

**BUFFER ZONE POLICY ANALYSIS  
OF THE ROYAL CHITWAN  
NATIONAL PARK**

**TECHNICAL REPORT**

**King Mahendra Trust for Nature Conservation  
1998**

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## KING MAHENDRA TRUST FOR NATURE CONSERVATION

*Patron:* HIS MAJESTY KING BIRENDRA BIR BIKRAM SHAH DEV

*Chairman:* HIS ROYAL HIGHNESS PRINCE GYANENDRA BIR BIKRAM SHAH

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### PREFACE

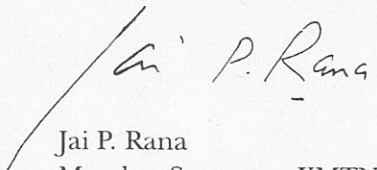
The King Mahendra Trust for Nature Conservation (KMTNC) was entrusted by the Save the Tiger Fund, National Fish and Wildlife Foundation (USA) to conduct a study on buffer zone management of the Royal Chitwan National Park (RCNP). While reviewing existing policies and legislative provisions, the study identifies the constraints and opportunities in managing the natural resources within the buffer zone. It also provides guidelines for policy and program interventions, including tourism potential for the sustainable development of the area.

Most of the protected areas require compatible land use patterns in their vicinities so that they do not become islands amidst growing industrialization and rapidly depleting natural resources, buffer zone development is a new and an innovative policy intervention that has emerged in Nepal only recently. Nepal's buffer zones have been developed to focus on the special needs of the local communities who are likely to be adversely affected by the protected areas and also to involve the community in a spirit of collaborative management.

I would like to express my sincere gratitude on behalf of KMTNC to Dr. Uday Raj Sharma, Director General of the Department of National Parks and Wildlife Conservation (DNPWC), and Resources Nepal who prepared the report. Mr. Anup Rajouria, Director of Programs, Mr. Narayan Dhakal, Senior Program Officer at KMTNC and Mr. Top Bdr. Khatri, Officer In-charge at KMTNC's Nepal Conservation Research and Training Center (NCRTC) deserve special thanks for their untiring efforts to make this study successful.

I am also grateful to the Exxon Foundation, U.S.A for providing financial support through the Save the Tiger Fund, a project of the National Fish and Wildlife Foundation, to accomplish this important endeavor.

I hope the findings of this study will be a valuable resource for designing future course of actions to develop the buffer zone of RCNP.

  
Jai P. Rana  
Member-Secretary, KMTNC



## PREFACE

The King Mahendra Trust for Nature Conservation (KMTNC) was established in the year 1972 in Kathmandu, Nepal. It is a non-profit organization dedicated to the conservation of Nepal's natural resources and the promotion of environmental education. The Trust has been successful in its efforts to protect the country's rich biodiversity and to raise public awareness of the importance of nature conservation.

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*Produced by King Mahendra Trust for Nature Conservation (KMTNC).*

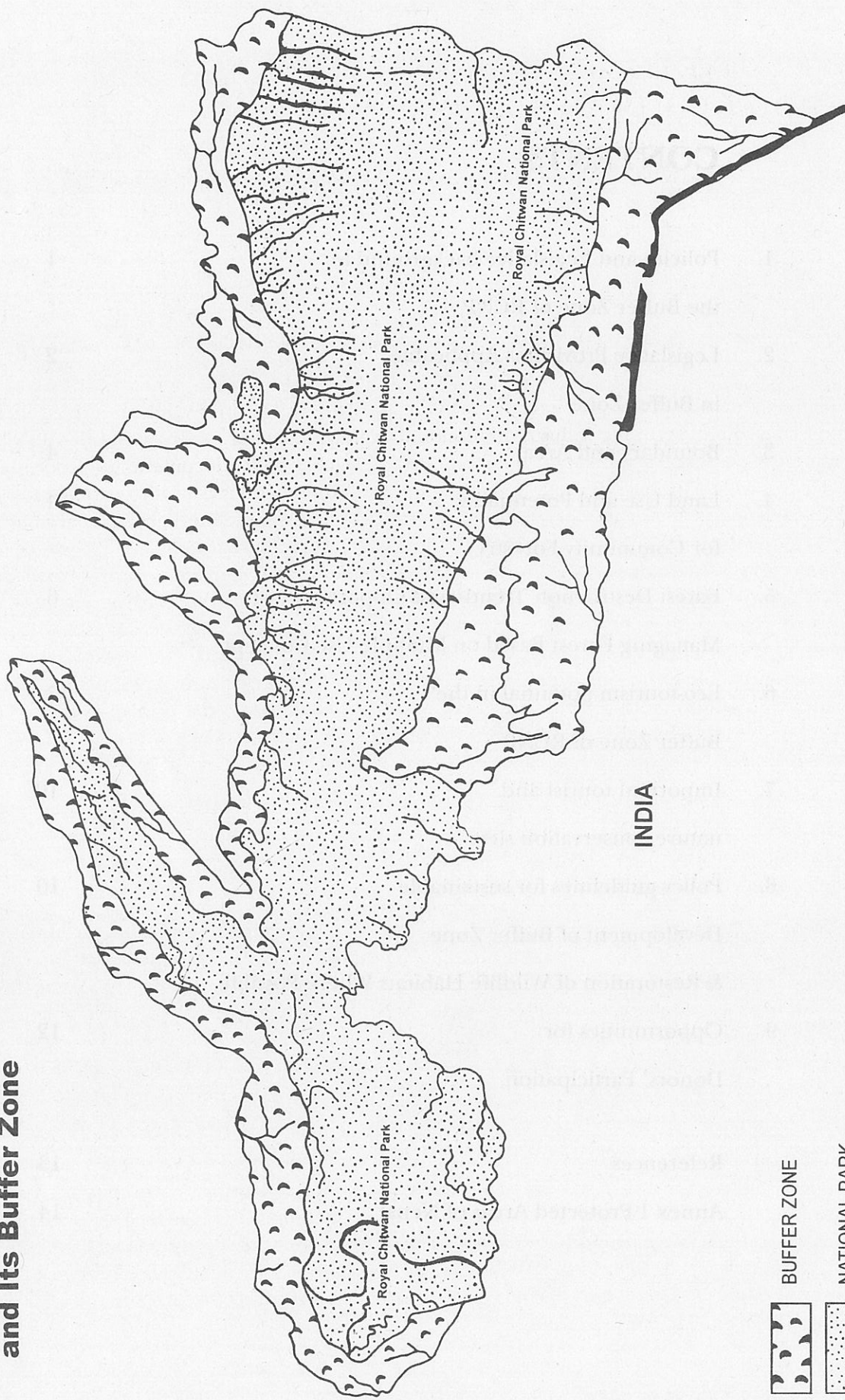
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**Map 1: Royal Chitwan National Park  
and Its Buffer Zone**



