

Hands Around Everest

Transboundary Cooperation for Conservation and Sustainable Livelihoods



Lhakpa Norbu Sherpa

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Wendy Lama

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Compiled by

Frances Klatzel

Kate Hoffman





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Cooperating Organisations

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It is possible that the best ideas for the future may come not from professionals who try to speak on behalf of mountains, but from mountain peoples themselves who speak for themselves.

– Robert Rhoades –

Foreword

Regional cooperation in the Hindu Kush-Himalayan (HKH) Region is receiving greater attention as nations increasingly recognize that the environmental security and social welfare of mountain people depend upon the management of resources across political borders. Species and communities of plants and animals are not limited by political boundaries and landscapes and ecosystems existed long before national jurisdictions. About 65 countries have developed different strategies to conserve their transboundary resources.

The Mt. Everest region is one such important transboundary landscape. Four contiguous protected areas link hands around Mt. Everest: Qomolangma Nature Preserve in Tibet; and Sagarmatha National Park, Makalu - Barun National Park, and Langtang National Park in Nepal, conserving a large, continuous ecosystem and the rich cultural and natural heritage on both sides of the Himalaya. They jointly cover nearly 40,000 square km, an area large enough for maintaining species, communities, and ecological processes. Reconciling the needs of the local communities with conserving ecosystems and biotic diversity, has become a major challenge facing the managers of these protected areas.

Beginning in 1995, ICIMOD started the Regional Collaborative Programme on Biodiversity Management in partnership with regional member countries of the HKH Region. One of the programme activities initiated and supported by a series of grants from the John D. and Catherine T. MacArthur Foundation and continuing to this day as part of its new strategic plan for 2003-7 is to promote transboundary cooperation for biodiversity management. Successful exchanges and discussions have provided greater options for further collaboration among countries in the region.

The Mountain Institute (TMI), an international NGO based in West Virginia, U.S.A. and the Governments of Nepal and China, have conducted discussions, activities and exchanges since 1986 to promote transboundary collaboration, applied research, and participatory management in biodiversity and cultural conservation in the Mt. Everest region. Since 1994, The Mountain Institute's Transboundary Biodiversity Conservation in the Himalaya

program has also been supported by a grant from the John D. and Catherine T. MacArthur Foundation. Its activities have focused on collaborative planning and management with Protected Area managers, and promotion of economic incentives for conservation initiatives and collaboration.

Recognizing a common goal, to ensure long-term protection of the unique biological and cultural resources of the Himalayan region, and capitalizing on each organization's comparative advantages, ICIMOD and TMI began a collaborative programme in 1998. Since that time, the two organizations have jointly supported transboundary exchanges, site-specific research activities along the border, and production of conservation education materials for transboundary communities.

ICIMOD is extremely grateful for the opportunity to work in such close partnership with TMI. The John D. and Catherine T. MacArthur Foundation has made this collaboration possible by supporting both organizations with a focus on the Central Himalayan region, which includes the Everest region. I hope that this summary of five years of joint efforts provides a valuable platform for future transboundary negotiations among the neighboring countries of Nepal and China, culminating in the protection and conservation of the biological and cultural heritage of the Mt. Everest ecosystem.

J. Gabriel Campbell
Director General, ICIMOD

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Executive Summary

Ecosystems existed long before national jurisdictions, and species and communities of plants and animals are not limited by political boundaries and landscapes. Hence, many countries share biological and natural resources across their borders that to be managed properly require cooperation. One very important transboundary ecosystem is that of the Mt. Everest Himalayas along the border between Nepal and the Tibet Autonomous Region (TAR) of China. This region encompasses an enormous variation in altitude within a short distance and contains an incredible range of landscape types and a rich diversity of plant and animal species. Furthermore, as the location of the head waters of Asia, the Himalayas both link the two countries and take on major significance for many people downstream.

Efforts towards transboundary cooperation for conservation in the Mount Everest region started nearly twenty years ago and progress since then has been slow but steady. This publication summarises activities in an innovative programme started in 1994/1995 by The Mountain Institute (TMI), the International Centre for Integrated Mountain Development (ICIMOD), and the Governments of Nepal and China, under TMI's 'Transboundary Biodiversity Conservation in the Eastern Himalayas Programme' and ICIMOD's 'Programme on Regional Collaboration for Biodiversity Management in the Eastern Himalayas', both funded by the MacArthur Foundation. These programmes, separately and together, have supported a series of discussions and exchange activities among protected area managers, scientists, and local people involving four contiguous protected areas around Mt. Everest – Qomolangma Nature Preserve in TAR, China, and Sagarmatha, Makalu-Barun, and Langtang National Parks in Nepal – and the Kangchenjunga Conservation Area in Nepal. The focus in this book is on the four areas around Mt. Everest, which together conserve a large, continuous ecosystem and rich cultural and natural heritages on both sides of the Himalayas. They cover nearly 40,000 sq. km, an area large enough to maintain species, communities, and ecological processes.

The isolated villages in these protected areas are home to more than 110,000 people who share a common cultural heritage. Reconciling the needs of these local communities with conservation of ecosystems and biodiversity has become a major challenge facing the managers of these protected areas. The protected area managers feel that effective biodiversity

conservation requires active support from the local people, who can be motivated by improving their livelihoods. Though villagers claim that there has been a general improvement in the local economy, more emphasis is needed on opening tourism opportunities and cross-border trade, and on providing education and training for local people.

Park managers identified four key issues on which cooperation was needed: poaching and smuggling of wildlife products, cross-border spread of livestock disease, cross-border spread of forest fires, and livelihoods of people near the border. These four issues were endorsed by a meeting of ministry level and line agency representatives, who formalised the transboundary cooperation efforts and also agreed five specific areas of cooperation. In 1999, a joint study team from Nepal and TAR travelled to five selected villages located along the border and conducted participatory meetings with local villagers on transboundary issues. They presented the outcomes of the village meetings to representatives of relevant government agencies. In general, the concept of transboundary cooperation across the border received strong local support and interest, despite several logistical challenges.

Subsequent transboundary exchanges have strengthened relationships among professionals from both sides of the border and have started to address specific livelihood issues identified in village meetings. The expertise of TMI in ecotourism led to a focus on conservation and ecotourism in some of the exchanges. Follow-up programmes were suggested to strengthen linkages and to address the four main cross-border issues.

This document gives a brief background of the transboundary region and a history of relationships and joint activities between Nepal and TAR, China, related to this area. The various exchanges that have taken place are summarised, and the major characteristics of the villages included in the survey are described, together with the aspirations of the villagers. The situation and progress made on the four key issues are discussed in detail, with sections on problems and possible solutions, and suggestions for future action. The document ends with a discussion of achievements and constraints in cross-border development, and sections giving recommendations for the future and suggestions for immediate action.

The main recommendation was to consolidate and expand transboundary activities: specifically by consolidating and regularising the interaction and communication of protected area professionals and managers; following up on the recommendations for activities at the community level, especially by using existing forums such as annual herders' meetings; promoting joint World Heritage Site designation for QNP; expanding the transboundary activities to contiguous valleys that are not included in protected areas; and expanding transboundary cooperation beyond QNP to include other protected areas of TAR.

Immediate activities that were suggested included offering incentives for information on poaching activities; training in the identification of species that are traded illegally; providing veterinary services for livestock in two villages; conducting a workshop on forest fire management; and preparing a proposal for joint World Heritage Status for QNP.

