

Conceptual and legal issues in the designation and management of conservation areas in Nepal

JOEL T. HEINEN^{1*} AND JAI N. MEHTA²

¹Department of Environmental Studies, Florida International University, Miami, Florida 33199, USA and ²Yale School of Forestry and Environmental Studies, 205 Prospect Street, New Haven, Connecticut 06511, USA

Summary

The modern era of wildlife and protected area conservation in Nepal began in 1973 with the passage of comprehensive legislation, and has evolved very quickly as new priorities and problems have emerged. Here we explore the legal and managerial development of conservation areas, a recently-defined category of protected area designed to promote conservation through local-level participation and development. A review of the Conservation Area Management Regulations of 1996 shows that there are several potential problems inherent in this designation. As written, the regulations move power from the government to organizations under governmental contract. Thus, management authority largely remains top-down from the standpoint of local users. We also question how well the designation will protect some sensitive wildlife species, since organizations do not have law enforcement authority under Nepalese legislation.

Despite these concerns, there have been several successful conservation area programmes in existence in Nepal since the 1980s and most of the issues addressed are surmountable with the current regulations, providing that several criteria are met. We propose that His Majesty's Government and organizations under contract develop more definitive methods of disbursing funds for local-level projects, and institute social impact assessments. In addition, more attention must be paid to wildlife law enforcement; independent assessments of important wild populations and unique habitats are needed. Finally, we discuss some broader issues that should be better addressed in Nepal and elsewhere, including cross-sectoral coordination within the government.

Keywords: Community-based conservation, conservation areas, Nepal, protected area management

Introduction

With the passage of the 1973 National Parks and Wildlife Conservation Act (hereafter referred to as the Act), His Majesty's Government of Nepal (HMG) began a modern era of conservation devoted to the protection of both natural areas and species (HMG 1973; Upreti 1991; Heinen & Kattel

1992a). The Act created the Department of National Parks and Wildlife Conservation (DNPWC), allowed for the establishment of national parks, wildlife reserves, hunting reserves, and strict nature reserves (Figure 1), provided full protection for species listed under Schedule 1, and stipulated hunting regulations for game species listed under Schedule 2.

As with many developing nations, the Act was largely taken from standards developed in the Western context. It is now generally agreed that such approaches lead to myriad park-people conflicts in developing nations due to the removal of local-level usury rights (Heinen 1996), and many developing nations, bi- and multi-lateral donors, and non-governmental organizations (NGOs) have promoted various types of community-based conservation programmes based on some degree of participation and control by local users (IUCN 1993; Kemf 1993; Western *et al.* 1994; Gibson & Marks 1995).

A number of studies, over several decades, showed that park-people relations were poor around many protected areas in Nepal (Sharma 1991; Heinen 1993; Nepal & Weber 1993; Mehta 1996). HMG legislated several amendments to the Act in an effort to mitigate conflict. Removal of thatch grasses for two weeks per year from lowland reserves was permitted by rules published in 1979, as were facility zones to provide residents with various extractive uses in Himalayan reserves (HMG 1979a, b).

The realization of the severity of conflict has more recently led HMG to pass legislation allowing for (1) the creation of conservation areas in addition to more-strictly protected areas such as national parks and wildlife reserves, and (2) the management of buffer zones around more-strictly protected areas (HMG 1996a, b). The new laws underlie the philosophy of community-based conservation by incorporating public participation in management. To date, three conservation areas have been established in the Himalayan region of Nepal and a project on buffer zone management is continuing in the five protected areas located in the lowland belt of the country (UNDP 1994; HMG 1996c).

