biodiversity conservation. The program activities have been implemented in the PAs, their buffer zones and outside the PAs. The goal of the program is to restore critical biological corridors and eliminate bottlenecks and provide linkages to 11 trans-border PAs in Nepal and India spreading over 49,500 km^2 to facilitate wildlife passage, while addressing the issues of the livelihood of the people in the region, especially those living in the fringe areas (DNPWC, 2004). TAL is home to flagship species like the Asiatic wild elephant, rhinoceros, and tiger. In Nepal, TAL encompasses 23,129 km^2 of 14 districts, including 75% of the remaining forests of lowland Nepal, the Churia hills and four PAs. This landscape has the second largest population of rhinos and one of the highest densities of tiger populations in the world. TAL covers three Ramsar sites and two World Heritage Sites. TAL was prioritized by HMGN as a priority program in the 10th Plan (2002-2007). Khata biological corridor is one of the crucial corridors in the TAL and provides a vital linkage between Nepal's RBNP and Katarniaghat Wildlife Sanctuary of India, especially for the movement of the Royal Bengal tiger (*Panthera tigris*). A monitoring team of rangers from the DFO at Bardia and the Research Officer from TAL Program confirmed that the Khata corridor was being used by Bengal tigers and Asian wild elephants in 2003 (WWF Nepal, 2004).

The program is directed to improve the livelihood of local communities to mitigate pressure on natural resources. Major income generating activities supported by the TAL Program were vegetable farming, livestock, retail shops and collecting non-timber forest products (NTFP). Since unsustainable extraction of fuel wood has caused major forest degradation, the TAL Program advocates alternative energy like biogas and improved cooking stoves. Community services like road gravelling, maintenance of school buildings, irrigation and drinking water schemes, and community health services are all part of the TAL program's conservation efforts. This was met with the overwhelming participation and contribution from the communities: local contribution (cash and kind) exceeded 40% on average of the investment needed in fiscal year 2003-2004 (WWF Nepal, 2004).

HMGN and MFSC approved the Terai Arc Landscape (TAL) Strategic Plan (2004-2014) in 2004. The major achievements of the TAL Program during the fiscal year included the preparation of the TAL Strategic Plan, restoration of biological corridors in critical areas, and partnership with local, regional and international stakeholders for synergy to have the desired impact on biodiversity conservation.

The Western Terai Landscape Complex Project was approved by GEF in 2003 and implemented to initiate conservation activities in the western part of TAL under the leadership of HMGN. A working arrangement was signed between MFSC, HMGN, SNV Nepal and WWF NP for the implementation of the Western Terai Landscape Building Program (WTLB) in 2004. A Central Support Unit (CSU) for the WTLB Program, jointly implemented by MFSC, SNV Nepal and WWF NP, was established at the premises of DoF (WWF Nepal, 2004).

Northern Mountains Conservation Project (NMCP)

The Northern Mountains Conservation Project (NMCP) is a joint initiative of WWF Nepal and DNPWC in Shey Phoksundo National Park (SPNP) and its BZ areas in Dolpa and Mugu districts. The objective of this integrated conservation and development project is to facilitate the local management of natural resources and improve the people's living conditions, while safeguarding this region's unique natural heritage. NMCP has two components: 1) People and Plant Initiative (PPI); and 2) Strengthened Actions for Governance and Utilization of Natural Resources (SAGUN). PPI was launched in 1997 and SAGUN in 2002. While the main objective of PPI is to address the issues of conservation and sustainable use of valuable plant resources, SAGUN is focused on strengthening the capacity of local communities for governance in the sustainable

utilization of natural resources (WWF Nepal, 2004).

Sagarmatha Community Agro-Forestry Project (SCAFP)

The WWF Nepal Program has initiated SCAFP in Sagarmatha National Park (SNP). The SCAFP is a multifaceted community-based conservation project, initiated in July 1996, to address the issue of deforestation in the Sagarmatha region.

