

From:

Conservation Biology in Asia (2006). McNeely, J.A., T. M. McCarthy, A. Smith, L. Olsvig-Whittaker, and E.D. Wikramanayake (editors). Published by the Society for Conservation Biology Asia Section and Resources Himalaya, Kathmandu, Nepal, 455 pp. ISBN 99946-996-9-5

CHAPTER 3

RECONCILING CONSERVATION AND LIVELIHOOD NEEDS IN PROTECTED AREAS OF NEPAL: A CASE STUDY OF KANGCHENJUNGA CONSERVATION AREA

By

Ghana S. Gurung

Department of Geography, Development Study Group, University of Zurich, Zurich, Switzerland

ghanag@geo.unizh.ch

ABSTRACT

Since the 1980s, participatory approaches have been applied in conservation projects to reconcile conservation and livelihood interests in protected areas of Nepal and elsewhere. The major challenge now is to find effective and efficient operational strategies based on lessons learned. This case study examines the successes and obstacles of the Kangchenjunga Conservation Area Project (KCAP) in addressing conservation and local livelihood needs through qualitative and quantitative research methods. The results indicate an improvement in forest conditions and a perceptible growth of wildlife - judging from the impact of increasing crop and livestock deprecations – as well as an enhancement of the livelihoods of most of local inhabitants. The results also show that people-oriented conservation projects can successfully reconcile conservation interests with livelihood needs of local people through long-term interventions that carefully integrate development issues into conservation strategies, and are implemented transparently through local institutions with facilitation of skilled human resources. Often, factors like the country's current political instability and economic trends, affect conservation and livelihood issues more than any project intervention. However, in order to achieve socially favourable and ecologically sound conservation, it is imperative to address local livelihood needs while also getting constant external support for the conservation of endangered species. In other words, this needs a good balancing act.

Key Words: conservation, livelihoods, protected area, strategies.

INTRODUCTION

Unlike in the past, when indigenous people were evicted from their homelands while creating protected areas (Stevens 1997), a large number of people today live within the protected areas and they are regarded as a potential resource for conservation (Colchester 1997; IUCN/WCPA 2003). Despite significant progress being made in conservation in term of spatial coverage and management regimes of protected areas with a paradigm shift from 'protectionist' to 'people-oriented' approaches (Chape *et al.* 2003; Kollmair *et al.* 2005), the academic debate on complementarity and conflict between biodiversity conservation and human welfare continues (Brandon *et al.* 1998; Brechin *et al.* 2002).

The critics of participatory conservation justify the call for renewed emphasis on strict protection (Kramer *et al.* 1997; Oates 1999), whereas others advocate a critical assessment of the rhetoric of people-oriented approaches in the light of social justice (Colchester 1997; Jeanrenaud 2002). The current debates are primarily centred towards bringing success and efficiency in people-oriented approaches to deliver the intended conservation and community development results in protected areas (Salafsky & Wollenberg 2000; Brown 2003; McShane & Wells 2004; Scherl *et al.* 2004) rather than reinventing the wheel (Wilshusen *et al.* 2002).

Some authors (cf. Salafsky & Wollenberg 2000; Worah 2000; Brechin *et al.* 2002; McShane & Wells 2004) state that the weakness of participatory conservation is mostly related to the failure of Integrated Conservation and Development Projects (ICDPs) to understand local communities as heterogeneous and equal partners. Many projects miss the link of conservation with livelihood options, and are unable to create local ownership of resources, facilitate reasonable decision-making processes, perceive the influence of external factors, judge sustainability, reform policies or capitalize on local resources. Being input-intensive and short-term oriented also undermines the approaches (Worah 2000; Hughes & Flintan 2001). The challenge is in finding ways to adopt flexible and participatory measures to justly incorporate diverse stakeholder interests and build local institutions capable of dealing with dynamic ecological, socio-economic and political processes (Ostrom 1990; Brown 2003).

Prior to the establishment of the first Conservation Area, all protected areas of Nepal were founded and being managed based on traditional approaches, with the army enforcing the rules. This approach has been successful for protecting species like tigers (*Panthera tigris*) and rhinoceros (*Rhinoceros unicornis*) in lowland parks, but has evicted thousands of local inhabitants from their homes and resources, and created many for of park-people conflicts (Soliva *et al.* 2003; McLean and Straede 2003). In response, a community-based conservation approach was first applied in the Annapurna Conservation Area (ACA) in 1986. The success of ACA has guided the establishment of other Conservation Areas and declaration of Buffer Zones around the National Parks, providing opportunities for local people to share park resources and revenues.

RESEARCH APPROACH AND METHODS

Prior to the onset of the international debate on participatory conservation, the key aim of this study was to examine the impact of Kangchenjunga Conservation Area Project (KCAP) interventions and the strategies applied to deliver positive conservation and livelihood results.