## BUFFER ZONE POLICY ANALYSIS OF THE ROYAL CHITWAN NATIONAL PARK

### POLICIES AND LEGISLATIVE BACKGROUND TO THE BUFFER ZONE OF RCNP:

The master plan of the forestry sector has identified the conservation of ecosystem and genetic resources as one of the long-term objectives. Nepal's network of protected areas, which covers more than 16.5% of land, is to accomplish this objective (Annex 1). The landmark legislation, the National Parks and Wildlife Conservation Act (HMGN 1973), facilitated the establishment of 8 national parks, 4 wildlife reserves, 3 conservation areas, 2 buffer zones, and 1 hunting reserve (Annex 1). This network of protected areas developed in the last three decades is vital for conservation of biodiversity as to the network represents most of the major ecosystems of Nepal. Nevertheless, the midhills ecosystems are under-represented.

Most of the protected areas require compatible land-use patterns in their vicinities so that they do not become islands amidst growing industrialization and rapidly depleting natural cover, buffer zone (BZ) development is a new policy thinking that has emerged in Nepal's policy documents only recently, in early 1990s. Traditionally, a buffer zone is only a protective layer where land is partially restricted (Mackinnon et al. 1986: 90). These layers have been only as a means to postpone the inevitable. Nepal's buffer zones have been developed to focus on the special needs of the local communities who are likely to be adversely affected by conservation measures. It has adopted the "Impact Zone" concept developed by Sharma and Shaw (1992). The concept calls for strict control of forests within the adjacent park or reserve, combined with intensified agriculture and forestry on public and private properties outside the park with intention of increasing the production of natural resources that are in local demand. Therefore, buffer zone may not necessarily include forests only; it can encompass settlements, agricultural lands, village open spaces, and many other landuse forms. This state-of-the-art concept adheres to the principles that community development program should be mobilized in the buffer zone for subsistence of local people so that the buffer zone land resources can be managed to its maximum sustainable level (Sharma and Shaw 1992).

The policy documents of 1980s of Nepal have indirectly subscribed to the traditionally understood buffer zone concept, in which the strategy is to create low-use area surrounding the parks. Such strategies could only be time-gap measures, which would eventually become ineffective as pressures start to mount and subsequently spill into the park itself.

The National Conservation Strategy (NCS) for Nepal (HMGN and IUCN 1988) has given emphasis to sustainable use of land and natural resources, which, although a general statement, can be interpreted that the lands in the surrounds of the PAs should not be allowed to degrade. The NCS has specifically pointed out in other places (pp. 51-52) that the forests outside the park must be halted from deforestation, the people should be made self-reliant in timber, fuelwood, fodder and other forest products, and local communities should be given the responsibility of managing the forest in accordance with "geographical conditions and social needs." The NCS for Nepal has recommended that regulated hunting be permitted in the buffer zone forests adjacent to the PA.

Perhaps, the most important focus of NCS (HMGN and IUCN 1988) in relation to BZ development initiatives to help take shape later in to-day's form was to give importance of giving opportunity and responsibility to the users to improve resource productivity and maintain natural heritage. It clearly stated that too much reliance on the government on management and protection of forest resources has led to inadequate management or over-harvests of resources. It has subsequently been channeling virtually up to three fourths of staff's time in some district to deal unsuccessfully with the problem of forest-land encroachment and illegal harvest of resources.

The Forestry Sector Master Plan Nepal (HMGN 1988a) has identified the need of "healthy production forestry to supply the people's needs," to alleviate pressure from the adjoining protected areas (p. 111).

The Plan has stated that meeting people's basic needs of forestry production is a pre-requisite to reduce the trespassing in the adjoining protected area by local people and to improve the relations with the local communities which could only provide the needed conducive environment for a successful conservation education or extension programs. As the PAs are major tourist destinations, without such arrangement, the Plan states, the areas would be burdened with increased fuelwood demand, the local prices would be inflated, and traditional life styles and values would be affected.