This paper focuses on conservation area management regulations. Of particular interest is how this designation has been treated in Nepalese law from the standpoint of local people and how several continuing conservation area projects have implemented programmes aimed at both conservation and local development. As these ideas are quite new and evolving rapidly, we have relied on a number of sources including internal project reports, general references, and interviews. Although this particular work is Nepal-specific, ideas expressed are more generally relevant to plans and pro-

*Correspondence: Dr Joel T. Heinen e-mail: heinenj@fiu.edu

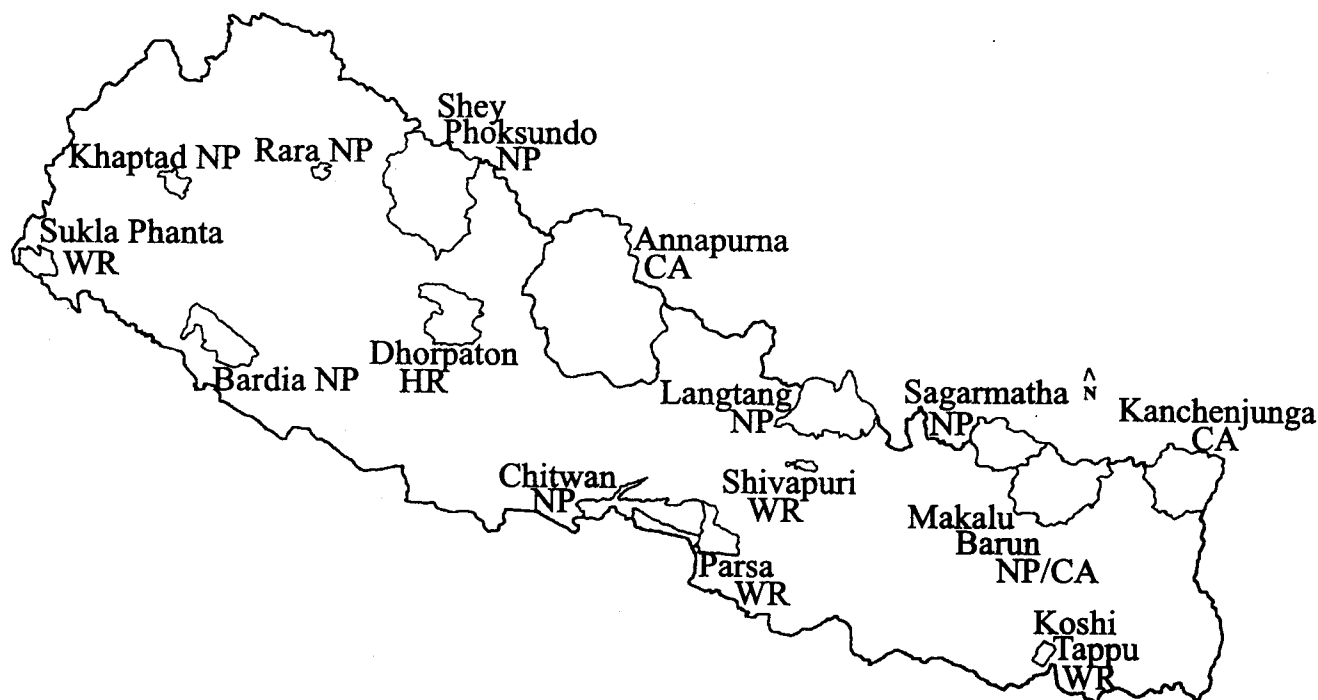


Figure 1 The protected areas of Nepal, showing locations of the fifteen designated parks and reserves. The abbreviations are: CA – Conservation Area; NP – National Park; WR – Wildlife Reserve; HR – Hunting Reserve. Notice that the Conservation Areas are all located along the northern border. The protected area system now covers over 15% of the land area of the country.

jects in other developing nations, as many are attempting to liberalize protected area management regulations to reduce park/people conflicts (West & Brechin 1991; Western *et al.* 1994).

The Conservation Area Management Regulations of 1996

Regulations allowing for the establishment of conservation areas (CAs) in Nepal were published in 1996 under rights provided by the 1973 Act (HMG 1996a). This was after the establishment of two CAs, and after their definition in the Third Amendment to the Act (HMG 1989). CAs are defined as those reserves managed for integrated conservation and development, in which many interactive uses are permitted, the management structure is participatory, and tourism is permitted and promoted. They do not exactly correspond to any particular IUCN protected area category, but have some characteristics of both Category V (Managed Landscapes) and Category VI (Managed Resource Area) protected areas

(IUCN 1994). Conservation through rural development is the primary goal of this designation in Nepalese law.