One of the major achievements of the project is the preparation of the BZ Management Plan for SNP. The other notable activity was the preparation of operational plans and statutes of four community forest user groups. Regular project activities such as nursery management, plantation and forest regeneration were undertaken by local CFUGs and Monastery Management Committees through financial grant support.

Kanchenjunga Conservation Area Project (KCAP)

DNPWC implemented the Kangchenjunga Conservation Area Project (KCAP) in March 1998 with the technical and financial support of the WWF Nepal Program to conserve the natural resources of the region and promote sustainable development. A major achievement of the past year was HMGN's decision to hand over management responsibility of the conservation area to local communities. This conforms to the government's recent policy of giving management responsibility of selected protected areas to NGOs and local communities. The aim is to share the benefits generated by protected areas with the local people and to improve their socio-economic conditions. At present, the process of formally handing over management responsibility to KCAMC is underway. The KCA communities are very enthusiastic and committed toward this initiative. The first ever community management of a conservation area serves as an excellent example of conservation by the local people. These achievements are the result not only of community support, but also of strong local partnerships such as with the District Development Community-Taplejung and Decentralized Finance Development Project (WWF Nepal, 2004).

Annapurna Conservation Area Project (ACAP)

The Annapurna CA Project (ACAP) was officially gazetted in 1992 and the KMTNC was given the responsibility of managing it for 10 years. The ACAP has evolved from an experimental Integrated Conservation and Development Project to the largest PA (7,629 km^2) in Nepal. The project serves as a model throughout the Asia for integrating public participation in biodiversity conservation. It is based on a holistic and integrated approach, considering local people as partners rather than beneficiaries (HMGN/MFSC, 2002).

New Models of Protection and Management of CAs

NBS 2002 indicates that new models of PA management have been developed in the highlands and mountains – in the Annapurna CA, Kanchenjunga CA and Manaslu CA – where the army is not involved. It realized that the reliance on the army alone for protecting PAs should be reduced given the high cost of mobilizing the army. The DNPWC implemented the Makalu-Barun National Park and Conservation Area Project to demonstrate a new model for conservation. The project gives strict protection to the biodiversity of the park while developing sustainable use activities for the people who reside in the surrounding CA. Makalu-Barun NP is the Nepal's first national park east of Mount Everest NP to be managed without the help of the army. The local people who manage the resources are the real guardians. Recently, the rights and responsibilities to manage Sagarmatha NP, Shey Phoksundo NP and Sivapuri NP have also been given to KMTNC (HMGN/MFSC, 2002).

Tourism for Rural Poverty Alleviation Program (TRPAP)

TRPAP is implemented under the Ministry of Culture, Tourism and Civil Aviation (MoCTCA) with the technical and financial support of UNDP, SNV and DFID. The goal of TRPAP is to contribute to the poverty alleviation objectives of the government. The project aims to accomplish the task through review and formulation of policy and strategic planning for sustainable tourism (DNPWC, 2004).

CARE Nepal: The Buffer Zone Development Project

The BZ Development Project, implemented with the support of the European Union and DANIDA, is part of a broader integrated conservation and development program. DNPWC and CARE Nepal jointly implemented the Project in the BZ of RBNP with the objective of improving the livelihoods of local people of the BZ. The project successfully handed over a total of 8,957.75 ha of forest to 24 Buffer Zone Community Forest User Groups (BZCFUGs), benefiting 7,782 households. The project successfully completed its project cycle in July 2004. SAGUN has taken over some of the activities of BZDP in RBNP and SPNP (DNPWC, 2004).

Emerging participatory conservation initiatives

Following the success of the program's implementation through the participation of local community members, HMGN has approved new policies regarding wildlife conservation through the participatory approach. The NPWC Act 1973 was amended for the fifth time in 2004. The new amendment includes provisions for wildlife farming, reproduction and research; elephant domestication; detailed specifications of the provision of buffer zones and specifications relating to the exchange of wildlife species with other countries. Following are the new policies recently approved by the government.