Although the Plan has raised the pertinent issues, it could not come up with necessary strategies for buffer zone development programs around Nepal's protected areas. The Plan's vision of buffer zone limits itself "to protect park and reserves from local community pressures" ( HMGN 1988b: p.72 ). Its focus is mainly towards production forest and wildlife management activities (p. 114). The Plan lacks the holistic vision for the buffer zone management that would have made the communities as true stakeholders rather than partners with liabilities.

#### **LEGISLATIVE PROVISIONS APPLICABLE IN BUFFER ZONE:**

National Parks and Wildlife Conservation Act, 2029 (HMGN 1973) and its subsequent amendments and BZ Management Regulations (HMGN 1996a) are two most important pieces of legislation to manage buffer zone of the Royal Chitwan National Park. The BZ is defined in the legal instrument of Nepal as the area surrounding a park or a reserve encompassing forests, agricultural lands, settlements, village open spaces and many other land use forms (HMGN 1996a). It provides an opportunity to the BZ warden to design programs that are compatible with national park management. The Act provides for 30-50 percent of the revenues generated by the park or reserve to be retained for community development. The money thus received can be spent through user committees after allocating a share to compensate for property losses from floods and landslides at the boundaries of park or reserve.

BZ Management Regulations and forthcoming BZ Development Guidelines (under preparation) provide detailed mechanisms to mobilize people's participation in community development:

- The households in a distinct settlement (called unit) are mobilized to form the user group.
- User group or several small user groups form user committee. The UC has a minimum of nine members elected by user group members or their representatives.
- The user committees perform coordinating and supporting roles between UGs and Buffer Zone Office to mobilize resources and to design and implement programs.
- The user committees facilitate the flow of the share of government revenue committed for community development to fund proposals submitted by user groups.
- The BZ Warden is the point of official contact for various UC offices spread over the buffer zone. The Chairpersons of the UCs are the members of the BZ Development Council of which the BZ Warden is the ex-officio member secretary.

The Buffer Zone Management Regulations is the sole regulations to promote community forestry programs in the buffer zone and to improve the stocking of forests by community management. The provision of community forests and other forestry operations described in the Forest Act are not applicable in the buffer zone. The committees formed under the Buffer Zone Management Regulations can also be entrusted with the management of fallen trees, grasses, and drift wood inside the protected areas.

The role of the Buffer Zone Warden to facilitate formation of User Groups/Committees and to coordinate the activities of various line agencies operating in the buffer zone is crucial. His/her active role in seeking cooperation of the government line agencies and NGOs to promote a growth pattern consistent with the protected area's objectives is equally important.

A major discrepancy in the Buffer Zone Management Regulations is that it has made no provision of granting government-owned land to groups of poor households (below poverty line) for leasehold forestry purpose. The original drafts of the legislation had made this provision (Sharma and Wells 1996), but



it could not make to the final version. Leasehold forestry program for poor, is an innovative mechanism of intensifying land use by involving local people. This mechanism has been provisioned in the Forest Act and is considered as an appropriate program in Nepalese context especially in the lowlands. It would be desirable to include this provision in the Buffer Zone Management Regulations because this mechanism not only benefits poor but also target a group heavily dependent upon park resources for their livelihood. Engaging them in economic activities in the buffer zone would greatly help reduce pressure on the park.

It has been envisaged by the Department of National Parks & Wildlife Conservation (DNPWC) that the Buffer Zone Development Guidelines will be prepared in next few months and the document will elaborate provisions described in the Buffer Zone Management Regulations to clarify matters causing ambiguities in implementation. UNDP financed Parks and People Project has raised concerns over lack of clarity in the Regulations which has led to several interpretations of Regulations.

There are few other regulations related to natural resource management applicable in the buffer zone. According to Local Development Act (LDA) and Regulations, the District Development Committees (DDC) can have access to the boulders and sand in the rivers flowing in the district. The DDC can authorize contractors to collect such resources as wells as drift wood lying on the river beds outside the park or buffer zone. It seems these provisions in the LDA conflict with the provisions made in the National Parks and Wildlife Conservation Act. On the other hand, the role of local governments has been carefully kept to a minimum in the management of national park/reserve or its buffer zone. The concerns on part of the government seem to be that any major role given to local political bodies would politicize the entire managerial tasks and lose the needed national perspective to manage national parks and reserves including their buffer zones. The user groups are considered apolitical bodies. The members of local political bodies can participate on their personal capacities as user group members. Since user groups can mobilize large sum of money for community development, friction between the user groups and VDC/DDC is emerging. Innovative approach must be sought to reduce this widening gap.

## CONSTRAINTS AND OPPORTUNITIES OF MANAGING BUFFER ZONE FORESTS OF ROYAL CHITWAN NATIONAL PARK:

### **BOUNDARY AND AREA:**

Boundaries of the buffer zone of Royal Chitwan National Park have been described in Nepal Gazette (HMGN 1996b). Because of the lack of accurate delineation on the map, it is difficult to estimate its area. The Parks and People Project (1997) estimates the Chitwan's buffer zone as 750 sq. km. An attempt has been made to delineate boundaries on the map (Map 1); more work would be required to get an accurate picture.