The research methods were based on a combination of in-depth and semi-structured interviews with 108 Kangchenjunga Conservation Area (KCA) residents and 50 experts, individual and group discussions with members of district-based NGOs, political parties, project trainees and journalists during 2005. The results were analysed against secondary data and were presented again to the stakeholders for substantiation.

Case Study Area and Project

The KCA was first declared as a 'Gift to the Earth' in support of the World Wide Fund for Nature's (WWF's) Living Planet Campaign, and officially conferred Conservation Area status by His Majesty's Government of Nepal (HMGN) on 21 July 1997. The first gazetted area of 1,650 km² was expanded to 2,035 km² in 1998 in order to facilitate community-based management of natural resources (WWF NP 1999). The KCA lies in the northeast corner of Nepal at 27^o-28^o N and 87^o-88^o E, sharing international borders with India in the east and China in the north. The altitude ranges from 1,200 m to 8,586 m and consists of 11 mountain peaks towering over 7,000 m, thus dominating the entire landscape. The KCA consists of 65% rocks and ice/rivers, 14% forests, 10% shrubs, 9% alpine meadows and 1.6% agricultural land (Amatya *et al.* 1995).

The KCA is a 'biodiversity hotspot' (WWF/ICIMOD 2001) that harbours species of 844 plants, 253 birds, 83 insects and 22 mammals (KCA-MC 2005). The area is home to a number of endangered species such as snow leopard (*Uncia uncia*), red panda (*Ailurus fulgens*), Himalayan Black Bear (*Selenarctos thibetanus*) and musk deer (*Moschus chrysogaster*). A total of 16 medicinal aromatic plants (MAPs) are actively traded out of the identified 139 species (Oli & Nepal 2003).

The KCA encompasses four Village Development Committees (VDCs) with a total population of approximately 5,000 belonging to six ethnic groups, who live in 35 widely scattered villages consisting about 1,000 households. Mostly engaged as subsistence farmers and pastoralists, only 34% of households remain below the poverty line (KCA-MC 2005).

A series of studies was conducted between 1994 and 1996, after which the HMGN's Department of National Parks and Wildlife Conservation (DNPWC) and WWF NP jointly launched KCAP on 22 March 1998. The primary aim of the project was "to safeguard biodiversity of the area and improve living conditions of the local residents by strengthening capacity of local institutions responsible for making decisions, which will effect the long-term viability of genetic conservation and economic development of the area" (WWF NP 1998:4). The KCAP is the latest ICDP model applied to create and manage the area (Kollmair *et al.* 2003), and emphasises tri-partite partnership between the local community, the state government and WWF NP, and the handing down of management responsibilities to the local community. The process of transferring the management responsibilities of KCA by HMGN to the KCA Management Council (KCA-MC) started from 2005 with the preparation of the KCA Management Plan and Regulations, but the final decision remains pending. The KCA-MC is formed from seven User Committees representing 32 Mother Groups and 44 User Groups.

The project has already established its head office, three sector offices and a visitor information centre and check post inside the KCA with a liaison office in the District Headquarters to implement its activities. The average yearly project budget for the first two years was about US\$ 80,000 (WWF-NP 1998; 1999) and about US\$ 200,000 thereafter (WWF-NP 2003-2005).

RESULTS

The challenge of the project was to meet conservation and livelihood needs in the face of increasing population and poverty. The results of the project's intervention are detailed below.

Biodiversity Conservation – Successes and Constraints

All of the local respondents interviewed indicated a marked increase in wildlife after the KCAP interventions, more evidently observed since 2002. "Now we see Kalij (*Lophura leucomelana*) like chickens and deer like goats around our village" said . P. B. Sherpa. Over 90% of local interviewees reported a substantial increase in barking deer, wild pig, blue sheep, tahr, porcupine, Himalayan black bear, monkeys and many species of birds. Wild pigs (*Sus scrofa*), first reported to be seen in 2002, were found raiding crops all over the area. Two local Sherpa herders estimated the snow leopard population to be 35, based on the recent killings of yak and blue sheep, pugmarks and live sightings. The KCAP staff estimated the snow leopard population ranging between 19 and 32. Most of the expert interviewees agreed that there was a growth in herbivores but were doubtful about the increase in carnivores, contending that the recent sightings of snow leopards might be due to growing community awareness and improved monitoring activities rather than the actual increase in species.

For the local interviewees, the main indicators of wildlife growth were decreasing crops and livestock from wildlife depredation, frequent wildlife sightings, change in wildlife behaviour (more of a domestic behaviour), depredation of goat and pigs by common leopard (*Panthera pardus*), and blue sheep (*Pseudois nayaur*) competing with livestock for grazing.