Abbreviations and Acronyms

AI	appreciative inquiry
APP	Agriculture Perspective Plan
CBO	community-based organisation
CITES	Convention on Illegal Trade in Endangered Species
DC	District of Columbia (USA)
DNPWC	Department of National Parks and Wildlife Conservation (Nepal)
ECA	environment conservation area
FMD	foot-and-mouth disease
HKH	Hindu-Kush Himalayas
HMG	His Majesty's Government (Nepal)
ICIMOD	International Centre for Integrated Mountain Development
IDRC	International Development Research Council
LNP	Langtang National Park
MBNP	Makalu-Barun National Park
Mt.	Mount
NGO	non-government organisation
NTFP	non-timber forest product
PRA	participatory rural appraisal
PRC	People's Republic of China
QCP	Qomolangma Conservation Programme
QNP	Qomolangma Nature Preserve
RRA	rapid rural appraisal
SNP	Sagarmatha National Park
TAR	Tibet Autonomous Region
TMI	The Mountain Institute
UNDP	United Nations Development Programme
USA	United States of America
VDC	village development committee
WWF	World Wide Fund for Nature Conservation



Brian Peniston

Young herder boys lying on a hill near their camp on the high plateau

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Transboundary Issues in the Mount Everest Ecosystem

An Open Boundary

The greater Mount Everest ecoregion

The border region between Nepal and the Tibet Autonomous Region (TAR) of China is defined by the Himalayas, and especially by the highest mountain on earth: Mount Everest – Sagarmatha (in Nepal) – Qomolangma (in TAR). Though this natural barrier may seem formidable, its passes, rivers, and skies are corridors through which people have traded, cultures have mingled, and plants and animals have migrated for millennia. These



Brian Peniston

Shepherds and sheep in a high mountain valley



Prayer flags mark significant landscape features on the way to Everest



Sherpa woman in a pasture in Gokyo Valley, Khumbu

mountains, with their 8,000 metre peaks, deep gorges, thick forests, glaciers, and alpine passes and valleys – the greater Mount Everest ecosystem – link rather than separate the two countries.

Several rivers in this region existed before the Himalayas were lifted by tectonic movements of the continents. As the mountains rose over millennia, the rivers eroded deep gorges to stay on their original courses. One of these rivers, the Arun, starts as glacial melt on the north side of the massif, and turns south, cutting a deep gorge through the Himalayas as it flows. Gorges and passes such as this one link the Tibetan Plateau and the high mountain valleys of Nepal, which have more in common naturally and culturally than either area does with its adjacent lowland regions.

Mountain forests and rangelands help capture and store rainfall, maintain water quality, and reduce erosion and downstream sedimentation. They provide fuelwood, timber, fibre, forage, organic manure, medicine, and wild food for local people. Forests also protect settlements, roads, and trails from natural hazards such as landslides, avalanches, rock falls, and floods. Hence, many local communities respect mountains and forests as the homes of protector deities and the sources of spiritual and cultural ideals. Nestled in Himalayan valleys are the last remaining old growth forests in the region, which are important for maintaining the ecological health of the Asian Sub-continent.

The glaciated mountains of the Himalayas are not only important to those living in the region, they have a tremendous significance for some 500 million people downstream. The Himalayas are the location of the headwaters of all the major river systems flowing north and south through Asia. These rivers provide drinking water, hydropower, irrigation water, fisheries, inland navigation paths, and water for the maintenance of wetlands and biodiversity. Degradation at the headwaters of these rivers can have a major impact on and potentially cause natural disasters in heavily populated areas downstream.

The enormous variation in altitude within a short distance and at low latitude, from 350 to over 8,800m along a line of only 80 km, means that the region extends from sub-tropical forests to glaciated peaks and high-altitude plateau, making the landscape incredibly rich in plant and animal species. Ecosystems in the forests and rangelands around Mount Everest include species from two bio-geographical realms, of which the Himalayas is the junction – the Northern Palearctic and the Southern Oriental. Wildlife in this region – such as snow leopards, wolves, and tahr – cross the border in search of prey or pasture. Migratory birds pass through the open sky and migrate in elevation according to the seasons. Seeds are carried on the wind, in the guts of livestock, and in bird droppings.



Frances Klatzel



Everything is related, but things closest to each other are not related.

- Ancient Chinese proverb -

The historical relationship between Nepal and the Tibet Autonomous Region of China

Nepal and the Tibet Autonomous Region (TAR) of China share a boundary about 885 km long that mostly follows the great Himalayan divide. It forms not only a strong political frontier, but also a seemingly formidable natural barrier. However, the deep gorges, high passes, and open skies are corridors through which rivers have flowed, plants and animals have migrated, people have traded, and cultures have mingled for millennia.

Socioeconomic interactions across the Himalayas have been vital for the survival and growth of a unique human culture. For long periods of history, the borders were effectively non-existent for local farmers and shepherds, although at times these linkages were severed by cross-border disputes of which the remains of old fortresses along the border are reminders.

At present, the opportunity exists to learn from the past and to shape the future through cordial and friendly relations between Nepal and TAR, China. This has enabled the growth of meaningful cross-border exchanges in areas of bilateral trade and tourism. Trade and tourism increased after air and road links were established between Kathmandu and Lhasa. Goods worth over US\$ 40 million are reported to pass annually through the main border crossing between Kodari and Zhangmu. Equally important is the small-scale traditional barter and commercial trade across the 24 high passes along the border.



A common culture and resources

As a result of the remote, mountainous landscape and high-altitude environment, the people living in this region are some of the most isolated and poorest in the world. Traditionally the border was the highest point on the migratory and trading routes rather than a barrier, and the local people continue to travel back and forth – trading, visiting sacred sites, going to marriages, and visiting relatives. Herders have also traditionally moved their yak and sheep across the border – rotating pastures, trading meat, or selling livestock at the annual festivals. ‘Amchis’, traditional healers and herb collectors, search the mountainsides in both countries for valuable medicinal plants.

Other people also move across this border – poachers of rare or valued species, smugglers of illicit goods, and traders of endangered species. These travellers are careless of both international laws and the environment, and leave garbage, debris, and smouldering fires that can quickly become forest fires when caught by the wind. They use, and sometimes abuse, the mountain resources.

In this area of limited resources, those that are available provide the essential basis for traditional life; but their availability is determined by geography and climate, not political boundaries. For example, over 40% of the area of the Himalayas and Tibetan Plateau is covered by rangelands that are important to the diverse cultural groups that rely on range-fed livestock for the majority of their income. These groups often move their herds to rotate the grazing of specific pastures; and this frequently means moving herds across what are now international borders. Accessibility of resources is not only affected by the border, restrictions imposed in protected areas, for example on harvesting of non-timber forest products like medicinal plants for people and livestock or allo (giant nettle) for making cloth, mean that local communities may lack these resources not only in terms of commercial activities, but even on a subsistence level.

The Himalayan protected areas

The mountain landscape around Mount Everest is one of Earth’s most sensitive ecosystems, and the environmental degradation of these highlands can have major impacts downstream. Both governments have independently established protected areas around Mt. Everest and nearby – the Qomolangma Nature Preserve (QNP) in Tibet; and Sagarmatha National Park (SNP), Makalu-Barun National Park (MBNP), and Langtang National Park in Nepal (LNP) – to conserve and protect the ecological and cultural integrity of the pristine forest in the lower valleys and the harsh landscape of the Tibetan plateau. Table 1 summarises some details of these areas; their location is shown on the map overleaf.