The preamble (Part 1) to the Regulations defines a CA as that decreed by HMG under previously established definitions (above), and defines the general roles of the main office, chief officer (Chief) and conservation officer (CO). Definitions are provided for the management committee and management planning (see below). The Organization is defined as any organization given the responsibility of managing a CA under legal agreement with HMG. Part 2 discusses procedural issues such as the establishment of boundaries and the main office, and the designation of the Chief. Part 2 also allows for the establishment of different geographic sectors based on natural boundaries within CAs and the appointment of one CO in each of these sectors.

Conservation Area Management Committees and Management Action Plans

Part 3 outlines the designation of Conservation Area Management Committees (CAMCs; HMG 1996a), to be

formed by the CO for each Village Development Committee (VDC) located within the CA. VDCs are local-level authorities common to all villages in Nepal. The VDC chairperson is a designated member of the CAMC. One member is elected from user groups in each ward (there are generally nine wards per village), and five members are nominated by the CO. The CO is instructed to include representation of women and backward castes in each CAMC; members select a chairperson and a secretary.

The responsibilities and rights of CAMCs are also elaborated in Part 3 (HMG 1996a). Main duties include the preparation of a Management Action Plan (MAP) for conserving the environment and assuring community development through the sustainable use of natural resources. CAMCs are advised to implement programmes to protect wildlife and begin plantation projects. Working procedures are described in Rule 10 of Part 3 (HMG 1996a). The chairperson is obliged to call six meetings per year and half of the members must be present for the meeting to proceed. All decisions are made by simple majority. The CO has the power to dissolve a CAMC, after notification, if s/he feels the committee has not protected the 'interests of users'.

Part 4 of the Regulations involves itself with MAP preparation and implementation (HMG 1996a). The coverage of the CA under the VDC must be delineated and the status of wildlife and other renewable resources such as forest products are to be included in each MAP, as are the demography and general resource needs of local users. The revenue expected to accrue from charging fees for extractive uses, also manpower and financial resources for implementation, and proposals for wildlife conservation and tourism development, are to be included. The MAP must present targets to be achieved in a five-year span and provide yearly breakdowns of programmes. COs have the power to amend MAPs before they are submitted to the Chief. The Chief then prepares a general plan to include all the information in the VDC-level MAPs integrated for the whole CA; final approval of the general management plan rests with the Organization.

Prohibitions, financial arrangements, and the management structure

Actions prohibited in CAs include hunting, stone or gravel mining, damage to wildlife habitat, or possession of firearms, poisons, and electroshocking devices. Fees are paid for fishing, documentary filming, scientific research and tourist entry. Permits and fees are also required to start businesses on government-owned lands, or to use resources from such lands, and the Organization has the power to sign contracts with individuals to manage tourist facilities. User fees for grazing or forest product removal are set by CAMCs subject to approval of the Chief.

The financial management of CAs is further elaborated in Part 6, under rules 26–30 (HMG 1996a). Income earned by CAMCs belongs to the Organization, and all deposits are therefore made in the Organization's name. The latter then makes funds available to run community development pro-

grammes for CAMCs. Funds are to be deposited by the CAMC into an account under its own name. The CO and Chief are permitted to check accounts at any time, and each CAMC is to be audited annually.

Other management issues are addressed in Part 7 under 12 different clauses (HMG 1996a). The DNPWC is to depute at least one officer (Warden) as a liaison officer with the Organization. The Warden, or higher officers within the DNPWC, may issue directives to the Organization, which is obliged to instruct the Chief, who then passes the directive to COs. The Chief is further authorized to request any details on any subject covered in the Regulations, and the CO and CAMC must respond to such requests. The Organization is permitted to transfer some rights to the Chief, and the Chief is permitted to transfer some rights to the CO or CAMCs; the types of rights that may be transferred are not stipulated.

