

Conservation governance in Nepal: protecting forest biodiversity and people's livelihoods

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To reduce adverse impacts of protected areas on local people and adverse impacts of people on protected areas, Nepal introduced buffer zones whose revenue – often from tourism – is reinvested for local development under the management of community user groups.



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Nepal's approach to forest conservation has shifted from strict protection to more participatory practices involving sustainable use

Although a small country, Nepal possesses disproportionately rich biological diversity at the ecosystem, species and genetic levels – a result of the country's unique geography, with rapid change in altitudinal gradient and associated variability in eco-climatic conditions. This biological diversity is closely linked to the livelihoods and economic well-being of rural communities.

Nepal is predominantly an agrarian society, with forestry an integral part of agriculture and rural livelihoods. For instance, crop production is dependent on livestock manure which is sustained by fodder from the forests. Fuelwood is the principal source of rural energy. Forests (including other wooded land) cover 5.8 million hectares, about 40 percent of Nepal's total land area (Department of Forests, 2010; DNPWC, 2009a). The forests range from tropical to alpine scrub and are crucial for maintaining

ecological balance as well as meeting the livelihood requirements of the majority of rural people. Forests also contribute significantly to other sectors of the national economy such as agriculture, water resources, environmental conservation and community-based village tourism. Their conservation is important in view of both the number of globally threatened wild plant and animal species and the diversity of ecosystems they represent (MFSC, 2002).

Nepal has witnessed paradigm shifts in forest management approaches since the beginning of the twentieth century, from strict protection to more participatory practices involving sustainable use (Khatri, 2009). The country's forest policies are strongly built on traditional

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practices but have evolved through time and are influenced by national development plans and strategies. In other words, they address both development and conservation imperatives of the country.

This article highlights the country's strategy for participatory conservation, emphasizing a buffer-zone mechanism designed to reduce the adverse impact of protected areas on the livelihoods of local communities and vice versa. It is based on literature review and the author's personal experiences.

MANAGEMENT OF NEPAL'S FORESTS

Almost all of Nepal's forests are owned by the State. Nepal has only 2 360 ha of private forests, and most of these holdings are small (less than 1 ha). Around 21 percent of the forests are now managed as community forests, with a management plan approved by the government. Smaller areas are classified as leasehold, religious and protected forest (see Box and Table 1).

Nepal has made substantial endeavours to manage its natural resources. The government has designated 20 protected areas, including ten national parks, three wildlife reserves, seven conservation areas and one hunting reserve. These protected areas now cover a total of 3.4 million hectares, which is roughly 23 percent of the total land area of the country.

Nepal's first and largest conservation area, the Annapurna Conservation Area, is globally considered a model for conservation and development. With an area of 762 900 ha, it is home to over 100 000 residents of different cultural and linguistic groups. The Annapurna Conservation Area Project (ACAP) promotes integrated conservation and development in which local communities, organized in user groups, are the principal actors and ultimate beneficiaries. To replicate the success of ACAP, the government has designated

Management of Nepal's national forests

Protected areas are set aside for conservation of flora and fauna.

Government-managed forests are managed by the Department of Forests through its own management system.

Community forests were implemented according to the Forests Act of 1993, primarily for two reasons: to reverse the harm that came about from the nationalization of the forests in the early 1960s and to empower local communities through usufruct rights. Today, 14 572 user groups are actively engaged in the protection and management of community forests. Almost 800 user groups comprise women's committees, which manage more than 23 000 ha of community forest (Department of Forests, 2010).

Leasehold forests are intended to reduce the poverty level of the poorest farmers through the promotion and wise use of forest products. Through a joint initiative with the International Fund for Agricultural Development (IFAD), the Government of Nepal aims to lease forests to 4 918 user groups to improve the income of about 43 800 poor households in 22 districts through integration of forestry with livestock development.