The reasons for the increase in wildlife were attributed to conservation awareness, positive attitude of local communities towards the project, effective wildlife monitoring, increased local capacity to control poaching, regulated use of forest products, decline in poaching of musk deer and Himalayan Black Bear and the positioning of snow leopards and other carnivores. A contributing factor was the confiscation of guns by the Maoist rebels who were not seen engaged in poaching so far. Other conspicuous reasons were the legally enforced penalty for violators of conservation rules, re-demarcation of the KCA boundary, endorsement of Conservation Area Regulations 2000 creating local ownership over resources, expectation for wildlife-based tourism development and the perceived fear of KCA becoming a national park if the local people and the project did not contribute towards conservation.

The increasing wildlife was generally assessed as a threat to livelihoods, even though the project staff, experts and a few local respondents viewed this as a conservation success. Although the respondents from Buddhist communities claimed to highlight the path of non-violence like refraining from killing living beings thereby contributing to conservation, the trapping of snow leopard, blue sheep and musk deer by other locals reportedly continued.

The respondents stated that the sustained conservation of many endangered wildlife species such as the musk deer, snow leopard, Himalayan Black Bear and the 'pest animals' (crop and livestock depredating wild animals) remains uncertain without continued external support. Several interviewees indicated that the project interventions hardly benefited the individuals and households who were the most affected from crop damage by wildlife. Almost all of the respondents suggested that those affected by wildlife should be compensated for the loss or should be allowed to kill crop-raiding animals.

Over 83% of the respondents reported a slight growth in forest cover area and the remaining 17% believed that the forest conditions have improved with the project interventions. The indicators for the improvement were naturally regenerated trees covering the otherwise barren lands and the farmed public land, which were earlier under shifting cultivation.

The reasons given for improved forest conditions were related to applying of restrictions on firewood and timber collection by the KCA institutions, voluntary control of forest fires by the people, harvesting of grass and fuel wood from designated areas, stopping timber trade with Tibet, meeting large fuel-wood and timber demands from cardamom shedding trees, halting of slash-and-burn agricultural practices in the government forests and decreasing this practice in private lands, and introducing alternative energy resources by the project.

Although most of the interviewees considered the improving forest conditions as a positive trend, the interviewees from higher altitude belts strongly raised concerns against the control of Medicinal and Aromatic Plants (MAPs) collection and the stopping of timber trade with Tibet. They saw very little rationale behind the strict protection of MAPs as these species have been harvested for decades. The unanimous outlook on forest conservation among the local interviewees was that too many restrictions were placed by the project on the use of forest resources without sufficiently addressing their alternative energy requirements and livelihood needs.

Enhancement of Local People's Livelihoods

Over 75% of the respondents reported that their living conditions have improved with the project interventions. Most of them referred to livelihood improvements in relation to community infrastructure development activities such as repair and installation of trails, bridges, piped water supply, schools, toilets, girls' hostel, childcare centre, camp sites, monasteries and snow polls. The remaining 25% either reported no tangible improvements or that the conservation costs exceeded the project benefits. "I think the project has done 90% good and 10% bad for the people such as wildlife eating our crops and stopping of slash-and-burn practice," reports Mr. B. Limbu.

A growing cooperation between the project and livestock owners was observed with the establishment of a ‘community-based livestock insurance scheme’ to compensate for livestock losses to snow leopards. The involvement of the local men in anti-poaching and wildlife monitoring activities also generated local income.

All the interviewees appreciated the ‘saving and credit endowment fund’ managed by the Mother Groups (MG) providing loans on low interest rates of less than 15% (e.g., village money lenders charge 36-60%) to poor female members and their families to undertake income generation activities. Scholarships were also offered to 32 of the poorest girls of the area as a part of this scheme. “The Mother Group fund is helping us to meet immediate family needs, buy food before harvest, and provides us with the opportunity to improve our income and send poor girls to school,” reports . G. Gurung. The fund has grown from US\$27,000 as project investment in 2000 to US\$43,000 in 2004 through savings and interest earnings. Recently, there is a threat to the sustainability of this scheme as the Maoist rebels ask for money. So far, the MGs have been able to persuade the rebels to leave the fund intact, but the uncertainty lingers.

The interviewees also suggested that KCAP largely benefited able individuals (e.g., created jobs), active communities and larger settlements on the trekking routes (e.g., infrastructures) rather than the most disadvantaged inhabitants from isolated settlements. A few local teachers also complained that the higher salary of the project staff has contributed to inflation.

Almost everyone reported a physical improvement in health and sanitation conditions. Self-regulated regular village clean-ups, growing use of sanitary toilets, improvement in the village drainage system and awareness in personal hygiene were given as examples. Earlier, “getting close to village was indicated by the smell of human waste which is not the case anymore” said Mr K. Rai.

Table 1: Summary of the evidence and reasons given for livelihood improvements.