Nepal's existing conservation areas

Annapurna Conservation Area

The King Mahendra Trust for Nature Conservation (KMTNC) was created for the purposes of conserving nature and natural resources in Nepal (HMG 1982), and was permitted by Royal Decree to manage Annapurna CA in central Nepal under the Annapurna Conservation Area Project (ACAP) in 1985 (Thakali 1995). Phase 1, with an area of 200 km², was begun in 1986 (KMTNC 1985, 1989). The ACAP now incorporates an area of 7629 km² (KMTNC 1996) ranging in elevation from 450 m to many peaks over 7000 m. A 1686 km² portion of the Manaslu region, to the east of and adjacent to Annapurna CA, is under study as a possible extension (McEachern *et al.* 1995). The northern part of Annapurna is high-elevation desert typical of the Tibetan Plateau and the southern portion includes some of the highest rainfall areas in Nepal; the region is therefore very rich in biological diversity (Allard 1995).

By 1986, the ACAP had established headquarters, and by 1989, a number of village-level development programmes had been established (KMTNC 1988, 1989). There are now seven regional offices in the CA covering 55 VDCs in five districts. HMG formulated a legal agreement in 1992 that allowed for the KMTNC to continue management for 10 years; it was permitted to retain tourist entry fees to fund local-level development projects (Thakali 1995). Thus the establishment and funding of the ACAP were unique.

About 120 000 residents of many different ethnic groups live within the CA, and about 50 000 foreign tourists visit annually, making it Nepal's most populated and most visited mountain protected area (HMG 1995; KMTNC 1996). Over 1000 lodges and teashops are located in Annapurna. Some estimates suggest that the region produces less than half the firewood demand (Thakali 1995), and the ACAP has focused efforts on plantation programmes and alternative energy schemes involving households and lodges. Many user group committees have been formed and infrastructure such as visitor centres and a museum have been built. The ACAP is the

KMTNC's largest and most visible project, and the Trust has been extremely successful in implementing many development programmes involving local participation. The KMTNC also estimates that, by 2002, funding for the CA will be self-sustaining through entry fees and revenues from endowment (Thakali 1995).

Makalu-Barun National Park and Conservation Area

Because of the biological richness of the 400 km² Barun Valley located east of Sagarmatha (Mt Everest) National Park, surveys were conducted in the region in the early- and mid-1980s by The Mountain Institute (TMI; Taylor-Ide & Shrestha 1985). This led to interest in creating a new protected area (KMTNC & TMI 1985), variously proposed as an extension to Sagarmatha or as a separate national park (Mali & Shah 1987). The proposal eventually adopted for the region was a 1500 km² national park and an 830 km² conservation area that buffers the park (DNPWC 1990). The time frame for the Makalu-Barun Conservation Project, implemented jointly by DNPWC and TMI, was set from 1988–2000, and is staffed by both NGO and HMG personnel. Major funding was provided by the United Nations Development Programme as part of a US\$3.8 million effort to promote biodiversity conservation in the Kingdom (UNDP 1992, 1993; Heinen & Yonzon 1994).

The region, like Annapurna, is geographically diverse. Elevations range from 435 m to 8463 m at the top of Makalu, Nepal's fifth highest peak (Byers *et al.* 1993). About 32 000 people of various ethnic groups who largely subsist on agriculture, animal husbandry and seasonal trade and labour live in the CA (DNPWC 1990). Compared to Sagarmatha, the region is poor and food-deficient, and receives few foreign tourists. Development of tourism is a goal of the project, as is the expansion of education, small-scale enterprises and agricultural and forestry programmes. The project forms a critical component of TMI's Mount Everest Ecosystem Conservation Programme, which includes the 33 000 km² Qomolangma Nature Preserve in the Tibetan Autonomous Region of China (TMI 1992) with a core (national park) area of 10 000 km². Qomolangma borders Makalu-Barun, Sagarmatha, and Langtang National Parks in Nepal, forming a regional protected area system of over 40 000 km² with the addition of Kanchenjunga CA.