The buffer zone covers whole or portions of a total of 34 VDCs, of which 16 each fall in Nawalparasi and Chitwan districts. A total of 128 village wards are represented in the buffer zone, having a total population of 242,000 (PPP 1997).

### **LAND USE AND POTENTIALITY FOR COMMUNITY FORESTRY:**

A recent study conducted in 36 VDC in the surrounds of RCNP (most of these VDCs fall under the current boundaries of the buffer zone) suggests that cultivation and forested land are almost in equal proportion. (Table 1).

**Table 1. Land use pattern of the 36 VDC in the surrounds of Royal Chitwan National Park  
(Source: Banskota et al. 1997).**

LAND USE	HA	%
Sal	8,301	13.5
Degraded Sal	10,396	16.9
Tropical Mixed Hardwood	11,467	18.6
Khair and Sissoo	756	1.2
Total Forests	30,920	50.2
Grazing Land	2,172	3.5
Agriculture	28,509	46.3
Total	61,601	100.0

Table 1 clearly suggests that forestry resources must be mobilized to augment the sources of income of the local people. As a good share of these forests resources are in accessible distance of local communities, community forestry program can be successful in these areas. The household survey and area examination by Banskota et al. (1997) have revealed 27.8% of the total forest in the 36 VDCs in or near BZ of RCNP can be managed under community forests. A total of 12,088 ha of the total 43,466 ha (Table 2 and 3) that can be brought under community management is a significant resource not only to meet local needs of forestry products but also to provide an opportunity for community based eco-tourism programs (see below). The difference in the forest cover in Table 1 and Table 2 is because the data of Table 2 is based on VDC boundaries. A few large forest tracts that exist in the buffer zone have not been claimed although they lie entirely within their boundaries. For example, the Barandabhar Forest lying south of the East West Highway is 3,200 ha and is surrounded by two VDCs and two municipalities (Poudel et al. 1997).

**Table 2. Forests in Thirty Six Village Development Committees in the Neighborhood of Royal Chitwan National Park (Banskota et al. 1997).**

<b>VDCS OF CHITWAN DISTRICT</b>	<b>ha</b>	<b>VDCS OF NAWALPARASI DISTRICT</b>	<b>ha</b>
Meghauri	70	Pragatinagar	388
Gunjanagar	50	Dibyapuri	102
Sukranagar	50	Pithauli	1020
Gardi	250	Dumkibas	3000
Baghauda	1500	Narayani	50
Kalyanpur	1750	Kolhuwa	25
Ayodhyapuri	1600	Kumarwanti	365
Padampur	0	Arghauli	340
Kumroj	1500	Kawasoti	1500
Bachhouli	110	Tribeni Susta	1360
Bhandara	365	Naya Belhani	3400
Kathar	43	Parsauni	476
Piple	86	Mukundapur	50
Jagatpur	136	Amarpuri	54
Patihani	na	Rajhar	1000
Dibyanagar	6	Daune Devi	1020
<i>Total</i>	<i>14,150</i>		<i>7,516</i>
<b>VDCS, OTHER DISTRICTS</b>			
Nirmal Basti	100		
Manahari	10300		
Handi Khola	10500		
Thori	900		
<i>Total</i>	<i>21,800</i>		
<b>Total Forests in 36 VDCs</b>	<b>43,466</b>		

As the community forestry is considered an important program to protect and manage existing forests for the benefit of local people and to replant the deforested plains of the buffer zone. A few number of plantations and nurseries already exist due to the effort of government as well as of the non-governmental organization such as King Mahendra Trust for Nature Conservation (KMTNC). Biodiversity Conservation Network (BCN) funded plantation and nursery program through KMTNC in Kumroj and Bachhouli VDCs is one such success story. Other bodies involved include UNDP funded Parks and People Project initiatives in some VDCs and Timber Corporation of Nepal's plantations in other VDCs. About 2,091 ha of community managed forest already exist in the buffer zone in about 10 VDCs (Banskota et al. 1997). Careful interpretation of recent aerial photos and satellite imageries with the overlay of current BZ boundary can provide actual statistics on land use pattern.

In general, it seems that there is tremendous interest among farmers in planting trees on their properties. Planting trees in single rows along property boundaries, around houses or other under-utilized lands is an attractive program. Government support to promote private planting and handing over of government owned forests in the buffer zone to user groups/committees can both protect forest and bring back greenery in the villages. Their sustainable uses can meet villagers' requirements of fuelwood, timber wood, fodder and other non-timber forest products.

**Table 3. Potential Community Forest in 36 Village Development Committees in the neighborhood of Royal Chitwan National Park (Banskota et al. 1997).**

VDCS OF	ha	VDCS OF	ha
<b>CHITWAN DISTRICT</b>		<b>NAWALPARASI DISTRICT</b>	
Meghauri	102	Pragatinagar	388
Gunjanagar	7	Dibyapuri	408
Sukranagar	14	Pithauli	1020
Gardi	34	Dumkibas	3000
Baghaurda	41	Narayani	50
Kalyanpur	34	Kolhuwa	86
Ayodhyapuri	8	Kumarwanti	365
Padampur	0	Arghauri	680
Kumroj	1500	Kawasoti	1500
Bachhouli	97	Tribeni Susta	1401
Bhandara	40	Naya Belhani	0
Kathar	20	Parsauni	204
Piple	250	Mukundapur	50
Jagatpur	8	Amarapuri	7
Patihani	200	Rajhar	300
Dibyanagar	24	Daune Devi	0
<i>Total</i>	<i>2,379</i>		<i>9,459</i>
<b>VDCS OF OTHER</b>			
<b>DISTRICTS</b>	<b>ha</b>		
Nirmalbasti	50		
Manahari	200		
Handi Khola	0		
Thori	0		
<i>Total</i>	<i>250</i>		
<b>Total of 36 VDCs</b>	<b>12,088 ha</b>		