Evidence	Reason(s)
<ul style="list-style-type: none"> • Access to KCA enhanced with maintenance and installation of trails and bridges. • Health and sanitation conditions improved (with piped water supply, awareness on health issues, health camps, and toilet and drainage installations) • Income of many households increased due to project employment and income generating activities with MG loans • Long-term access to education for 32 poorest girls ensured, and improved general education with school support • Women literacy rate increased by almost 35% through literacy classes • School sanitation improved with installation of sanitary toilets (in all schools) • Food deficit of many households decreased with the introduction of high breed vegetable production and wage earning from porter and constructions • Solar lighting and improved cook stoves and back-boilers accessed for the first time by over 500 KCA households. 	<ul style="list-style-type: none"> • Direct implementation of gender sensitive and needs based development activities through user groups • Staff staying within the area since project inception working directly with the people • Recruiting and training of local people by the project • Implementation of various trainings, study tours and interactions. • Making community participation a precondition for initiating development activities. • Contribution of time, effort, materials and cash by the community for project activities. • Reaching of benefits to the poorest individuals and households in every settlement. • Creation of various income generation opportunities • Efforts to maintain transparency • Respect for local values, cultures, traditions and institutions by staff • Building of good relationship with local people • Partnerships with other development organisations to improve infrastructures • Adoption of flexible implementation approach

The impacts on the livelihoods of local people cannot be solely attributed to project interventions, but several external factors such as tourism trends and the market price for cardamom (*Ammonium*

subulatum), chiraita (*Swertia chirayita*), livestock and most importantly the insurgency have also influenced these impacts. The impact of the chiraita price on subsistence livelihoods was reported to be much higher compared to cardamom, as many poor farmers collected chiraito from government forests whereas cardamom was grown on privately owned land. Most of the respondents believed tourism could make the biggest difference in future conservation and development, followed by utilization of Non-Timber Forest Products (NTFPs) and MAPs and livestock development. The development-oriented activities have created tremendous expectations among the people, which is a formidable future challenge for the project staff and the Council members.

Capacity Building of Local People and their Institutions

Almost 80% of the respondents reported considerable improvements in the general awareness among local people and their overall capacity to manage the project activities. A significant result was the change of attitude towards the KCAP, which was suspicious and sceptical in the beginning. “My attitude and perspective towards KCAP has changed. I was negative and sceptical when it started but now, I am a strong supporter. I tell people that this is the best project,” says Mr D. B. Rai, Ex-DDC member, Taplejung. On the contrary, the remaining 20% suggested that there has been no improvement in the capacity of the local people.

Table 2: Comparative perceptions of KCAP, by local inhabitants over the years.

Understanding	Inception phase of 1998	End of 2005
<ul style="list-style-type: none"> • Project acceptance • Project type • KCA infrastructure • KCA Ownership • Protected area type • Management authority • Enforcement of rules • Participation benefit • Activity costs • Activity implementation 	<ul style="list-style-type: none"> • Should be driven out • Development project • Project should buy land • State or government • National park • Park authority with Army • Armed forces & legal actions • Project • Project should cover 100% • Project and local leaders 	<ul style="list-style-type: none"> • Should stay at least 5-7 years • Conservation project with development • Individuals and community provided land • Local community and government • Community-managed conservation area • Local Council with park authority • Community pressure and legal actions • Local community and project mutually • Community should contribute their share • User Group/Council with project support
Source: KCAP technical progress reports 1998-2005 and personal data		

The general stance among many interviewees was that the project should cover 100% of the activity costs. The main reason given for peoples’ inability to match the prescribed community contribution (at least 10% of total estimated costs) were largely due to poverty, although a few of them mentioned that recognition is an important factor: “We work but the project gets credit” says Mr W. Sherpa.

The establishment of local institutions and diverse capacity building activities such as training, tours, interactions and staff exchanges with the ACA have contributed to capacity building of the locals. “Various trainings provided by the project have given us a sense of hope and direction to improve our lives,” says P. Sherpa. Some respondents said that the establishment of the Hellok Child Care Centre, regular village clean-ups and strong community support are the direct impacts of study tours.

It was also reported that most of the gender-focused project interventions helped to increase the individual and institutional capacity of women. For the first time in the history of protected area management in Nepal, 30% women representation in the decision-making body has been enforced by Conservation Area Regulations 2000. Women’s participation in decision-making was reported to be very effective at MG or settlement level, but quite ineffective (also men) at the Council or policy-making level. The way the different MGs has functioned was noted by the interviewees like the way the Hellok MG has managed the Child Care Centre since 2000 also taking actions against poachers or the Yangma MG, who courageously chased away Tibetan poachers in 2003 by pretending to be police

women and the Gola and Ghunsa MGs who took strict actions against inefficient teachers as a testimony of their capacity enhancement.