Kanchenjunga Conservation Area

The eastern Himalaya is considered a global 'hot spot' of high biodiversity coupled with high rates of forest loss (Myers 1988). Several surveys were done in the Kanchenjunga region of northeast Nepal during the 1990s and proposals for a protected area were formed; Wegge (1991) suggested a hunting reserve designation, and Sherpa (1994) proposed a national park. The plan under implementation is for Nepal's first CA designated after the Regulations were passed (World Wildlife Fund – Nepal Programme 1996); it incorporates 1650 km² of high-elevation land bordering Tibet (China) to the north and Sikkim (India) to the east. The International

Centre for Integrated Mountain Development conducted a regional consultation on the area with representatives from all three countries (ICIMOD 1997). Of particular interest is how the proposal will link Qomolangma Nature Preserve (above) and Khangchendzonga Biosphere Reserve in India. The latter is 2566 km² in area, with a core zone of 1784 km² designated as a national park.

Mt Kanchenjunga is the world's third highest peak. The region is biologically diverse (Carpenter *et al.* 1994), but conflicts were evident in several surveys. Yonzon (1996) reported poaching of several big game species, and Wegge (1991) estimated that 10 or more domestic livestock were lost annually to snow leopard depredation in a small part of the project area. Unlike many other ethnic groups in Nepal, Rai and Limbu populations in the area have a strong cultural tradition of hunting. Yonzon (1996) considered the absence of leopards (*Panthera pardus*) in lower elevation forests to be primarily due to poaching by local people. About 6000 residents live within the CA, and over 600 foreign tourists have visited annually in recent years. The potential for more tourism is high although infrastructure is lacking; the proposed project (World Wildlife Fund–Nepal Programme 1996) includes several initiatives to enhance this sector. Kanchenjunga CA was created in late 1997 and a separate advisory board was created shortly thereafter; thus NGOs, in this case World Wildlife Fund – Nepal Programme, will have a limited role in managing the area.

Discussion

The CA Regulations are in keeping with several well-established legal and administrative structures in Nepal. They are based partly on those already in place in the ACAP and thus have had more than 10 years to evolve at that site. The establishment of CAMCs is based broadly on administrative goals set forth in the spirit of the Decentralization Act of 1982 (Paudyal 1994). Decentralization, including the devolution of power to local-level authorities, has been considered an important step toward the modernization (Shaha 1990; Thapa 1995) and eventual democratization of Nepal (Panday & Arya 1997; Thapa 1998).

With regard specifically to the management of renewable natural resources, there is a strong consensus that local-level participatory regimes are effective in rural South Asia (Dahal & Dahal 1993; Tamang *et al.* 1993; Hobley 1996; Poffenberger & McGean 1996). This is addressed in the Regulations by the fact that CAMCs are responsible for setting fees for grazing and minor forest products removal, and are authorized to begin plantation projects. NGOs are gaining increased importance in resource management in Nepal (Chitrakar 1996; Thapa 1998), which is recognized in the Regulations by the fact that Organizations are given management authority of CAs.

Wildlife protection issues

Harvest or protection of wildlife is under the control of

HMG through the DNPWC, and/or the Department of Forestry, which is responsible for law enforcement outside protected areas (Heinen & Kattel 1992a). The Regulations are in keeping with this tradition, but several potential weaknesses are apparent. Since Chiefs and COs are not gazetted law-enforcement officers, all enforcement within any CA falls on one or a few Wardens. Nepal's national parks and reserves are staffed by both Wardens and Army. This can cause problems in command structure and financial constraints (Lucas & Bajimaya 1987), but there is agreement that the presence of both has improved enforcement within more-strictly protected areas. Although poaching in recent times has been documented in parks and wildlife reserves (Yonzon & Heinen 1997), it is rare.

Some evidence suggests that the prevalence of poaching has been greater in Annapurna CA (Thakali 1995) under rules generally similar to the above, than in, for example, Sagarmatha or Langtang National Parks. The Himalayan region along the Tibetan border, where Nepal's CAs are all located, is particularly difficult to patrol. This could be problematic for the protection of species such as black bear (*Selenarctos thibetanus*), musk deer (*Moschus moschiferous*), and snow leopard (*Panthera uncia*). Poaching of all these species has been documented recently in CAs, partly because snow leopard and black bear are pests in many areas of occurrence (e.g. Sherpa & Oli 1988). However, the external markets for products pose greater potential threats than does the occasional removal of problem animals (e.g. Heinen & Leisure 1993).