**FOREST DESTRUCTION TRENDS AND OPPORTUNITY OF MANAGING FOREST BASED ON MULTIPLE USE CONCEPT:**

Based on the change of forest area between 1978/79 - 1990/91 (FRSC 1994), deforestation in Terai including Chitwan Valley averages 1.3 percent per annum. The loss is primarily due to encroachment of forest for agricultural expansion. The land use comparisons between 1978 and 1992 in Chitwan BZ show that more forests and grazing lands were converted to agriculture (Banskota et al. 1997). The grazing lands are proportionately converted more than the forests. A logical explanation can be that alluvial plains are more suitable than the land in sal forest. Alternative explanation could be that forests are converted to agriculture in two phases. In the first phase, forests are cut down and are used for few years for grazing and only in the second phase land with shrubs and weeds are gradually encroached into agriculture. Land use comparison taking pictures of two time slots, probably could not fully reveal this conversion process.

The land use change estimation does not take the condition of the forests into consideration. Only 15 percent of Nepal's forested land have more than 75% crown cover; natural regeneration is extremely poor due to overuse (HMGN 1988a). The buffer zone forests of Chitwan seem no different. A large share of degraded forests and shrublands remain denuded and poorly stocked. Over-cutting of wood for fuel, lopping for fodder, and illegal harvest of timber to meet the local timber demand are common practices. Edson et al. (1988) concluded that for the Bachhouli VDC, a VDC close to Barandabhar Forest, present use pattern of the adjacent forest was unsustainable and could lead to complete depletion within 25-30 years. A worse scenario of hardship would be the case for other VDCs which do not have similar access to public forests, particularly, the Meghauli, Sukranagar, Dibyanagar, Padampur and Jagatpur which have very little or no forest in accessible distance.

Similarly, fuelwood scarcity is becoming a major problem in the park vicinities, but it has not yet reached the magnitude of the deficit found in other areas of the country (Sharma 1991). This is because of the presence of forests outside the park that are rapidly being denuded but are still fulfilling a substantial proportion of the demand and the national park forest has been an important source of fuelwood. The study showed that a 45% of the respondents claimed national park forest as source of collecting firewood (Sharma 1991). If the present trend continues, the pressure on the national park forest is bound to increase resulting in heightened park-people conflicts.

Adopting variety of strategies and programs can reverse the fuelwood and timber shortages in the villages in the buffer zone. Community management of village bordering existing forests and open spaces in Chitwan and Nawalparasi and promotion of private tree planting are the most important strategies to bring back the forest covers and increased stock rates. Process of handing over of forest must speed up to hand over all potential areas. The forests having inaccessible distance such as interiors of Barandabhar Forest should be managed to produce forest products on maximum sustainable yield basis. The theory of multiple use concept becomes relevant here: the planning of Barandabhar Forest should be done in such a way that it becomes attractive tourist sight-seeing, hunting opportunities are offered during tourist lean seasons, and protection and regeneration successes are effectively achieved by soliciting community protection on its peripheries.

Opportunity for self sufficiency of biomass in the buffer zone also lies if communities are motivated to divert park-generated revenue for promoting energy saving technologies that are well adapted to the local condition and are within the economic means of the most households in the area. People should be encouraged to adopt product alternate to wood and provide opportunities for farmers to adopt technologies that can help them to increase the efficient use of agricultural by-products. Strategy should be to help farmer's switch towards stall-feeding their livestock from fodder originating from their own farms or community plantations. Drift wood left behind in the river-beds on the village side of the park-bordering rivers or are collected during floods can be an important source of fuelwood and small timber to meet the local demand. Other important opportunity the Buffer Zone Management Regulations (HMGN 1996a) has provided is the provision of ban to export wood materials from the buffer zone to other parts of the country. This provision, if implemented properly, will stop the siphoning effect created due to shortages of wood materials in other parts of the country.

The provision of leasehold forestry program must be introduced in the Buffer Zone Management Regulations. Through this program landless and near-landless residents in the buffer zone are mobilized to produce forest products such as tree-fodder, grasses, fuelwood, poles, etc. not only to meet their household needs but also to provide a partial source of employment by selling resources to the richer segment of the society.

#### **ECO-TOURISM POTENTIALS IN THE BUFFER ZONE OF ROYAL CHITWAN NATIONAL PARK:**

Declaration of the buffer zone of Royal Chitwan National Park by His Majesty's Government of Nepal has given a great opportunity and challenge to park managers to promote eco-tourism in the buffer zone.

Especially since the buffer zone encompasses tourist hot-spot like Sauraha, where almost all hotels and lodges operate tourist activities, appropriate policy intervention has become even more crucial.

Promotion of sustainable tourism in and around the park can improve the living standards of local people. This is especially true for RCNP neighbors because there is a legal mechanism in place to divert 30-50% of park-generated revenue to finance the community development projects in the buffer zone. Some of this annual NRs. 12-20 million plus can be diverted to develop or strengthen tourism infrastructure in the buffer zone, if communities could be persuaded to develop this sector.