Table 3: Summary of increasing local capacity at the individual and institutional level.

Individual	Institutional
<ul style="list-style-type: none"> • More women confidently face outsiders and strangers • Many individuals run income generation activities, i.e., shops, piggery, goat keeping, poultry, carpet production etc. • Three individuals received Abraham Conservation Awards in 1999, 2000, 2001 • Local project staff carry out wildlife monitoring and anti poaching operations • Local men together with project staff monitor wildlife • Majority of Mother Group members can read and write. • Most local people confidently handle the government authorities 	<ul style="list-style-type: none"> • KCA institutions established by project, implement project activities • KCA-MC is ready to take over the KCA management responsibility • The majority of Mother Groups and many User Committees enforce conservation rules. • One Mother Group received Abraham Conservation Award in 2003 • 32 Mother Groups independently manage their savings and credit funds and 32 girls scholarships • Ghunsa Snow Leopard Conservation Committee manages livestock insurance scheme • 16 User Groups manage community forests • NGO established by ex-local KCAP staff, implement project activities.

The majority of respondents raised the issue of transparency in project implementation. An overwhelming majority of the local interviewees reported that the project implementation was more transparent and effective, when the settlement level User Groups directly had implemented the KCAP activities, compared to the current modality of implementation by the KCA-MC through the User Committees. However, many interviewees raised questions about transparency at the central level office in Kathmandu, expressing their concern on whether the funds raised were actually invested in the area.

Regardless of the majority of local respondents who were least informed about the Council including their members, activities, roles and responsibilities or those who pointed out weaknesses or expressed dissatisfaction on the work performance of the User Committee and the Council members, they unanimously endorsed the community-based KCA management. “Conservation by the villagers is the best option because we can talk, discuss and settle important cases like poaching, which is not possible with government management” says Mr G. B. Limbu. The Council Chairperson was confident that that with support from WWF for five to seven years and the government handover, KCA could be an outstanding example of a successful community managed conservation area.

The interviewees were sceptical about the continuity of project interventions with the same vigour without KCAP, or without enhancing the capacity of Council members and establishing sustainable financing mechanis. The proposed training needs were on project planning, monitoring and evaluation, social mobilization, conservation awareness, natural resource management, financial management and accounting, good governance and coordination and networking. The Council Chairperson Mr. Dawa Sherpa, a highly recognised individual, also agreed on the identified training needs. Many respondents stated that delay in handing over KCA to the Council could adversely affect the optimistic attitudes of the communities.

DISCUSSION

The locals perceived KCAP as a largely successful project in achieving its conservation objectives with noticeable increase in wildlife, improved forest conditions, positive attitude of local inhabitants towards conservation, active community participation in project activities, strong support from the

district-based government and non-government institutions, major political parties and media, and willingness of the KCA institutions to take over the management responsibility of the area.

Unlike the earlier understanding of KCAP as a development project (Müller-Böker & Kollmair 2000), an overwhelming majority today perceives KCAP as a conservation project interested in protecting wildlife, conserving forests and helping local people through community development activities. The change in the attitudes of local inhabitants towards the project from negative (WWF-NP 1998) to a positive one (MS 2003; Locher 2004) is confirmed with this study as indicated by vast local support to the project.

Contrary to the reports of growing deforestation in KCA (Peterson 2000; Gautam and Watanabe 2003), the most recent forest cover area studies show about 1% increase (Schubiger 2006) between 1989 and 2000 and a significant improvement in the forest conditions after continued degradation since 1978 (KCA-MC 2005). This increase was specifically mentioned by the interviewees. The degradation of MAPs continues in KCA (Oli & Nepal 2003), but the rate diminished after the KCA institutions took control measures.

There are reports of absence of wild pigs from depredations of leopards (Yonzon 1996). However, recent findings on the status of wildlife in KCA suggest an increasing trend (MS 2003; Toccoli 2004), and the study results show wild pigs raiding crops over the area and depredations by leopards. The success of wildlife conservation and the protection of pest animals threaten the livelihoods of local inhabitants (Loksam 2003; Mahato 2003). Most of the local respondents believed that crop and livestock depredations by wild predators and the cost of conservation measures outnumbered the project's development benefits. The reports on subsistence hunting practices of Limbu and Rai communities (Yonzon 1996; MS 2003) are reinforced because ex-hunters express intentions to continue hunting wildlife. Similar to the findings of Loksam (2003) and Toccoli (2004), livestock depredation by snow leopard has been reported as the only key threat to livelihoods. This threat has been addressed by establishing the first 'livestock insurance scheme' in Nepal in December 2005 with financial support from NCCR-North-South, Switzerland (WWF-NP 2005a). Meanwhile, the conflicts emerging from crop depredation by wildlife and the restrictions in harvesting forest resources (e.g., MAPs) remains to be reconciled. The poaching of wildlife and MAPs is likely to increase in the absence of regular monitoring and external support.