The largest of the protected areas, the QNP, is the highest conservation area with a transboundary element in the world, and presents special challenges and opportunities for conservation (Lama and Sherpa 1996). It is one of 15 nature conservation areas set up



Frances Klatzel

Yaks at Gokyo carrying firewood for an expedition in 1983



Lakpa Norbu Sherpa

Local people collecting yarcha gunbu, a medicinal plant, in Nyalam, TAR

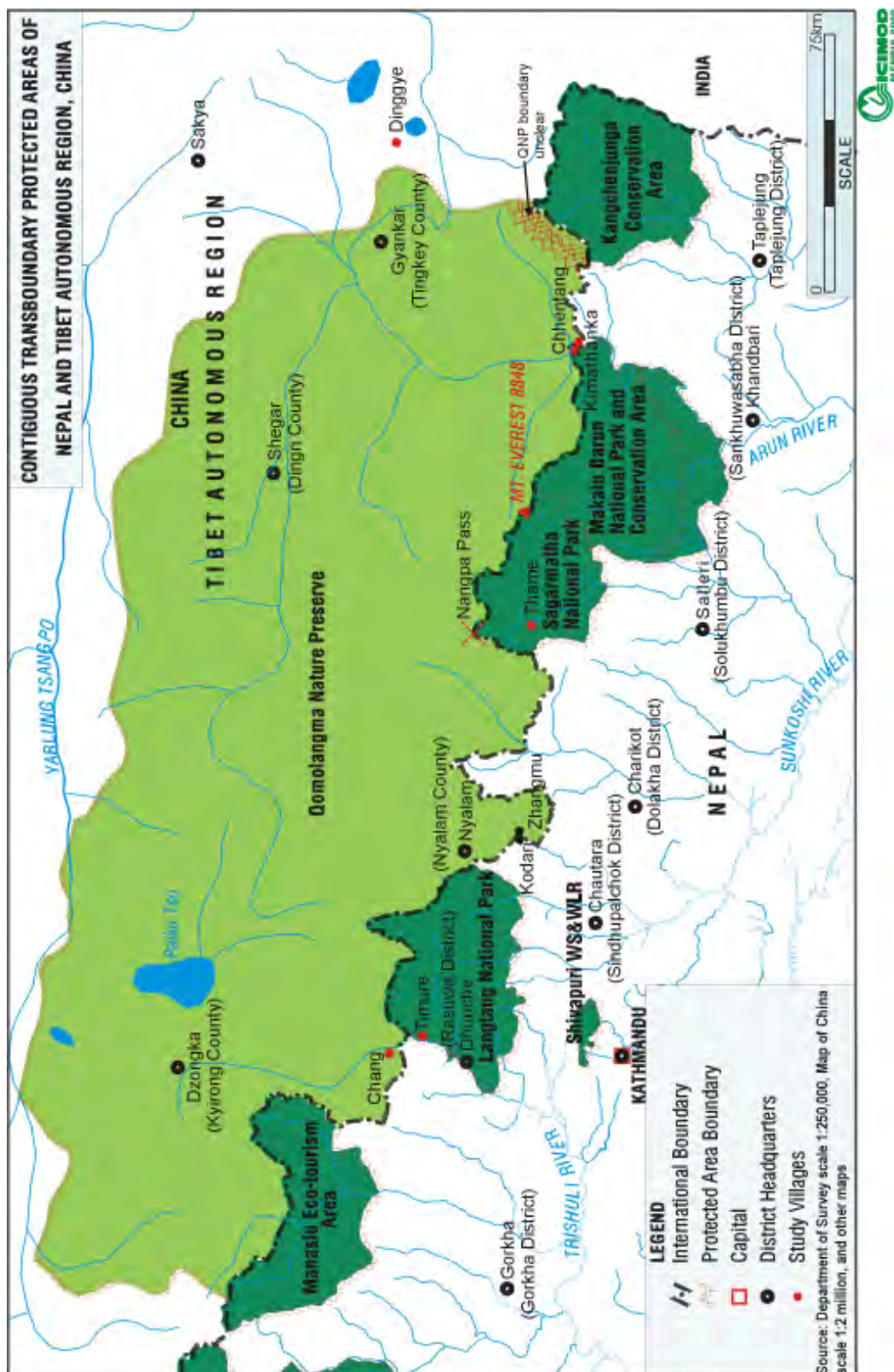


Table 1: Protected areas of the Mt. Everest ecosystem

Protected Area	Country	Established	Area (sq. km.)	Altitude range (m)
Langtang National Park	Nepal	1976	1,710	792 - 7,245
Sagarmatha National Park	Nepal	1976	420 (BZ)	2,800 - 8,850
Makalu-Barun National Park	Nepal	1991	1,148	
and Buffer Zone (BZ)			1,500	435 - 8,463
Qomolangma Nature Preserve	TAR, China	1989	830 (BZ)	
			34,480	2,300 - 8,850

by the TAR government in recognition of the value of the varied alpine and forest ecosystems in the region; together they cover 61% of the land area. Authorities in China have upgraded QNP to National Nature Preserve status.

The three National Parks in Nepal are among the sixteen protected areas in the country, which together cover a total of 18.2% of Nepal's land area. Seven of these protected areas share a border with the TAR.

Together the QNP, SNP, MBNP, and LNP form a contiguous system of protected areas that conserve a large, continuous ecosystem and rich cultural and natural heritages on both sides of the Himalayas. The Makalu-Barun National Park is contiguous with both the Qomolangma Nature Preserve and the Sagarmatha National Park. The Langtang National Park is also contiguous with the QNP, but is separated from the other protected areas in Nepal. These four protected areas jointly cover 40,000 square kilometres, an area large enough for maintaining species, communities, and ecological processes (Lama and Sherpa 1996). However, several adjacent areas in Nepal, for example those along the Friendship Highway, are not included in any protected area. The differences in regulations between unprotected areas in Nepal and nearby protected areas in TAR pose challenges to transboundary management and conservation.

The many isolated communities in these four transboundary parks and preserves are home to nearly 120,000 people with a common cultural heritage. Over 80,000 people live on the TAR side of the border, about 5,000 in the three protected areas on the Nepal side of the Himalayas, and 32,000 in the Makalu-Barun Buffer Zone.

One of the major challenges facing the managers of these areas is to reconcile the needs of the local communities with the requirement of conserving ecosystems and biotic diversity. Support and participation of the local communities is crucial for successful conservation of natural and cultural values. Thus conservation activities must be linked with sustainable livelihood activities for the local people so that they too will benefit from the activities, and will have an interest in their success. This will require collaboration on the part of the Nepal and TAR/Chinese governments.

Development in the transboundary region

In this remote and rugged landscape, border crossings with police and customs check points are few and far between, and communications are poor. However, cordial relations between Nepal and TAR, China have enabled trade and tourism to increase since the establishment of air and road linkages between Kathmandu and Lhasa. In addition, both traditional commodities – such as food grain, salt, wool, yak tails, medicinal herbs, and livestock – and modern products are exchanged in small-scale traditional barter and commercial trade across the 24 high passes along on the border (Upreti 1998). Both the Nepal and TAR governments recognise the importance of these exchanges to sustaining people's livelihoods in the remote border regions (Sherpa 1997).