Given the fact that RCNP's 90% of total revenue is due to tourism activities, and this amount (NRs. 41.5 million in 1994/1995) is growing annually by 22.5% (Banskota et al. 1997), the tourism in and around Chitwan must be managed carefully. The haphazard unmanaged tourism growth coupled with the current lessee faire style of park management continues as in the present, it will certainly "kill the goose that lays the golden eggs." Some of the ugly sign are already noticeable: According to a recent visitor survey two thirds of the visitors perceived the problem of crowding and congestion in Sauraha and in the park (Banskota et al. 1997). For Sauraha area, it seems to have reached its capacity considering the present level of infrastructure and management. There is a wide spread agreement among conservationists that pressure on the park resources in Sauraha due to tourism activities including elephant safari, jungle walk, canoe ride, and jungle drive, has already led to habitat degradation of several important wildlife species. Increase in land price is encouraging Tharus and other indigenous people to sell their land thereby diminishing the cultural attractions of the area.

The present practice of "tourism management" is largely through spontaneous and uncoordinated private sector initiatives. The present park's practice permits only the seven concessionaires who have been awarded privileged long-term renewable contracts to take benefits from the wildlife tourism. The local people residing in the densely populated buffer zone have not been able to participate in the park-related tourism benefits to any considerable extent. The indication here, however, is not to suggest that they should be phased out from the park immediately; the point is that a limited number of these resorts inside the park should target for expensive group of clientele and should not bring themselves in competition with hotels outside the park. These resorts should be the main royalty-earners to the park. Some separation already exist (Table 4), but the current trend is that the quality of service in the resorts inside the park has been dropping because of increased tendency to offer discounted prices, a major concern of hotel owners outside the park (Pradhanang 1997).

**Table 4. Revenue and Employment Estimates Comparison Between the Seven Hotels inside the Royal Chitwan National Park and about 53 hotels outside the park in Sauraha**

1. Revenue Generation (NRs. million)	Inside hotels	Outside hotels	Total
a ) Tax Revenue	5.00	0.15	5.15
b ) Royalty	9.70	0.00	9.70
2. Employment (number)			
a ) Direct	1500	444	1944
b ) Indirect	6000	100	6100

Source: Pradhanang (1997)

The provision of buffer zone has given tremendous opportunity to improve upon the prevailing unhealthy situation. Especially, it has opened the avenue to the local communities to increase the economic benefits. The Baghmara Community Forest in Bachhouli VDC near Sauraha is a 400 ha plantation of sissoo and other species has been generating more than NRs. 300,000 additional revenue per annum due to tourism in recent years. The user groups looking after the community plantations can supplement their sources of

income by adopting suitable conservation and management practices which could achieve both nature-based tourism outcomes and conservation objectives. The examples are already available from Chitwan buffer zone, where the community forests not only provide firewood, fodder but also generate additional money from visitor entry fees and elephant safari, which becomes the part of the community fund. The extra incentive provided due to tourism benefits has already started a drive to re-forest other barren areas in the buffer zone.

Since one of the objectives of Eighth Five Year Plan (HMGN 1993) was to expand tourism activities to help alleviate poverty and raise living standards of the population, the Ninth Five Year Plan (2054-2059 BS) has also maintained this objective and emphasized lengthening the average stay of tourist. The community based nature tourism can play a vital role to meet these objectives. This approach will help achieve a balanced growth in wildlife tourism in Chitwan.

According to the provision of the Buffer Zone Management Regulations (HMGN 1996a) the industries which are potential threats to the environment can be stopped from getting licenses from the Ministry of Industry or from renewing their licenses to operate in the buffer zone. This provision provides an opportunity to the BZ managers to direct the development of the buffer zone towards a more tourist or environment friendly growth pattern. This type of conducive environment is critical for eco-tourism growth especially in Chitwan District where growth of industries is rapid. In many other counties, areas in the surrounds of the parks have been zoned for low density growth to get the similar effect. If eco-tourism planning of Chitwan buffer zone is done properly, a great deal of cooperation can be sought from various government line agencies and non-governmental organizations active in the area.

The Royal Chitwan National Park is experiencing a rising tide of visitors and if present trend continues, by the end of 2007/2008, the tourist number will be about 492,000 which is more than five times greater than the number in 1996/1997 (Pradhanang 1997). These visitors will bring diversified tastes and, perhaps, would be willing to spend more and may be demanding many services than the visitors in the past. To fulfill such tastes, one dimension that seems appropriate and can be complementary to nature-based tourism concept would be the village level tourism program (Pradhanang 1997). The cultural activities for tourists can include song and dance programs with interpretation, village tours by ox carts or horses, home visits, and interpretation of various village activities, rituals and religion. The villagers should be encouraged to produce and market handicrafts and food items. Diversification of tourist experience can also be done by providing opportunities to join in activities which include overnights in hides and machans, jungle survival course, horseback riding and mountain biking. The villagers especially would require skill-enhancement opportunities to mobilize local resources to become guides, produce tourism handicraft products, and be conversant in travel trade. The buffer zone initiative and revenue sharing commitments by the government for community development have provided a good ground to progress on this aspect.