Religious forests, which are spread across 22 districts, have been handed over to religious institutions or groups for the conservation and wise use of forest products. The forest products from these forests cannot be used for commercial purposes.

Collaborative forests were piloted in eight Terai districts of Nepal as a result of the forestry policy of 2000 to widen stakeholder participation and resource sharing. The initiative includes guidance for a landscape approach to conservation. However, the approach has not yet been incorporated in the Forest Act 1993 to make it binding. Collaborative forests currently have more than 800 000 beneficiaries.

Protected forest is a category designated for special purposes. The government can designate any forest area as protected for its religious, cultural or scientific significance. To date only one forest area, at Latikoili in Surkhet District, has been designated in this way, to safeguard an archaeological site.

Protected area community forests include all forests in buffer zones and conservation areas. These forests are exclusively protected and managed by local communities to meet basic needs for timber, woodfuel and fodder. They differ from community forests within buffer zones only in that the sale of forest products from these forests is regulated to ensure sustainability.

TABLE 1. Forest management categories in Nepal

Category	Total area (ha)	No. of households involved
Protected areas	3 400 562	
Government-managed forests	1 044 467	
Community forests	1 243 897	1 672 007
Leasehold forests (ultrapoor and industries)	27 540	4 918
Religious forests	574	
Collaborative forests	17 997	136 463
Protected forests	162	
Protected area community forests	92 801	43 504
Total forest land	5 828 000	1 856 892

Source: Department of Forests, 2010; DNPWC, 2009a.



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Nepal's participatory conservation programmes provide local communities with the motivation to manage and use natural resources sustainably

additional areas such as Kanchenjunga and Manaslu as conservation areas.

Nepal's pioneering experience with participatory conservation programmes (community forestry, conservation areas) has been rewarding and has provided local communities with the motivation to manage and use the natural resources sustainably.

settlements, agricultural land and other land use types. In each park, the buffer zone support unit implements initiatives through community mobilization. The community mobilization principles advocate the formation of community-based organizations such as user groups, user committees and buffer zone manage-

ment committees. As in ACAP, user groups formed at the settlement level are responsible for the planning, management and supervision of the activities implemented with resources received from buffer zone revenue (Figure 1). As mandated by the Buffer Zone Management Regulations, a share of the revenue received from the buffer zone is to be spent for local development through the user groups (Figure 2).

The idea is to reduce the negative impact of local communities on protected area resources and thus help conserve biodiversity by providing alternative livelihood and income-generating opportunities – for example in vegetable farming, beekeeping, animal husbandry (poultry, goats and pigs), handicrafts, souvenir shops, hotels, restaurants and nature tourism – or to compensate local communities for the losses they incur when a protected area is declared.

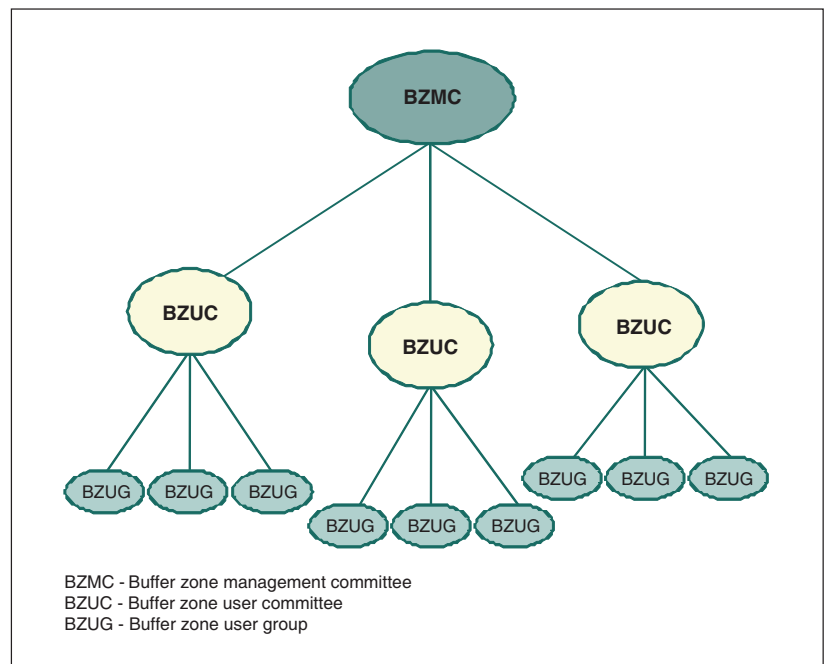
Since 1998, the government has invested 337 million Nepalese rupees