The Government of China is building and strengthening road access to the Kyirong valley. This will help promote tourism and community-based conservation on both sides of the border. His Majesty's Government (HMG) of Nepal is also developing a road network that will eventually link to the Kyirong road in TAR. This new road will serve as an alternative route to the Kodari-Zhangmu (Lhasa) Friendship Highway route between Nepal and Tibet and will help expand trade between the countries.

Transboundary Cooperation in the Mt. Everest Ecosystem

The advantages of transboundary cooperation

Ecosystems existed long before national jurisdictions, and species and communities of plants and animals are not limited by political boundaries and landscapes. Hence, many countries share biological and natural resources across their borders. About 65 countries have developed strategies to conserve their transboundary resources. The mechanisms for transboundary cooperation range from formal government treaties to field-level cooperation and information sharing between park managers (Sherpa 1997). However, all approaches share the common objective of managing shared natural resources effectively to conserve landscapes, ecosystems, critical habitats, and a diverse range of plant and animal species.

Cooperation includes the conservation of protected areas located adjacent to each other but across international boundaries (Lama and Sherpa 1996). Contiguous protected areas have the advantage of enlarging the total area of protection to include larger uninterrupted areas of ecosystems and a greater variety of habitats. The reasons given for cooperation between adjacent protected areas include the following.

- The management objectives and challenges of neighbouring protected areas are similar (Lama and Sherpa 1996); managers can learn from each other through regular exchanges.



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Sagarmatha, Mount Everest from the Nepal side



Lhakpa Norbu Sherpa

Chomolungma, Mount Everest from TAR

- Transboundary protected areas allow biodiversity conservation at the ecosystem level.
- Natural disturbances – forest fires, floods, pests, and diseases – cross political boundaries; cooperation across boundaries facilitates control and management of such disturbances.
- Larger reserves have a greater potential for species diversity and less risk of biodiversity losses; transboundary protected areas increase the size of the reserve without increasing the cost of management to any individual government.
- Border regions are critical areas for poaching and cross-border trade in endangered species; transboundary protected area collaboration can reduce such harmful activities.
- Conservation is linked to the economic well-being of the local people.
- Cooperation between transboundary protected areas can alleviate poverty through sustainable tourism, trade, and technical exchanges.
- Transboundary conservation cooperation can benefit protected areas through improved staff morale, and joint training and research opportunities.

Development of transboundary cooperation for the Mt. Everest ecosystem

The need to manage the Mt. Everest landscape as an interconnected and integrated whole was recognised a number of years ago. The Mountain Institute (TMI) and the Governments of Nepal and China have conducted discussions, activities, and exchanges since 1986 to promote transboundary collaboration, applied research, and participatory management in biodiversity and cultural conservation in the extended Mount Everest ecosystem area. An innovative programme of transboundary cooperation for conservation was started in 1994/95 by TMI, the International Centre for Integrated Mountain Development (ICIMOD), and the Governments of Nepal and China, under TMI's 'Transboundary Biodiversity Conservation in the Eastern Himalayas Programme' (1994) and ICIMOD's 'Programme on Regional Collaboration for Biodiversity Management in the Eastern Himalayas' (1995), both funded by the MacArthur Foundation (see boxes). These programmes joined forces in 1998; together they have supported a series of discussions and exchange activities among protected area managers, scientists, and local people involving the protected areas of QNP, SNP, MBNP (with its Buffer Zone), LNP, and Kangchenjunga.

From the beginning, the exchanges between TAR and Nepal have emphasised informal, field-level mechanisms. These exchanges have strengthened relationships among professionals from both sides of the border, and the more recent meetings have started to address specific issues identified in prior meetings. The expertise of TMI in ecotourism has led to a focus on conservation and ecotourism in some of the exchanges. Essentially the pattern of the formal exchanges was a meeting between the wardens of the protected areas to identify common ground and major issues, a meeting between representatives of the line agencies/ministries involved to formalise the cooperation efforts, a meeting/study tour for local community leaders to formulate plans for local area actions, a meeting at

Foreign Ministry level to discuss the enforcement of legal requirements, and finally a second meeting of PA directors and managers to review progress and map the way forward (see next section). Other study tours, informal meetings, workshops and consultations were carried out in parallel with these activities, in particular the major village study described below. Table 2 outlines the exchanges between Nepal and TAR under these programmes from 1995 to 2001.

Table 2: Major steps in transboundary exchange in the Mt. Everest region			
Year	Those involved	Type of exchange	Outcomes
1995	The Netherlands and the International Development Research Centre (IDRC)	Missions to Nepal to evaluate the Makalu-Barun Conservation Project	Strongly recommended strengthening transboundary efforts and making provisions for funding for similar activities in QNP to protect species and ecosystems and promote transboundary trade, tourism, and scientific exchanges.
	Managers of protected areas (PAs) from Nepal and TAR, China, facilitated by TMI	Formal information-sharing meeting in Sagarmatha National Park	Four key issues identified on which cooperation is needed: control of poaching, smuggling, and trading of wildlife products; control of cross-border spread of livestock disease; control of cross-border spread of forest fires; and improvement of livelihoods of people near the border through ecotourism.
1996	Line agency/ ministry level representatives from Nepal and TAR, China, facilitated by TMI	Follow-up meeting in Shigatse, TAR to formalise transboundary cooperation	Recommended follow-up at the local level, and a joint study of border villages with a participatory study involving local people. Endorsed the key issues identified by PA managers in 1995. Also recommended <ul style="list-style-type: none"> • increased information sharing and improved communication; • opening of new border crossings for the betterment of local people's livelihoods; • amendment of management regulations to provide a better basis for conservation cooperation; • formation of joint committees to promote conservation and awareness; • cooperation with other government agencies – including internal security, police, immigration, and customs – to ensure international cooperation.
1997	ICIMOD, working with WWF-Nepal and the United Nations Development Programme (UNDP)	Regional consultation on conservation of the Kangchenjunga mountain ecosystem, involving delegates from Tibet, India, and Nepal.	Recommended formal establishment of a transboundary protected area in the Kangchenjunga area, development of a standardised information database of transboundary resources, and promotion of a participatory approach to involve local people in the planning process to ensure conservation awareness and economic benefits from developing tourism enterprises. Transboundary exchanges were identified as being crucial mechanisms to promote collaboration among countries (Rastogi et al 1997).

Cont'd ...

Table 2: Major steps in transboundary exchange in the Mt. Everest region (cont'd)			
Year	Those involved	Type of exchange	Outcomes
1998	TMI and ICIMOD, with the Governments of Nepal and TAR, China	Training workshop and study tour for county leaders and QNP workers	Training given on a range of techniques for conservation and participatory local development. These activities helped further discussions, knowledge, and skill development of protected area managers, government officials, and community members. Key issues for collaboration were transboundary biodiversity conservation and community-based tourism.
	TMI, ICIMOD, Nepal Department of National Parks and Wildlife Conservation (DNPWC), and QNP	Transboundary study tour and training workshop on conservation and ecotourism, took place in Nepal	Objectives were to expose participants to tourism possibilities and explore joint ecotourism programmes. Community-based tourism management skills were developed, based on Nepal's successful ecotourism experience. Participants were local community leaders from Kyirong and Nyalam counties, TAR, and neighbouring villages of LNP, Nepal. Participants agreed to develop local-level committees, design local action plans, and conduct joint studies on issues of mutual concern.
1999	Foreign Ministry-level consultative meeting between Nepal and China	Discussion of transboundary conservation cooperation	Agreed that transboundary cooperation should be used to tackle the problem of illegal poaching and trade in endangered wildlife species across the Nepal-TAR border.
2001	Protected Area directors and managers at various levels from Nepal and TAR	Assessment of progress in trans-boundary cooperation since 1996	Agreed that much progress had been made on the five points of cooperation determined during the 1996 exchange and that this had led to improvements in nature conservation. A detailed list of activities for strengthening transboundary cooperation was agreed.