In general, it seems, the benefit of tourism potential in the buffer zone is not fully utilized and the benefits accruing thus far has not been equitably distributed among the buffer zone residents, who have to take the brunt of livestock and crop depredation and even human casualties and injuries on everyday basis because of their habitation close to the park (see Table 4). The situation must change in favor of buffer zone residents. Encouraging local people, especially through user groups or user committees to adopt eco-tourism activities to augment their sources of income is one important compensation strategy which will help them financially for living close to the park. The members of user groups and committees should also participate in the village based tourism to take full advantage of their unique resources and cultures. Appropriate programs can be promoted with proper skill-enhancement efforts, granting of small loans and other facilitation and backstopping by the BZ Office and other political and non-political bodies. The foremost effort would be to increase the level of understanding and involvement of various levels of people: local communities, local leaders, political institutions, NGOs, business leaders, and national policy makers.

### **IMPORTANT TOURIST AND NATURE CONSERVATION SITES**

Unique natural sites in the Buffer Zone of RCNP should be recognized and special arrangements should be made to conserve them. Two such sites are the Barandabhar Forest and Madi Valley.

Barandabhar Forest is a unique site as it is the only corridor left to connect the Churia forests with the Mahabharat on the north. It possesses more than 20 wetland sites (Poudel et al. 1997) which are habitats and resting places for many resident and migratory birds. As the forest extends up to the Rapti River, the park boundary, it has created a 4 km stretch of undisturbed Rapti River. This stretch has become an important wetland site for gharial and mugger crocodile, as well as for birds. Because of easy access from the East-West Highway, Barandabhar Forest has attracted a large number of tourist and local city dwellers. Because of its business value, pressure is mounting on the park administration to open this forest for elephant safari and jungle drive, and to allow land for long-term lease contracts for opening resorts.

Madi Valley, on the other hand, is an isolated Churia valley on the southern side of the park. There are 4 VDCs in the valley and a stretch of unbroken forest of about 15,970 ha (Sharma 1990). Once an intact forest extending up to Nepal-India international border, it now is badly denuded with very little regeneration and undergrowth cover. The forest is also encroached by illegal squatters, especially towards the eastern end of the valley. The forest, however, can be brought back close to its original state by proper management. The Reu River that flows through the valley and forms the boundary of the park to a length has added to the beauty of the valley and habitat quality of wildlife. The flood plains in combination with the adjoining riverine vegetation have created prime habitats for rhinos, tigers and other wildlife of the park. The sand-banks of the Reu River can be attractive sites for tourists. The Madi Valley, despite its unique natural and cultural beauty has not yet received any major tourist flow. This is largely because of its remoteness and difficult access. The place can be promoted for eco-tourism activities through community based organizations.

Employing strategies that promote balanced and sustainable tourism growth in the vicinities of RCNP can reduce pressure on the park resources. As the share of the total foreign exchange earnings of the country is attributed to the protected area network (Wells 1993), the buffer zone tourism will provide a greater partnership and integration in the management of the buffer zone in general with the local communities. While the local communities will be benefiting on a continuous basis, the park and the buffer zone will be better equipped to manage increased visitor use and provide visitors with quality experience and facilities. It will also help locals to appreciate the value of conservation of natural and cultural heritage.

### **POLICY GUIDELINES FOR SUSTAINABLE DEVELOPMENT OF BUFFER ZONE AND RESTORATION OF WILDLIFE HABITATS WHERE POSSIBLE**

- 1 The buffer zone of Royal Chitwan National Park should be managed based on a carefully prepared management plan that addresses forest resource management, community development, community-based tourism, and cooperation with line agencies of the government, non-governmental organizations and other donors.
- 2 A balanced development both in community development and nature conservation in the BZ should be promoted through the mechanism of user groups and their committees by channeling park generated revenue as stipulated in the BZ Management Regulations. It should be ensured that the user committees formed are apolitical and are committed to the development of buffer zone.
- 3 The buffer zone office should provide active facilitation and backstopping in the preparation of development proposals by the user committees.
- 4 The BZ Development Council, represented by UC chairmen and a few others, should select proposals for funding based on their merit. A set of criteria should be developed including voluntary pledging of labor, commitment to maintain and repair the structure after completion, and a large number of user group members benefiting from the project.
- 5 The BZ Warden should promote formulation of projects that are relevant to conservation and that