Since the CA designation and Regulations were put into place specifically to promote conservation through development to improve park-people relations, wildlife law enforcement is compromised to some degree in comparison to that in other protected areas. As stipulated above, HMG, through the DNPWC, retains the power to issue directives to the Organization, which is then obliged to pass them down to management authorities within the CA. Thus the ultimate authority for law enforcement in CAs lies with the DNPWC, but there is no precedent for such indirect procedures in Nepal. More thought must therefore be given to improving the conservation of some species for which there are market-based incentives to over-harvest.

The rights of local stakeholders

Keiter (1995), writing after the legislation was passed but before the Regulations were published, expressed a general concern that 'hybrid' designations in Nepalese conservation law, in which he included both CAs and Nepal's new buffer zone policy (HMG 1996b), pose a potential risk to conservation by transferring too much decision-making power to local interests. This concern would now appear largely to be irrelevant in the case of CAs; the Regulations as currently formulated fall generally within the definition of community-based conservation approaches in that participation is granted, but the regulatory and financial structures are largely top-down. This is manifested in several ways. First of

all, ultimate authority still lies with the DNPWC, which is warranted for protected (Schedule 1) species considering that some are under poaching threats. Other procedures under the Regulations may allow too little power to resource users through several mechanisms because they give power primarily to Organizations under contract.

As noted above, CAMCs will have about 15 members, 5 of whom are nominated by the CO. The only conditions limiting nominating power are that some minority members must be included and that appointments are for five-year terms; re-appointments are not mentioned. The CO is given the power to dissolve CAMCs if s/he feels they have acted against an approved MAP, or have not protected the 'interests of the users'. The only limitation to this power is that the CO provide warning and allow for improved performance. COs may amend MAPs submitted by CAMCs, but there are no limitations on the extent of amendments, nor are there requirements that COs consult affected CAMCs.

Both COs and Chiefs are given broad powers to stop any actions that they consider may have negative impacts on land-use, health, or resource conservation. The only limitation to that power is that the officer must state the reasons and propose reforms. In short, there is no due process built into the Regulations that would allow for CAMCs to contest decisions made by COs or Chiefs. Since 5 of the 15 CAMC members are chosen by COs, there is greater potential for conflicts of interest with the general public, who retain little direct voice in the process.

Financial issues

The financial arrangements described earlier are designed to prevent abuses and provide for checks and balances. However, those checks, as articulated above, apply exclusively to CAMCs, and not to the Organization or its officers. Officers are permitted to check accounts at any time and CAMCs are required to deposit all earned income in the name of the Organization. The Organization is required to provide funds to CAMCs for use in local development projects; but unspecified amounts of locally-generated revenues can be retained by the Organization for administrative costs. Different CAMCs of a larger CA would be expected to generate different amounts of revenue based on their locations, with respect to grazing areas or major trekking routes, for example. The Regulations provide little guidance to Organizations in following any given set of disbursement procedures.

There is no procedure in place that requires officers to fund proposed village development projects as they are prioritized in MAPs. The Chief retains the power to grant permits for businesses to use resources, and the Organization retains the power to sign contracts for tourist-related facilities. The only limitation to these powers is that CAMCs be consulted. The main financial power given to CAMCs is assessment of local user fees for grazing and minor forest-product removal, but this also requires the Chief's approval.

Some project-specific issues

Since Kanchenjunga CA is new, the models in place for discussion and comparison are the ACAP and Makalu-Barun. Both projects have generated much literature in the form of technical documents on many aspects of community development and conservation, but project evaluations based on the attitudes of local people have been meagre by comparison. One of us (Jai N. Mehta) is now analysing results of surveys and interviews for both CAs. Much of the information below comes from his notes from interviews. Full statistical results will be available in late 1999 or early 2000.