Compared with the findings of Dhakal (1996), recent studies have showed a noticeable improvement in community infrastructure, health and sanitation conditions, literacy rates, access to education and income generating opportunities (Loksam 2003; MS 2003) in KCA. However, a few scattered settlements and poor households cannot access the project benefits (Locher 2004). The interventions of community development-oriented activities have created tremendous expectations among the local inhabitants as well as those of the adjoining areas, who are repeatedly requesting the extension of the KCA boundaries. Partnerships with Kadoorie Agriculture Aid Agency (KAAA) for building of bridges and the district-based government and non-government agencies have greatly contributed in addressing the infrastructure and other development needs of KCA. The expectations for larger infrastructures like micro-hydro electricity and suspension bridges appeared to be future challenges for the project.

Unlike the destruction of many protected area office buildings by the Maoists in Nepal (Bajracharya *et al.* 2005), the KCAP infrastructures remained safe and intact owing to local ownership, leadership of the KCA-MC Chairperson, performance of the project staff, and most importantly, the huge support of the local inhabitants and district level stakeholders. The district-based human rights organisations, political parties, NGOs, educational institutions and the media have repeatedly appealed to the conflicting parties not to hamper KCAP activities, through joint press releases in local and national dailies.

Despite poor linkages between conservation and development activities which appear as a weakness of participatory conservation (Salafsky & Wollenberg 2000; Worah 2000), the case study results

indicated that it is not necessary to link every development-oriented activity with conservation to achieve the intended results. The linkages can be established through generating awareness and building capacity of the communities and their institutions to enable self-initiated natural resources management practices. Besides actively participating in project activities, the local KCA institutions have independently enforced many conservation measures.

The success of participatory conservation depends on understanding the community as a heterogeneous mix with diverse interests and accepting them as equal partners to enable fair decision-making processes (Brechin *et al.* 2002; Brown 2003). KCAP has successfully applied the basic principles of participatory conservation by actively working with the local people beginning from activity design and implementation and continue to joint evaluations and public auditing in recent years. Grubin (2001) labels KCAP as having a top-down approach, but the project considers itself as having a bottom-up approach (WWF-NP 1998). The findings suggested that it has a mixed approach based on reconciliation of global and national conservation interests with local needs and aspirations.

The efforts of the project to maintain transparency in implementation by making project documents accessible to the public, discussing annual budget and activities at central, district and settlement levels, publishing and distributing brochures and quarterly progress reports in Nepali language, conducting stakeholder interactions and joint project evaluations, and carrying out public auditing, made the interventions very effective.

The inability of conservation projects to reform policies and invest beyond short term project cycles (Hughes & Flintan 2001) were largely overcome in KCAP through promulgation of Conservation Area Regulations and investments of over seven years with a commitment to continue until 2009. The fact the KCAP was the only long-term project in the area contributed to its success for two reasons. First, the local communities supported the project as they depended heavily on it to deliver development needs, which were ignored for decades. Second, it allowed for phase-wise implementation of the project. Large-scale development activities including wildlife monitoring became possible in the second phase when a certain level of awareness and local capacity was reached.

The role of professionals is important in projects (Colchester 1997). The findings of KCAP reinforced this claim because the performance of project staff played an important role in the successful implementation of the project. Likewise, employing and training local people (70%) and outsiders (30%) including DNPWC Wardens, Rangers and WWF-NP staff, contributed significantly to its success.

Despite enormous difficulties during the initial phase (WWF-NP 1998; Müller-Böker and Kollmair 2000), most of the experts believed that the partnership between WWF-NP and DNPWC enabled the timely endorsement of KCA re-demarcation and Conservation Area Regulations 2000, which has created local governance over resources and provided a framework for effective management of the KCA. The threat of legal actions by the DNPWC staff as 'stick' and the delivery of development-oriented activities as 'carrot' by the project have provided balanced approaches to the KCAP management.

The general results thus indicated that participatory conservation projects need to be long-term and impact driven, as it takes time and resources to win the confidence of local people, mobilize them to participate, enable policy reform, bring equitable benefits to local inhabitants, develop partnerships, and institutionalise community-based organisations to sustain project efforts and enable them to cope with dynamic ecological processes, and political and economic trends. The study also clearly showed that external factors like the current political instability, economic trends and global conservation and development dialogue often affected conservation and livelihood issues more than the project interventions.

CONCLUSIONS

The KCAP has successfully incorporated diverse knowledge, views and interests and has applied various participatory tools to reconcile conflicting interests, needs and priorities of stakeholders. It has also built the capacity of local institutions to implement and sustain conservation efforts. The participatory principles and strategies successfully applied in KCAP can be adopted by other protected areas of Nepal and elsewhere, as the project has delivered the intended results in one of the most marginalised areas of Nepal even in times of insurgency. These results have been delivered by inputs of less than US\$ 170,000 per year and staff increasing from 12 to 27 in seven years.