Village participatory study

The joint participatory study recommended in the 1996 Shigatse exchange, and further discussed in the 1997 and 1998 exchanges (Table 2), was carried out in 1999. The aim was to develop a participatory approach and strengthen the involvement of local people, whilst collecting the information needed as a base for determining the most effective way for the programme to proceed. A joint study team from Nepal and TAR travelled to five villages located along the border and conducted participatory meetings with local villagers on transboundary issues. The results were presented to government agency representatives. In general, the concept of transboundary cooperation received strong local interest and support. The villages and methodology are described in more detail in Chapter 2; the results of the study form the bulk of the findings presented in Chapter 3.

The study team recommended developing a Memorandum of Understanding and a framework for future cooperation. Local-level follow-up programmes were designed to address the cross-border issues identified in earlier exchanges; these programmes included the following.

- Strengthen ties between both countries – form local committees through joint research and increased communication.
- Reduce poaching – strengthen institutional capacity and laws.
- Manage forest fires – integrate fire management into protected area planning, and increase local awareness and support.
- Improve local livelihoods – develop tourism, stimulate cross-border traditional trade, encourage resource-based livelihoods, support sustainable agro-pastoral livelihoods, and develop village infrastructure.
- Reduce transfer of livestock disease – improve services, including basic training for herders and the exchange of research and information.

The most recent transboundary exchange meeting

The most recent transboundary exchange meeting took place in Lhasa and Shigatse in September/October 2001. The participants included directors and managers at various levels of the contiguous protected areas in Nepal and TAR. They assessed the progress on transboundary cooperation since 1995, using the formal agreement from the 1996 Shigatse exchange as a baseline, together with the information gathered during the 1999 survey (see next section). The Shigatse exchange had endorsed the four key issues on which cooperation was needed, first identified in the meeting of directors and managers in 1995, and listed five points of cooperation. Participants in the meeting considered that both Nepal and TAR had made progress on all the points of cooperation and it was felt that the status of nature conservation was improving as a result. Most progress had taken place at the local level, especially in those adjacent protected areas where the terrain was less extreme and access was easier, like Langtang National Park and Kyirong County, TAR.

Steady progress had been made in information sharing and communication, especially regarding the issues of poaching and illegal trading. This was especially effective when achieved through existing mechanisms, such as the annual herder meetings that take place independently of transboundary programmes. Use of these existing forums to share information had been very successful, and they could be used for future training activities. Information-sharing had resulted in several poachers being arrested in Makalu-Barun and Langtang National Parks. However, overall enforcement of regulations on poaching and illegal trade was limited, because cross-border prosecution was still difficult.

The meeting looked at five major areas of concern and potential solutions.

Transboundary livestock movement from Nepal to TAR was decreasing, mostly due to changes in local fees for pasture use. Transmission of livestock disease remained a concern, although there had been no major outbreaks in the previous five years. As a result of the better road access, veterinary services in TAR are more comprehensive than in Nepal. It was suggested that Nepali livestock could be vaccinated at the annual herders' meetings



The Mountain Institute

The Mountain Institute (TMI), an international non-governmental organisation (NGO) based in Washington DC, USA, is particularly sensitive to the economic well-being of local inhabitants for whom the mountains are home. TMI and the Governments of Nepal and China have conducted discussions, activities, and exchanges since 1986 to promote transboundary collaboration, applied research, and participatory management in biodiversity and cultural conservation over a combined extended protected area of 40,000 sq km shared by Qomolangma Nature Preserve (QNP) of the Tibet Autonomous Region of China and the three adjoining mountain national parks of Nepal: Sagarmatha (Mount Everest), Langtang, and Makalu-Barun. TMI was instrumental in helping the governments of both countries to establish new protected areas on both sides of the Mount Everest ecosystem, particularly the QNP and Makalu-Barun.

The Mountain Institute's 'Transboundary Biodiversity Conservation in the Eastern Himalayas' programme, supported by a grant from the John D. and Catherine T. MacArthur Foundation since 1994, seeks to reduce threats to biodiversity through collaborative planning and management and by promoting economic incentives for maintaining a close cooperative relationship between the countries.

The issues that must be addressed during future transboundary activities include:

- developing a mechanism for sharing information and maintaining communication about common concerns such as fire, poaching, and illegal timber and trade;
- exploring new border routes for ecotourism and promotion of handicrafts, training, business contacts, and other activities to promote ecotourism; and
- convening a transboundary protected area conservation committee or a working group to coordinate management regulations and activities at the local level.





International Centre for Integrated Mountain Development

The primary role of the International Centre for Integrated Mountain Development (ICIMOD) - located in Kathmandu, Nepal - is to facilitate countries of the HKH region to come together, share, and participate in common concerns and responsibilities, given the importance of recognising the ecological and socioeconomic links that they share as part of the same ecosystem. A multi-pronged approach for mountain development encompasses issues related to agriculture, livestock, forestry, infrastructure, water resources, gender balance and others.

ICIMOD is involved in transboundary activities under its programme on 'Regional Collaboration for Biodiversity Management in the Eastern Himalayas', with the main objectives:

- to improve biodiversity management in the eastern Himalayas through institutional collaboration and field-level activities, with a focus on protected areas and their buffer zones and surrounding agro-ecosystems;
- to review and share experiences in buffer zone and agro-ecosystem management and create long-term programmes for improving the prospects of biodiversity conservation with community participation; and
- to promote transboundary cooperation for biodiversity conservation.

Since 1995, ICIMOD has organised four regional and sub-regional workshops and training/exchange visits between India, China, and Myanmar and between Nepal and Tibet Autonomous Region, China. Various successful exchanges and discussions have provided greater options for further collaboration among countries in the region.





Brian Peniston

in TAR. Herders also stated their willingness to stop transhumance if pasture conditions improved in Nepal.

Fire management remained a concern, especially for the representatives from the TAR. Careless herders and poachers were blamed for most of the uncontrolled fires. The Sagarmatha National Park Chief Warden shared his recent experience in fire control using local committees and people, which was seen as viable and cost effective.

Control of **poaching and control of trade in endangered species and animal products** was still an issue. The meeting highlighted a weakness: customs personnel were in many cases unable to identify which species were protected or the likely source of animal products. A recommendation was made that a joint training exercise be held for customs personnel from both countries to strengthen enforcement of regulations.

Progress towards establishment of central committees had been **slow** on both sides, because it had been difficult to coordinate among the different ministries at the higher levels, although coordination at the field level had worked well. Formal, high-level cooperation would require ratification by a government-to-government treaty, which would take many years to complete. Nepali officials in the Ministry of Foreign Affairs advised that the existing exchange of letters and memorandums of understanding at lower levels would be sufficient for future field-level cooperation.