No widespread allegations of abuses of power on the part of the KMTNC or its officers were found (Mehta unpublished); however, numerous complaints were recorded about law enforcement requirements. Also, CAMCs in general, were not satisfied with their supervisory role in enforcing wildlife regulations as specified in the Regulations (Mehta unpublished); they are required to report offences to the Chief and to appear as witnesses in court. The consensus was that CAMCs should have the power to prosecute offenders and keep fines for their own development work. Members also disliked the provisions that locally-generated funds are to be deposited in the name of the KMTNC (S.B. Bajrachary, Project Director, ACAP, personal communication 1997). Before the 1996 Regulations were passed, CDCs (Conservation Development Committees; CDCs are now being dissolved, and CAMCs are being formed under the new Regulations) were permitted to keep revenues directly; thus there has been a loss of economic control. Senior KMTNC officials are aware of this issue, and there are thoughts of rectifying the problem via the guidelines for the CA Regulations under preparation (Mehta unpublished).

Mehta (unpublished) also found that, despite the law, socially-disadvantaged people (women and/or occupational castes) were not represented on 10 of 23 CDCs and sub-CDCs examined in Annapurna in 1997. P.B. Yonzon (personal communication 1997) expressed the view that many CDCs were dysfunctional when he was contracted to write a new management plan in 1996. As a result, measures to increase overall participation, especially by women and occupational castes, by strengthening local institutions were proposed (KMTNC 1997). Mehta (unpublished) also found problems in the CDCs he examined in late 1997. In one case, for example, the chair and vice-chair were living in distant urban centres and never called meetings. There is a general consensus that CAMCs or CDCs outside the jurisdiction of Ghandruk and Jomson (both villages have regional project offices) were marginalized and did not receive an equitable distribution of project funds.

According to these viewpoints, the officers of the ACAP, as opposed to CDCs or CAMCs, have been responsible for the types and locations of many projects done in the region. The ACAP has been touted as a model for other such projects (Bunting *et al.* 1991; Wells & Brandon 1992; Wells 1994) but much of its success can be attributed to the fact that it was the first of its kind and a high-profile project that has had, and

continues to receive, a great deal of foreign backing (Heinen & Kattel 1992*b*; Thakali 1995). The ACAP was considered a 'bottom-up' management structure in older accounts (Hough & Sherpa 1989), but this appraisal now appears unwarranted given the subsequent evolution of the rules that are manifested in the 1996 Regulations.

In addition to conflicts between CAMCs/CDCs and the KMTNC, several court cases were filed by local residents against CDCs in Annapurna in the past, mostly related to funding decisions (Thakali 1995). Other accounts have criticized the project for its strong focus on local development to the possible detriment of conservation; the latter issue was virtually ignored in the preliminary stages (e.g. KMTNC 1985). Since that time the ACAP has increased biodiversity-related research (Oli 1993; KMTNC 1994; Allard 1995), but conservation programmes still lag behind development programmes.

The Makalu-Barun project is newer and structurally different from the ACAP in that it involves the managing of both a national park and a CA, and involves a NGO in direct collaboration with HMG. Various concerns have been recently voiced in this case as well; issues of financial transparency have been raised (Donaghue 1995), and salaries of HMG officers in the project have been highly supplemented in comparison to counterparts working in Nepal's other protected areas. The salary incentive was questioned (UNDP 1997) because it raises the issue of whether the project will be sustainable by HMG after foreign support ends. The project was also criticized for too much focus on development issues and too little on conservation strategies (UNDP 1997), although some biodiversity research has been underway since its beginning (Shrestha *et al.* 1990; TMI 1995). As in the case of the ACAP, this criticism is one of degree and not of kind.

Mehta and Kellert (1998) found that villagers within the Makalu-Barun CA had mixed attitudes about the project as a whole. Respondents were favourably inclined toward expanding nature-based tourism and were in strong support of community forest programmes in which individual villages are given control. Wildlife protection was a low priority, and frequent complaints were made about crop-raiding species such as wild boar (*Sus scrofa*), barking deer (*Muntiacus muntjak*) and black bear. Several other types of complaints were also voiced in that study. Amongst them was the viewpoint that community projects given high priority in locally-generated MAPs were frequently not those funded.

Some general issues

There are several potential causes of concern about the institutional aspects of CA management. For example, there is the question as to whether the creation of another layer of administration in the form of CAMCs, separate from VDCs, is advantageous. There are some instances of power struggles between these two local bodies within the ACAP (K.P. Oli, Officer-in-Charge, Ghandruk Sector, KMTNC, personal communication 1997). VDCs must rely solely on HMG for

funding, but because CAMCs have various income sources through tourism and user fees, and now the authority to manage local natural resources, they have the potential to become quite powerful.