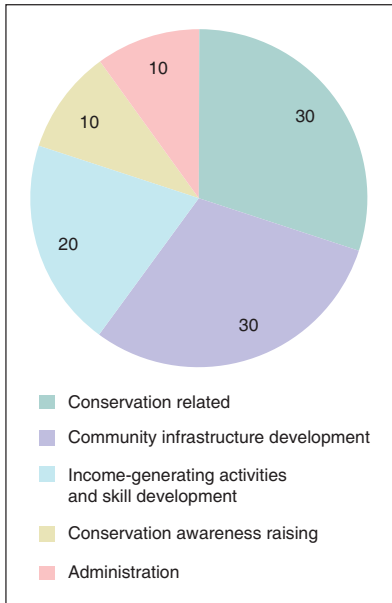
PARTICIPATORY APPROACH TO CONSERVATION IN PROTECTED AREAS: BUFFER ZONES

Successful community-based resource management initiatives like the community forestry programme and the Annapurna Conservation Area Project encouraged the Government of Nepal to embark on a participatory approach for protected area management. In 1992, the government amended the National Parks and Wildlife Conservation Act 1973 to authorize park authorities to declare buffer zones at the peripheries of parks and reserves and allow 30 to 50 percent of the revenue generated from park fees (user fees, ecotourism services, etc.) to be reinvested for local development. Subsequently, the Buffer Zone Management Regulations 1996 and the Buffer Zone Guidelines 1999 were framed to facilitate meaningful participation of local communities.

The buffer zones comprise forests,

1
Institutional mechanism of buffer zone institutions





2
Budget allotments for investment of revenue received from the buffer zone (%)

(US\$4.6 million) for nine buffer zone management committees to undertake conservation and development activities (Table 2). Chitwan National Park has received the highest share.

The case of Chitwan National Park

Chitwan National Park was gazetted in 1973 as Nepal’s first protected area and is a major tourist destination in Asia. The total area of the park is 93 200 ha.

The Chitwan National Park buffer zone programme started in 1996. The buffer zone area comprises 75 000 ha and is spread across three districts, Makwanpur, Parsa and Nawalparasi (Figure 3). There are approximately 800 settlements within the buffer zone with a population of more than 225 000 people comprising almost 37 000 households. A total of 1 470 user groups (687 female, 724 male and 59 mixed) have been formed at the settlement level; they are federated into 21 user

Sustainable management of park natural resources presents income-generating opportunities, for example in production and sale of handicrafts



Biodiversity in the buffer zone is protected through provision of alternative income-generating opportunities for local people



TABLE 2. Revenue reinvested in buffer zones

Protected area	Period of release	Budget released (rupees)
Chitwan National Park	1998–2009	247 621 584
Bardia National Park	1999–2007	19 836 157
Langtang National Park	2000–2007	19 531 423
Sagarmatha National Park	2005–2009	40 788 257
Parsa Wildlife Reserve	2008–2009	5 262 188
Suklaphanta Wildlife Reserve	2009	1 109 552
Sheyphoksundo National Park	2009	2 044 951
Makalubarun National Park	2009	1 395 142
Total		337 589 254 (US\$4 624 510)

Source: DNPWC, 2009a.

committees. A buffer zone management committee is responsible for the overall management and allocation of buffer-zone resources.