Further delay of the KCA management hand over to the KCA-MC is likely to dilute the success achieved so far. Sustainability of the project efforts will depend on the capacity enhancement of the KCA-MC, sustainable use of NTFP/MAPs and wildlife, tourism growth, and investments by conservation institutions to address increasing human-wildlife conflicts.

Conservation is not a national or local priority in times of growing insurgency and poverty. Without steady external support for species protection and addressing local livelihood needs, it will be a bleak path ahead to achieve feasible, socially justifiable and ecologically sound conservation even with a community-based management mechanism in place.

ACKNOWLEDGEMENTS

I conducted this research under the supervision of Prof. Dr U. Müller-Böker and Dr M. Kollmair, Department of Geography, University of Zurich with full scholarship provided by the National Centre of Competence in Research North-South (NCCR N-S), Switzerland. I humbly acknowledge the contributions of my supervisors, NCCR N-S, community members of the study area, WWF Nepal Program staff and Kangchenjunga Conservation Area Project staff. Special thanks go to Mr. W. Schubiger for analyzing the KCA forest cover area.

REFERENCES

- Amatya, D. B., T. Brown, L. N. Sherpa, K. K. Shrestha, and L. P. Uprety. 1995. **Feasibility Study for the Proposed Kanchenjunga Conservation Area**. WWF Nepal Program, Kathmandu.
- Bajracharya, S. B., P. A. Furley, and A. C. Newton. 2005. Effectiveness of community involvement in delivering conservation benefits to the Annapurna Conservation Area, Nepal. **Environmental Conservation** 32(3): 239-247.
- Brandon, K., Redford, K. H., and S. E. Sanderson (eds.). 1998. **Parks in Peril: People, politics and protected areas**. Island Press, Washington, D.C.
- Brechin, S. R., P. R. Wilshusen, C. L. Fortwangler, and P. C. West. 2002. Beyond the Square Wheel: Toward a More Comprehensive Understanding of Biodiversity Conservation as Social and Political Process. **Society and Natural Resources** 15(1): 41-64.
- Brown, K. 2003. Three challenges for a real people-centred conservation. **Global Ecology and Biogeography** 12: 89-92.
- Chape, S., S. Blyth, L. Fish, P. Fox, and M. Spalding. 2003. **2003 United Nations List of Protected Areas**. IUCN, Gland, Switzerland.
- Colchester, M. 1997. Salvaging Nature: Indigenous Peoples and Protected Areas. Pages 97-130 in K. B. Ghimire and M. P. Pimbert, (eds.). **Social Change and Conservation**. Earthscan Publications Ltd., London.
- Dhakal, N. H. 1996. **A Study Report on Socio-economic Survey and Integrated Conservation**