From a **World Heritage perspective**, the exchange again acknowledged the importance of the Mt. Everest landscape, and the participants recommended that the Government of TAR apply to have QNP upgraded to formal World Heritage Site status.

The participants proposed that **specific follow-up plans** be formulated, because the general recommendations emerging from the previous exchanges were difficult to prioritise and implement. Several specific training workshops were proposed, including training of customs officials in the identification of illegal species and training of herders in conservation and fire awareness. The participants proposed providing for veterinary services in Nepal. Further, participants recognised the value of the transboundary exposure tours and requested that future exchanges include protected area staff from other TAR sites as well.

The exchange concluded with a strong commitment to transboundary conservation of the Mt. Everest landscape and an endorsement of local and field-level cooperation as the most effective tool for conservation. Both governments strongly endorsed continued follow-up by TMI and ICIMOD to facilitate future programmes.

The **specific activities suggested to strengthen linkages** were as follow.

- ❖ Raise the profile of the Transboundary Programme
 - Recommend that the Government of China apply to have Qomolangma Nature Preserve considered for joint World Heritage Site status with Nepal's Sagarmatha National Park
 - Arrange exchanges between government officials, and encourage them to advocate central support for transboundary programmes
 - Develop legal mechanisms to implement international and other bilateral agreements, such as the Convention on Illegal Trade in Endangered Species (CITES)
- ❖ Strengthen protected area linkages
 - Conduct regular transboundary protected area exchanges between TAR and Nepal to promote a common understanding and a collaborative working relationship
 - Attend joint training programmes on transboundary and other technical issues
 - Organise staff exchanges for park/forest/livestock personnel
 - Designate a representative from each county in QNP, and each national park in Nepal, to participate in all exchanges for consistency and follow-through
- ❖ Form local transboundary committees
 - Set up local transboundary committees and sub-committees on both sides of the border that meet regularly to deal with local issues; these committees could include village development committee, park, police, customs, community based organisation (CBO), and veterinary office personnel, and local people
 - Provide the remuneration and funding support needed for local officials and CBOs
 - Make the authority and responsibilities of these committees clear to members
 - Explore possibilities for integration of transboundary committees into buffer zone programmes
- ❖ Conduct joint research and gather information through local committees and protected area staff
 - Organise joint research on key issues
 - Publish joint papers on transboundary topics of interest
- ❖ Develop funding mechanisms
 - Develop methods of generating and allocating protected area revenues to fund transboundary initiatives
 - Develop joint proposals for international donor funding
 - Advocate commitment from other government departments from different sectors



CHAPTER TWO

Villages of the Transboundary Region

The Joint Study

The 1996 exchange meeting held in Shigatse, TAR, recommended that a joint study be carried out in the border villages in the contiguous protected area of the greater Mount Everest ecoregion. The aim was to develop a participatory approach and facilitate sharing of experiences and priorities between people on both sides of the border, and to use this as a basis for collecting the data and information needed to further formulate priorities and activities in the transboundary programmes.

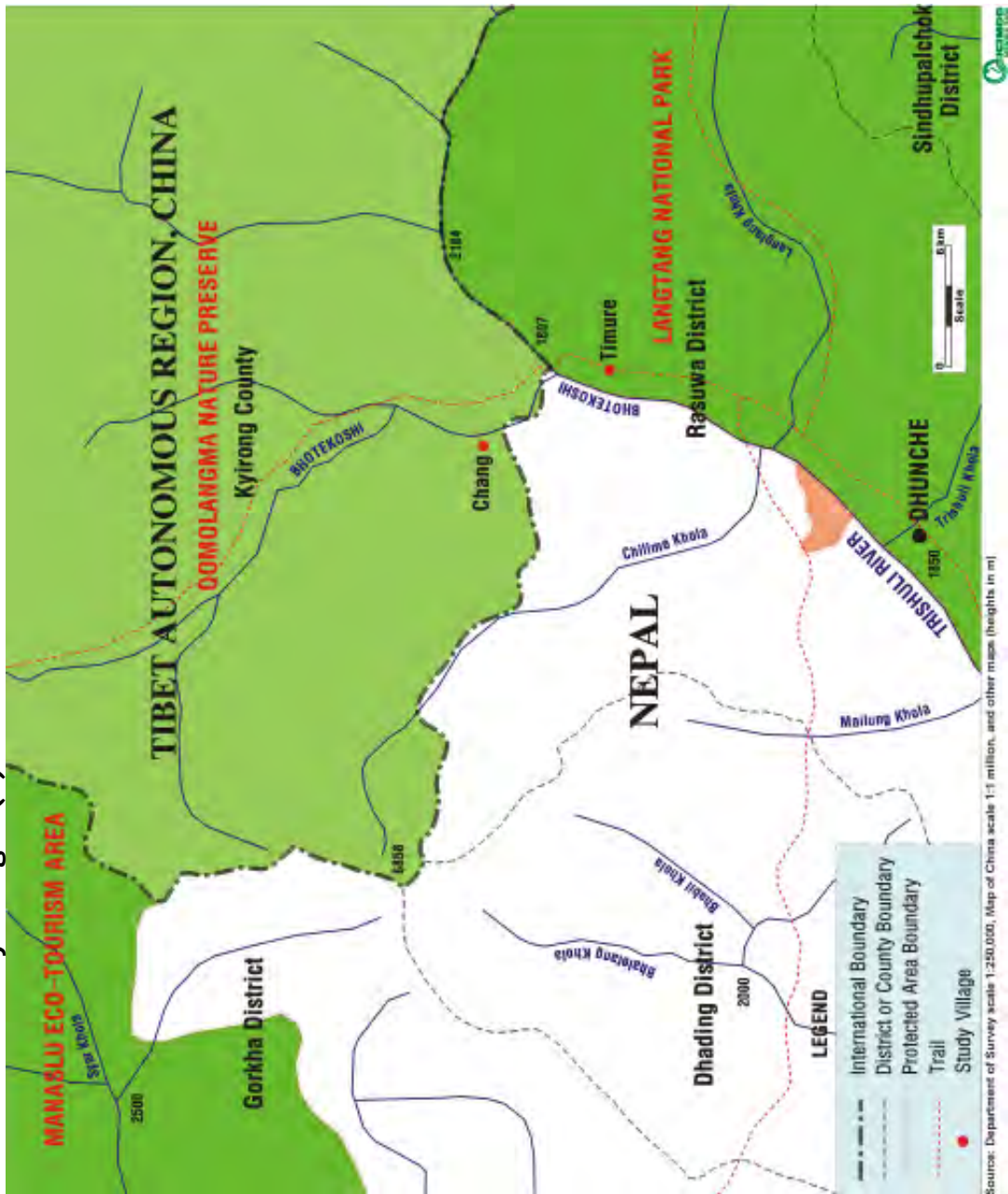
Villages were selected that were close to the border, that had a complementary village within a day's walk on the other side of the border, and that lay on the most intensively used trade routes. Five communities were chosen, one in each of the national parks in Nepal, and one in each of the two counties in Qomolangma Nature Preserve, TAR. They were, **Timure village** in Rasuwa district, Langtang National Park; **Kimathanka village** in Sankhuwasabha district, Makalu-Barun National Park buffer zone; and **Thame village** in Solukhumbu district, Sagarmatha National Park, all in Nepal; and **Chang village** in Kyirong County and **Chhentang village** in Tinkey County, both in Qomolangma Nature Preserve, Tibet Autonomous Region, China. Together they represent the different situations of all those living in the directly transboundary portion of the protected areas. The locations are shown on the maps.