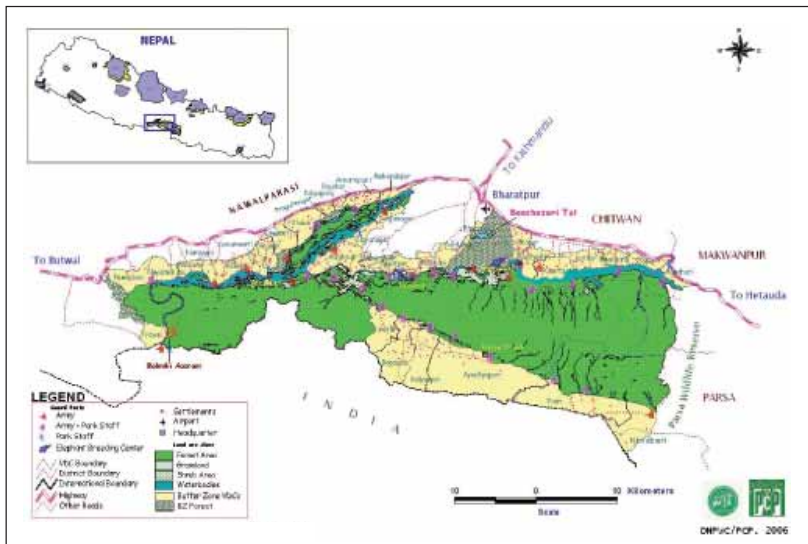
To date a total of 247 million rupees (US\$3.3 million) has been invested in a

wide range of activities, including but not limited to:

- river control;
- compensation for loss of cultivated land;
- development of infrastructure such

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3
Map of Chitwan National Park and its buffer zone

as roads, trails, schools and irrigation canals;

- barriers to animals such as trenches and solar fences;
- community forest management and wetland management;
- livelihood promotion activities such as vegetable farming, beekeeping, bio-briquette production, poultry farming, fisheries, non-wood forest product based enterprises and development of microcredit and cooperatives;
- community based anti-poaching activities;
- study tours to help local people develop additional livelihood opportunities.

These activities have contributed to improving the buffer zone as habitat for people and wildlife. They have increased its physical capital through infrastructure improvement, its human resource capital through development of capacity for buffer zone management and its financial capital through savings and credit schemes – with a huge social capital as a result.

Buffer zone challenges

Protected areas such as Chitwan, Sagar-matha, Langtang and Bardia National Parks generate substantial revenue from tourism and therefore can afford to reinvest a substantial amount in local development. Despite the progressive policy on participation and empowerment, the revenue to sustain these protected areas largely depends on the flow of tourism. Wherever tourism has been abundant, the revenue has also been abundant. Protected area managers have been able to promote the value of conservation as people have seen and received benefits.

Support is more problematic, however, for other protected areas that are

A share of buffer zone revenue is spent for local development, for example construction of this irrigation canal



resource poor and have some level of conflicts emanating from wildlife (see Box opposite), even though they are as important for biodiversity conservation as the highly visited areas.

One way to address the resource gap would be to create a basket fund in which revenue generated in resource-rich protected areas could be used to support neighbouring areas that are poorer. But it remains to be seen whether the stakeholders of the resource-rich protected areas would be willing to share their revenue with others in the long term.

DISCUSSION

Participatory management of forest resources represents a true reform of forest governance in Nepal. It has resulted in the involvement of a wide spectrum of stakeholders and pluralistic institutions, including more than 21 000 user groups having over 11 million beneficiaries. Community forestry, buffer zone and leasehold programmes (described in the Box on p. 35) have also contributed to poverty reduction and the improvement of local livelihoods.