- and Development Plan of the Proposed Kangchenjunga Conservation Area.** WWF Nepal Program, Kathmandu.
- Grubin, E. S. 2001. **Ecotourism: Is it the Key to Salvation for the Communities of Foday and Ghunsa in the Kangchenjunga Region of Eastern Nepal.** Department of Environmental Studies. Bates College, Lewiston.
- Hughes, R., and F. Flintan. 2001. **Integrating Conservation and Development Experience: A Review and Bibliography of the ICDP Literature.** International Institute for Environment and Development, London.
- Jeanrenaud, S. 2002. **People-Oriented Approaches in Global Conservation: Is Leopard Changing its Spots?** International Institute for Environment and Development, London and Institute for Development Studies, Brighton.
- KCA-MC (Kangchenjunga Conservation Area Management Council). 2005. **Kangchenjunga Conservation Area Management Plan 2005-2009.** KCA-MC, Taplejung.
- Kollmair, M., Gurung, G. S., Hurni, K. and D. Maselli. 2005. Mountains: Special Places to be Protected? An analysis of worldwide nature conservation efforts in mountains. *International Journal of Biodiversity Science and Management* 1(2005): 1-9.
- Kollmair, M., U. Müller-Böker, and R. Soliva. 2003. The Social Context of Nature Conservation in Nepal. *European Bulletin of Himalayan Research* 24: 25-62.
- Kramer, R. A., C. P. van Schaik, and J. Johnson (eds.). 1997. **Last Stand: Protected areas and the defence of tropical biodiversity.** Oxford University Press, New York.
- Locher, M. 2004. **Women's Development Approach in the Kangchenjunga Conservation Area Project, East Nepal.** Department of Geography, University of Zürich, Zürich.
- Loksam, P. 2003. **Nature Conservation Practices and its Impacts on Sustainable Development: A case study of Kangchenjunga Conservation Area, Taplejung, Nepal.** Central Department of Geography. Tribhuvan University, Kathmandu.
- Mahato, N. K. 2003. **Status of Red Panda, *Ailurus fulvens* (Cuvier, 1825) in the Kangchenjunga Conservation Area, Nepal.** Institute of Forestry, Pokhara.
- McShane, T. O., and M. P. Wells. 2004. **Getting Biodiversity Project to Work: Towards More Effective Conservation and Development.** Columbia University Press, New York.
- MS (Mountain Spirit). 2003. **Kangchenjunga Conservation Area Project Evaluation Report.** WWF Nepal Program, Kathmandu.
- Müller-Böker, U. and M. Kollmair. 2000. Livelihood Strategies and Local Perceptions of a New Nature Conservation Project in Nepal. The Kanchenjunga Conservation Area Project. *Mountain Research and Development* 20(4): 324-331.
- Oates, J. F. 1995. The dangers of conservation by rural development - a case study from the forests of Nigeria. *Oryx* 29: 115-122.
- Oli, R. B. and B. K. Nepal. 2003. **Non-Timber Forest Products from the Kangchenjunga Conservation Area: Aspects of Trade and Market Opportunities.** WWF Nepal Program, Kathmandu.
- Ostrom, E. 1990. **Governing the Commons: The Evaluation of Institutions for Collective Action.** University Press, Cambridge.
- Salafsky, N. and E. Wollenberg 2000. Linking Livelihoods and Conservation: A Conceptual Framework and Scale for Assessing the Integration of Human Needs and Biodiversity. *World Development* 28(8): 1421-1438.
- Scherl, L. M., A. Wilson, R. Wild, J. Blockhus, P. Franks, J. A. McNeely, and T. O. McShane. 2004. **Can Protected Areas Contribute to Poverty Reduction? Opportunities and Limitations.**

- IUCN, Gland and Cambridge, UK.
- Schubiger, W. 2006. **Land Cover Changes in the Kangchenjunga Conservation Area**, Nepal. Department of Geography, University of Zürich, Zürich.
- Soliva, R., Kollmair, M. and U. Müller-Böker. 2003. Translating Development: The Case of Nepal (Chapter 10). Pages 142-177 in M. Domroes, (eds). **Nature Conservation and Sustainable Development**. Social Science Press, New Delhi.
- Stevens, S. 1997. **Conservation through Cultural Survival: Indigenous Peoples and Protected Areas**. University of California Press, Washington.
- Toccoli, F. 2004. **Protection through Participation. Wildlife Conservation Strategy in the Kanchenjunga Conservation Area, East Nepal**. Department of Geography, University of Zürich, Zürich.
- Wilshusen, P. R., S. R. Brechin, C. L. Fortwangler, and P. C. West. 2002. Policy Reviews - Reinventing a Square Wheel: Critique of a Resurgent “Protection Paradigm” in International Bio-diversity Conservation. **Society and Natural Resources** 15:17-40.
- Worah, S. 2000. International History of ICDPs. UNDP 2000 Proceedings of Integrated Conservation and Development Projects Lessons Learned Workshop, June 12-13, 2000, UNDP/World Bank/WWF, Ha Noi, Viet Nam.
- IUCN (World Conservation Union)/WCPA (World Commission of Protected Areas) 2003. Recommendations of the Vth IUCN World Parks Congress. IUCN, Gland, Switzerland.
- WWF-NP (World Wildlife Fund Nepal Program). 2005. Community Managed Livestock Insurance Scheme for Cost-Benefit Sharing in Kangchenjunga Conservation Area, Nepal. WWF-NP, Kathmandu.
- WWF-NP (World Wildlife Fund Nepal Program). 1998. Kangchenjunga Conservation Area Project: Annual Technical Project Progress Report -July 01, 1997 -June 30, 1998. WWF-NP, Kathmandu.
- WWF-NP (WWF Nepal Program) 1999. Kangchenjunga Conservation Area Project: Annual Technical Project Progress Report -July 01, 1998 -June 30, 1999. WWF-NP, Kathmandu.
- WWF-NP (WWF Nepal Program). 2003-2005. Kangchenjunga Conservation Area Project: Annual Technical Project Progress Reports - July 01, 2003 - June 30, 2006. WWF-NP, Kathmandu.
- WWF-NP (WWF Nepal Program) and ICIMOD (International Centre for Integrated Mountain Development). 2001. **Ecoregion-Based Conservation in the Eastern Himalaya: Identifying important areas for Biodiversity Conservation**. WWF-NP and ICIMOD, Kathmandu.
- Yonzon, P. B. 1996. **Status of Wildlife in the Kanchenjunga Region. A Reconnaissance Study Report**. WWF Nepal Program, Kathmandu.