All of the villages are located in areas recognised for their diverse and unique flora, fauna, scenic beauty, and mountain cultures: the Khumbu (in SNP), Upper Arun (in MBNP), and Rasuwa (in LNP) in Nepal, and the Chhentang Chhu and Kyirong valleys in TAR. The Kama and Riwu valleys of Chhentang Chhu, and Kyirong valley, have been declared 'core zones' of Qomolangma Nature Preserve.

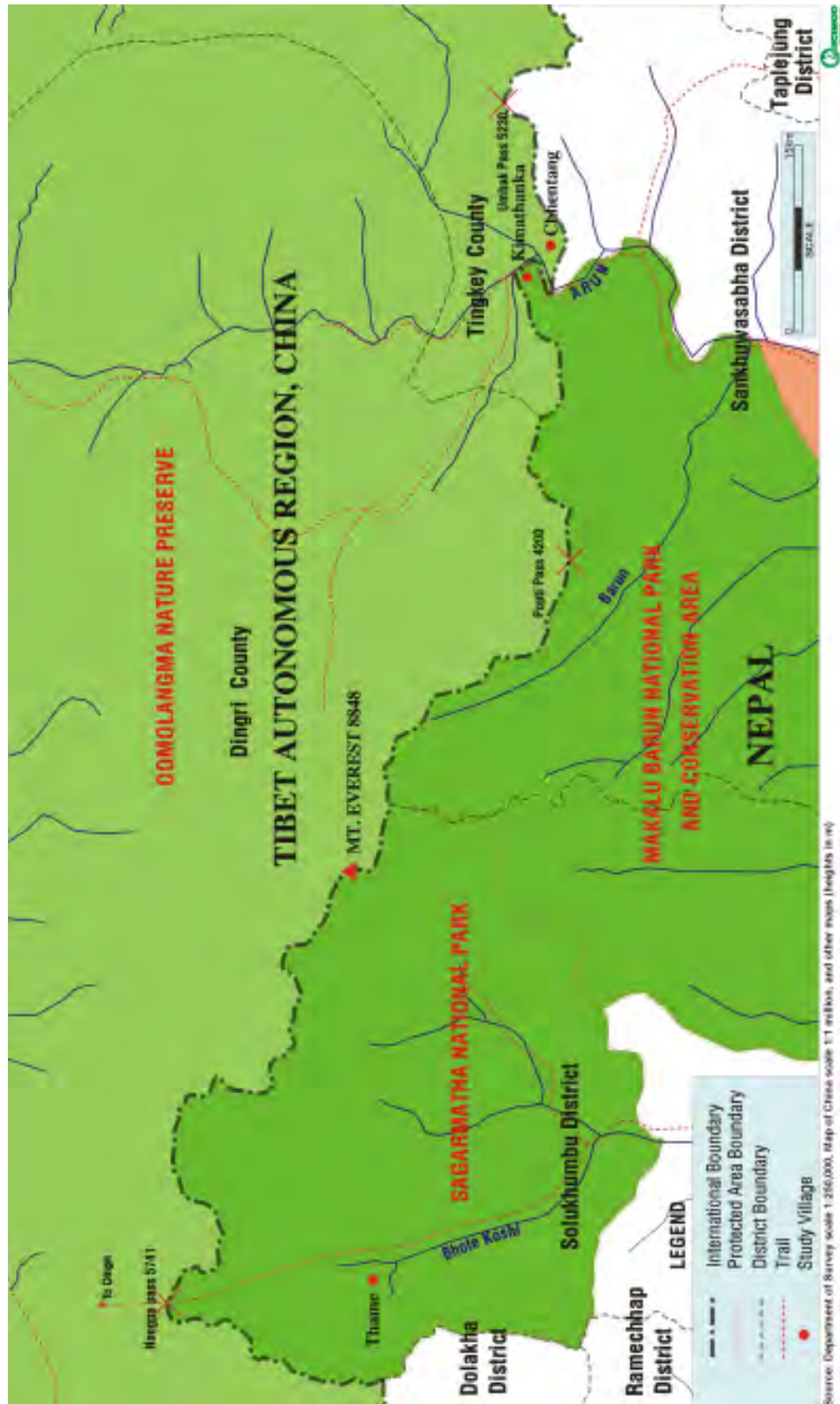
The villages are located at different altitudes and proximities to roads and airfields and each village is unique in its specific history and sociocultural characteristics, but they also have many shared characteristics including

- close proximity to a China-Nepal border crossing;
- partial or full restriction on international tourism;
- location within official protected areas;

Location of Study Villages (1)



Location of Study Villages (2)



- high topographic variation and rich biological diversity;
- agriculture, pastoralism, and trans-Himalayan trade as main economic activities;
- populations consisting mostly of Tibeto-Burman people of Buddhist faith;
- poverty and inadequate health and education facilities;
- polyandrous marriage as a strategy to cope with land limitations, and diverse economic activities.

The study approach

The joint study team consisted of staff from the Department of National Parks and Wildlife Conservation, Nepal, and from the Qomolangma Nature Preserve, TAR. Sixteen participants/trainees attended a four-day planning and training workshop in Kathmandu, Nepal. Their expertise included transboundary conservation issues, participatory methods, protected area management, ecotourism, rangelands, and environmental law. The aims of the meeting were

- to develop a better understanding of the key transboundary issues,
- to identify field study sites and develop common study methods, and
- to develop field procedures by integrating a number of participatory techniques such as participatory rural appraisal (PRA), rapid rural appraisal (RRA), and appreciative inquiry (AI). These techniques were complimented by field observations, formal and informal consultations, and a literature review.

The study team then held consultative meetings in the selected villages using the four steps (4-D model) prescribed by the AI methodology: discovery, dream, design, and delivery. This approach enabled the team to gain a reasonable understanding of the community within the available timeframe. It also provided a solid base of community support, awareness, and interest from which initiatives for biodiversity conservation can be linked to livelihood development and cross-border cooperation.

Discovery phase

Village community strengths and successes, resource availability, livelihood activities, institutional networks, and socioeconomic trends were uncovered through participatory discussion and mapping.

In a positive and affirming atmosphere, the participants were asked to identify the **successes and strengths** of their community and the positive features of the place where they live. This helped to identify important local assets and their potential.

Participants carried out **resource mapping** by mapping village boundaries, houses, trails, water bodies, rivers, religious sites, forests, pastures, facilities, and other information that indicated the adequacy and distribution of resources.

Participants prepared **seasonal calendars**, showing the timing and duration of different activities, to identify the patterns of the main livelihood events (agricultural, pastoral, festivals, travel, trade, and tourism).

Institutional diagrams were prepared to help identify institutions and organisations that local people perceive as having an impact on their community. They were also useful for identifying potential collaborators in programmes and projects.

The participants identified a number of socio-economic and environmental variables (hunting and poaching of wildlife, forest fire events, livestock diseases, human population, economy, trade, tourism, sanitation, crime rate, education, and cultural change). They were then asked to chart the **past trends** for each of these variables by drawing lines from past to present on a two-dimensional axis.