As currently written, the Regulations have no provisions for zoning within CAs. There is precedent in Nepalese protected area management for designating portions of areas under different uses, including sanctuaries or strict nature reserves. The latter designation was defined in the original Act of 1973, and Annapurna CA was originally zoned with Annapurna Sanctuary occupying a large, high elevational portion of the middle of the CA (KMTNC 1989). It is questionable whether biological 'hot spots' in Kanchenjunga and Makalu-Barun CAs can be put under more strict protection under the 1996 Regulations.

Tourism is an important component in the planning and revenue structure of CAs, yet there has been little coordination between the DNPWC and the Department of Tourism (DOT), which is in a different Ministry. Tourists are given little information from DOT about protected areas when they purchase trekking permits, and many wardens have recorded complaints when tourists are asked to pay park entry fees (Heinen & Kattel 1992*b*). Keiter (1995) reported that the DOT greatly increased the number of trekking permits for upper-Mustang, in Annapurna, without informing the KMTNC or the DNPWC. Tourist entries into protected areas have increased yearly (HMG 1995), yet efforts at coordination between the two departments have not risen. More generally, there are no requirements in the CA Regulations for social impact assessments, which are useful in assessing the effectiveness of projects in meeting social goals (Hough 1991), and can be used to fine-tune programmes and identify and manage conflicts based on the perceptions of local users.

Conclusions

The CA legislation and Regulations are progressive compared to the older rules under the 1973 Act, but it is evident that much work remains to be done. The overall assessment of the Regulations leads to the conclusion that power has been divested to some degree from HMG itself, and has been granted to Organizations that manage CAs under HMG contract. Local stakeholders are participants in the process, but are not particularly empowered. There are several potential areas for abuse, as well as gaps in the law, that may compromise conservation and development. Annapurna and Makalu-Barun have had many successes in local development, but are unlikely to be representative of future CA projects for several reasons: they were begun under special agreements before the Regulations were passed, and they have had major financial backing from foreign funders which may not materialize for other related projects. Kanchenjunga CA, with an advisory board independent of both HMG and the Organization (WWF-Nepal in this case), was established with another unique institutional structure.

CA management in Nepal can thus be questioned from conservation and development perspectives for different reasons. Many potential conflicts may be soluble through a high degree of coordination between the DNPWC, Organizations, and CAMCs, but we recommend several procedures, based on the discussion above, to enhance the goal of conservation through development:

(1) The DNPWC, in conjunction with Organizations, should implement a decisive priority-based funding system for the disbursement of CAMC-generated revenues based on projects prioritized in MAPs. In addition, consideration should be given for CAMCs to retain a higher proportion of income, and to retain some income directly.

(2) The DNPWC should conduct regular surveys to monitor wildlife in each CA independently of those required in MAPs, especially of Schedule 1 (protected) species and others for which there are external markets for products. The DNPWC should also survey biologically rich areas within CAs and consider regulating them separately to assure better conservation of unique and/or diverse habitats.

(3) An outside body, perhaps a national NGO or a university research team, should be contracted to conduct periodic social impact assessments for each CA project. Local communities could also play a role in evaluating local projects implemented by larger CA projects, which could be done by a local council separate from CAMCs.

Survey results could be made available to the DNPWC and Organizations to amend and improve MAPs for whole CAs and for individual villages within them. These recommendations would be relatively easy to incorporate into Guidelines under preparation for each CA. They would presumably diminish the potential for funding conflicts between CAMCs and Organizations, or local people and CAMCs, and diminish the likelihood of poaching by local people and abuses of power by officers, thus hopefully improving the dual prospects for conservation and development. Bigger questions for CA management to address are at the departmental level and above. Allowing for more strictly-protected zones within CAs, for example, may require a separate amendment. As with other nations in the region (Mishra 1994), there is need for better coordination of programmes; the DNPWC should foster more interaction with the DOT to assure better conservation as well as better management of tourism (Keiter 1995).

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