New policy on protected area management

HMGN has approved a policy in-execution regarding the handing over of management responsibilities of protected areas to interested INGOs/ NGOs or local communities. The objective is to ensure maximum participation of local people in sharing benefits from conservation activities, while contributing to biodiversity conservation and environmental protection. The decision of HMGN to hand over the management responsibility is in conformity with the Tenth Plan (2002-2007) and ensuring local people's access to natural resources and equitable distribution of benefits.

Wildlife farming, reproduction and research policy

The Cabinet approved the "Wildlife farming, reproduction and research policy" in –execution 2060 on 28 August, 2003.

The protected species that may be permitted for farming include gharial crocodile (*Gavialis gangeticus*), blackbuck (*Antilope cervicapra*), impeyan pheasant (*Lophophorus impejanus*), crimson horned pheasant (*Tragopan satyra*) and cheer pheasant (*Catreus wallichi*). Other species included in the list are barking deer, spotted deer, sambar, rhesus monkey, hog deer, wild boar, snakes and all other bird species.

The seed animals for farming can be obtained from the DNPWC and the permission fee ranges from five thousand to forty thousand rupees. Permission for the farming of protected species could be obtained from the MFSC, while DNPWC has been authorized to issue permission for other species of wildlife.

Policy on the management of domesticated elephants

HMGN passed a policy for the effective management of domesticated elephants in the country on 16 September 2003. The policy in-execution aims to improve the breeding of domesticated elephants by improving the food quality and hygienic conditions of the Hattisars (camps for domesticated elephants and their handlers) and improving the health care system of the elephants. It also aims to register all domesticated elephants and reduce their impact in protected areas.

Out of the total 184 domestic elephants in Nepal, 81 are owned by the government. The government-owned elephants are used for eco-tourism, patrolling for poachers, wildlife monitoring, capturing problem animals, evacuating trapped animals and wildlife research.

Conclusion

The conservation policy of Nepal has evolved from an early emphasis on species preservation and research with strict law enforcement practices to a more conciliatory and participatory approach. It

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embarked upon a modern era of wildlife conservation with the enactment of the National Parks and Wildlife Conservation Act in 1973. His Majesty's Government of Nepal has approved three new policies, namely: 1) wildlife farming, reproduction and research policy; 2) policy on management of domesticated elephants; and 3) the new policy on protected area management. These policies have placed local communities in the center of the conservation program. Changing policy into practice is a very sensitive task and guidelines related to the new policies should be prepared soon for effective wildlife management practices in collaboration with local communities.

A number of community-based participatory programs have been implemented inside, outside and in the BZs of PAs. The Buffer Zone Management Model and the Landscape Approach to biodiversity conservation are successful approaches in the context of Nepal. Both approaches emphasize people's participation in program design and implementation. The landscape approach to biodiversity conservation aims for representation of all distinct natural communities, maintenance of ecological and evolutionary processes that create and sustain biodiversity, maintenance of viable populations of species, ecosystem resilience to large-scale disturbances and long-term changes and promotion of sustainable livelihoods. The BZ Management approach aims at making local communities self-reliant in forest products by initiating community forests and reducing biotic pressure in the core areas. Experiences show that people's participation is essential to sustainable conservation. It is crucial to win the support and stewardship of the local people in wildlife conservation by implementing conservation programs along with community development activities aimed at improving their socio-economic conditions.

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Table 1: Declared Buffer Zones (BZ) of parks and reserves

Protected Areas	Year gazetted	BZ area (km^2)	VDCs within BZ	Estimated population in BZ
Royal Chitwan NP	1996	750	37	242,000
Royal Bardia NP	1996	328	17	69,000
Langtang NP	1998	420	26	NA
Shey Phoksundo NP	1998	449	8	9,185
Makalu-Barun NP	1999	830	12	32,000
Sagarmatha NP	2002	275	3	13,000
Koshi Tappu WR	2004	173	13	172,000
Royal Suklaphanta WR	2004	243.5	11	74,000
Parsa WR	2005	298	NA	NA
Total		3,766.5	127	611,185