Nepal's success in conservation is a product of commitment, stewardship and trust on the part of both the government and local people. However, continued innovation is necessary to replicate and upscale the best practices and lessons learned across the country. Institutional capacity must be reoriented to meet



Participatory management of forest resources in Nepal has engaged more than 21 000 user groups having over 11 million beneficiaries

Conservation and wildlife conflict

In Nepal, both politicians and the general public largely view conservation initiatives in terms of protecting nature and wildlife and avoiding conflicts between wildlife and people. Yet with increases in the number of protected areas, human-wildlife conflict has become a serious problem, with crop depredation, physical damage to people and property and human casualties from major wildlife species such as rhinoceroses, tigers and elephants. From 2006 to 2009, 51 people lost their lives to wild animals (Table 3). Such conflicts are a major concern for people living in and around protected and forest areas.

Paradoxically, the success of community forest management has also contributed to the development of conflicts. The middle hills, which were once denuded, are now lush with green cover and again able to harbour wildlife. However, colonization by wild prey species has been slow, and the incidence of child lifting by leopards in the middle hills has risen in the past few years.

Given the incidence of casualties, the government has recently devised guidelines for providing financial compensation for wildlife-related loss of lives, physical damage to people and property, and livestock and crop depredation (DNPWC, 2009b; Table 4).

TABLE 3. Human casualties by major wildlife species, 2006–2009

Year	Number of casualties by species		
	Tiger	Elephant	Rhinoceros
2006	8	7	5
2007	0	14	2
2008	2	6	3
2009	2	0	2
Total	12	27	12

Source: DNPWC, 2009a.

TABLE 4. Compensation guidelines for wildlife-related loss

Category of loss	Compensation (rupees)
Minor physical damage	5 000
Seriously wounded	50 000
Loss of life	150 000
Loss of livestock	10 000
Loss of house/shed	4 000
Loss of stored grains	5 000
Loss of food and fruit crops	5 000

Source: DNPWC, 2009b.

changing aspirations of the people for better services and delivery, livelihood improvement, conflict mitigation and their increasing role in the conservation and management of protected areas.

Nepal is a developing country, and its development imperatives – including those in other sectors such as agriculture, water, rural development, energy and transportation – have a direct bearing on its forest resources. The policies of the various sectors sometimes conflict or contradict one another because there is no appropriate mechanism to ensure compatibility during the policy formulation process. Moreover, a national land-use strategy and policy have not yet been formulated, and the demand for forest land for infrastructure development is high. About 23 laws in other sectors contradict forest law.

The natural resources sector has suffered greatly from the political turmoil of the past decade. The sector has been a fertile ground for exploitation by politicians seeking votes; over the years the country has lost a significant share of its forest resources through the practice of providing forested land for resettlement and associated activities. The government should disallow the provision of forest lands and should develop more innovative ideas for assisting genuinely landless people, such as through purchase and distribution of private lands. Nepal cannot afford to lose further precious forest assets. In order for the forest sector to prove its relevance and position itself strongly in the national development agenda, it is urgent to educate and inform policy- and decision-makers on the environmental and economic benefits that forest resources provide (including their contribution to gross domestic product [GDP], local income, livelihoods for forest-dependent people and conservation values) as well as on the new development opportunities to be reaped from climate change and carbon trading. Sensitization and

awareness could encourage lawmakers to make the environment, conservation and development agenda one of the priority areas of the new constitution.

CONCLUSION

Nepal has passed through various stages of experimentation and learning in its bid to conserve and manage its rich biological resources, but its recent participatory biodiversity conservation approach has perhaps been the most instructive and successful. Today, after 13 years of experience with buffer zones, it has become clear that protected area management and local people are work-

ing collectively to support and advance each other's needs. In this win-win situation, local people can receive financial support for their community development activities, while protected areas benefit from the involvement of local people in their planning and management. This partnership has resulted in the development of natural, social, financial, human and physical capital – constituting a strong foundation for environmental governance. The integrated and participatory approach has given people a greater appreciation of conservation and a sense of ownership towards the protected areas. ♦



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