- would help maintain the natural and cultural integrity of the park and its surrounds, while being useful to the communities. The programs to create barriers such as barbed wires, trenches, bio-fences, electric fences, or their combination to contain wild animals in the park to reduce crop and livestock depredation should receive high priority.
- 6 The forests and barren lands in the BZ adjoining villages should be managed as community forests. The operation plans of community forests should incorporate provisions to allow operation of community-based tourism activities. If the user committees would like to introduce elephant safari in their forests, elephant number should be fixed based on the size of the forest. The fodder required for the elephant(s) should come entirely from the community forest. This provision should be strictly applied in order to prevent illegal grazing of elephants in the park and to ensure the health of the animal.
  - 7 Special sites such as Barandabhar and Madi Valley should be managed separately based on carefully prepared plans. In general, the core areas of Barandabhar Forest should be controlled against illegal grazing and wood cutting. The core area should be free from any permanent structures that would hinder the movement of wildlife. The wetlands should be protected from fishing, hunting and other disturbances. The peripheral areas on the east and west sides, not exceeding 300 m from the village side, should be managed as community forest with provisions for eco-tourism activities.
  - 8 The policy of granting small parcels of government-owned land to groups of poor households as practiced by the Forest Department should be introduced in the buffer zone also.
  - 9 Export of firewood and timber from BZ forest should be banned as practiced now.
  - 10 BZ area should be considered a low development zone where licenses to industries not clearly tourist or environment friendly should be banned and renewable of licenses of such industries should be disallowed. The land use of buffer zone should be planned in a way to promote rural landscape and natural beauty.
  - 11 To diversify tourist experience and lengthening their stay in Chitwan, culture-based tourism should also be promoted. Local communities should be motivated and trained to take benefit of their potential resources.
  - 12 Tourism plan should be prepared with an aim to benefit local communities. Park management should create situation so resorts inside the park continue to operate on competitive basis (preferably through global tenders) cater their services only to expensive clientele and earn significant revenue for the park. As one half of the revenue is plowed back for community development, resentment towards these hotels should diminish. Hotels in the buffer zone should encourage clients to visit community forests. Higher park entry fees as compared to the buffer zone forest, for example, could help create this situation.
  - 13 A portion of conservation fees paid by hotel owners operating inside the park to the King Mahendra Trust for Nature Conservation should be utilized to maintain tourism infrastructure such as roads, trails, machan and camp sites in the park or to add new ones. Creation of Biodiversity Trust Fund for this purpose should be considered.
  - 14 Tourist spots in the buffer zone should have proper waste disposal system, provision of recycling, and adherence to principle of economy in the use of water and energy. Tourist code of conduct should be enforced and tourist safety and high hygiene standards assured.
  - 15 Public facilities (visitor centers, souvenir shops, amphitheatres, dissemination of park brochures and booklets, etc.) should be managed by local communities for small fees or profits.
  - 16 As a large number of park visitors arrive in Chitwan for wildlife experience, wildlife viewing should be incorporated with the opportunities to learn about the biodiversity of the park.

### **OPPORTUNITIES FOR DONORS' PARTICIPATION**

Donors' assistance in the development of buffer zone can be valuable in the following areas:

- 1 Capabilities of user committees should be improved in order for them to function effectively in organizing themselves properly, mobilizing resources, and developing human resources to undertake income generating activities. Capacity building of the user committees is required where donors can make financial or technical assistance.
- 2 In order for the user committees to compete for fund of park revenue, they need to be trained in preparing proposals through participatory planning process, in implementing the plans, record-keeping, and in evaluating their constrains and successes. The capacity building in this respect will be necessary where donors can effectively participate.
- 3 Although a large sum of money is available to the community annually from the park under the provision of revenue sharing concept, additional financial support would still be required to meet community's demand for development. Donor's support would be valuable to fund proposal that could not be accepted by the BZ Development Council because of shortage of fund.
- 4 It is required by the BZ Management Regulations that the BZ Warden annually surveys all park bordering rivers to assess the damage due to riverside erosion and present the statistics to the BZ Development Council to consider for compensation. Changes in river courses cause engulfing of private lands into the park that needs to be accurately mapped to the satisfaction of District Land Tax Office. Similarly, the park land excluded out due to change in river course must be identified in the map before handed over to the community for plantation. As park rangers are not adequately trained to map lands to the standards required by the District Land Tax Office, technical assistance would be valuable to do this job professionally and set the standard of work for the future.
- 5 BZ Warden would require technical assistance in preparing the management plan of the buffer zone and eco-tourism plans for the area.
- 6 Donor's assistance would be valuable in designing and conducting training courses to enhance the skills of villagers, especially in the field of nature guide, handicraft manufacturing, travel trade, and language and communication skills.
- 7 As buffer zone is a recently established protected area, an investment in infrastructure would be necessary in order for the warden to effectively manage the buffer zone forests and administer the area as required by the BZ Management Regulations. A buffer zone headquarters complex, four sector offices for rangers and about 10 guard posts for scouts for protecting large forests such as Barandabhar and Madi Valley are of immediate necessity.
- 8 To increase the mobility of the BZ staff, one four-wheel drive vehicle, 4 motorcycles and 12 bicycles would be immediately required, where donors can contribute.

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## ANNEX 1

**PROTECTED AREAS OF NEPAL**

No.	AREA	
1.	Royal Chitwan National Park	932
2.	Langtang National Park	1710
3.	Sagarmatha National Park	1148
4.	Rara National Park	106
5.	Shey-Phoksundo National Park	3555
6.	Khaptad National Park	225
7.	Royal Bardia National Park	968
8.	Makalu Barun National Park	1500
9.	Royal Shuklaphanta Wildlife Reserve	305
10.	Koshi Tappu Wildlife Reserve	175
11.	Parsa Wildlife Reserve	499
12.	Shivapuri Watershed and Wildlife Reserve	144
13.	Makalu Barun Conservation Area	830
14.	Annapurna Conservation Area	7629
15.	Kanchanjunga Conservation Area	2011
16.	Buffer Zone of Royal Chitwan National Park	750
17.	Buffer Zone of Royal Bardia National Park	460
18.	Dhorpatan Hunting Reserve	1325
	TOTAL	24,272
	PERCENT TO THE TOTAL COUNTRY'S LAND	16.5

*Sources: DNPWC (1996), PPP (1997), WWF and DNPWC (1995)*