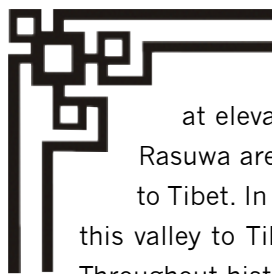
Dream phase

Participants were asked to extend the trend lines of each variable into the future to indicate their **desired future trends**. Once the line was extended, the strategies and activities necessary to achieve the trend were solicited and discussed. For example, if the villagers wish to see the forest area increase, the actions necessary to achieve that dream were identified and listed.

Design and delivery phase

The activities that evolved out of the participatory village consultative process were developed as recommendations and included in the future project planning process.

The study villages



Timure and Khamjing - the ancient gateway

Timure and its neighbour village, Khamjing, are located in the upper Rasuwa Valley of Nepal in Langtang National Park in Nepal at elevations of around 1,700 and 2,200, respectively. The headwaters of Rasuwa are in Kyirong County of TAR, and this corridor was the historic route to Tibet. In the seventh century, Bhrikuti, a princess of Nepal, travelled through this valley to Tibet when she married the famous Tibetan king, Songtsen Gampo. Throughout history, Buddhist monks from China and Nepal have travelled this way for religious exchanges. Several Nepal-Tibet wars have ravaged the area and old forts in both Nepal and TAR are now historical monuments.

The valley was an important trading route between Nepal and Tibet until the opening of the Lhasa-Kathmandu highway through Nyalam diminished its importance. The limited



Khamjing

trade that still takes place through the valley helps sustain the local economy. At present, the nearest road head on the Nepal side is located about 17 km down from Timure, but the government plans to extend this road to the border to connect with Kyirong county and beyond. Timure is linked to Chang village in TAR across the border Rasuwagadhi.

The community of 237 households and 1,128 people mostly consists of ethnic Tamangs. Subsistence agriculture and livestock are the main economic activities, which families complement with income from migratory work elsewhere in Nepal and India. The economic conditions are marginal. Rasuwa district ranks as the 23rd poorest district in Nepal (out of 75, ICIMOD 1977), and Khamjing and Timure are the poorest villages in the area. The literacy rate in these villages is about 30%.

The settlements are in forests scattered up the slopes. Most houses are built in the traditional style with rock, wooden shingle, or slate roofing. Agricultural land is limited by the steep topography, but the relatively warm climate supports crops of maize, millet, potato, and a variety of vegetables. The two most common cash crops are apple and chilli. The 3,187 head of livestock include lowland cattle, goats, and cattle-yak crossbreeds. The area has adequate forests and pastures, from which the local people extract a variety of resources including firewood, roofing slates, construction timber, and medicinal and

Village dreams – Timure area

Improved bulls
Improved education
Trading post at the border
Increased tourist numbers
Better availability of food and clothing
Better forest conservation and reforestation
Improved sanitation and drinking water
Wild boar population control
Telephone connections
Helicopter services
Skills development
Improved trails



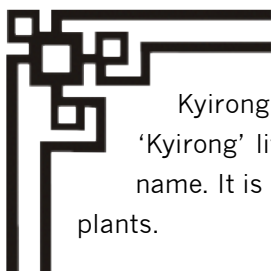
Lhakpa Norbu Sherpa

People of Timure

aromatic plants. Pine, oak, fir, birch, and rhododendron are the dominant tree species. Fire-tolerant *Pinus roxburghii* forest dominates the dry slopes below 2,000 m. Denser forests of *Pinus excelsa*, *Abies spectabilis*, *Rhododendron*, and *Betula* are found at higher elevations, where fire and human disturbances are less frequent.

The forests and wildlife of the area are protected by Langtang National Park. Common wildlife includes musk deer, black bear, jungle leopard, monkey, langur, red panda, yellow-throated marten, and other small mammals. According to local residents, the wild boar population has grown since the establishment of the park and it has become a major pest in damaging agricultural crops.

Timure and surrounding VDC's are located within the area restricted to tourism until 2002, and have thus far been deprived of revenue from this source. Tourism has brought significant prosperity to the adjacent Langtang Valley. The local people propose alpine lakes, views, vegetation, and wildlife as potential tourist attractions. The traditional villages, historical sites, culture, and architecture of the local people are also unique. Given the option, the people of Timure would prefer to have foot trekking in the area, rather than a road.



Chang - a hamlet in the valley of happiness

Chang is a hamlet near the border in the southern part of the Kyirong valley of TAR, and now within the Qomolangma Nature Preserve. 'Kyirong' literally means 'the pleasant country', and the valley lives up to its name. It is rich in forests, great mountain views, plentiful water, and medicinal plants.

The valley is deeply rooted in the history and culture of Buddhism. Taga Taso, the ancient hermitage of Milarepa, can still be seen high on a cliff face. The historic Phagpa temple, believed to have been commissioned by Songtsen Gampo in honour of his Nepali wife, stands graciously in Kyirong village.

There are many large and small settlements scattered throughout the Kyirong valley. Chang is the lowest village near the Nepal-TAR border, and is linked by this route to Timure village in Langtang National Park. Located at an elevation of 2,400 m and exposed to monsoon rains, Chang has a moist temperate climate suitable for growing barley, wheat, corn, millet, potatoes, beans, pumpkin, turnips, and a variety of other vegetables. Locally grown fruits include apples, walnuts, and pears. The total cultivated area is limited by the hilly topography to 1,550 ha.

The people of Chang have excellent access to forest resources, especially the temperate and sub-alpine species of *Pinus*, *Quercus*, *Tsuga*, *Abies*, and *Betula*. Forests and grasslands



Travelling to Chang

are rich in wildlife. The wildlife species are similar to those in the nearby Timure area of Nepal, due to their similar environments. The rich biodiversity of Kyirong valley includes medicinal plants such as *Delphinium*, *Picrorhiza*, and *Nordotachys*. Bamboo is a valuable forest product used by the villagers to manufacture a wide range of products for domestic and export uses. Local people are concerned that the recent flowering of bamboo and subsequent dieback may cause a shortage of this resource for a number of years.

Animal husbandry is one of the main activities. The villagers own a total livestock population of 108 animals - mainly 'dzomo', 'dzo', cows, and yaks. They crossbreed cows and yaks to produce dzo (males) for export, and dzomo (females) for local milk production. The Chang people do not raise sheep and goats but keep chickens to produce eggs for sale. Despite its close proximity to the Nepal-TAR border, Chang village does not appear to engage in trans-border trade.

Chang village has only nine households with 54 people. The population has been declining, because many members of the community migrate out in search of educational and business opportunities. Population centres such as the Kyirong township are attractive, especially to young people, because of educational, health, and work opportunities. A number of families from Chang have been relocated closer to the township of Kyirong by

Village dreams – Chang

Vigilant forestry staff
Shelters for travellers
Supply of chemical fertiliser
Veterinary supplies and a technician
Improved sanitation and drinking water
Mobilisation of women to educate children
Training for the local population in fire control and wildlife conservation
Protection from damage to crops by wildlife and compensation for losses
Local participation in forest and wildlife protection
Improved water-supply system, Management of hot spring
Improved trails, Extension of road to border
Skills development, Mechanised barley thresher
Training for locals in animal husbandry
Migration to bigger centres



Lhakpa Norbu Sherpa

People of Chang

the government. More families aspire to move, given similar opportunities, and it appears that the community of Chang has become too small to be viable. Chang village may become more attractive in the near future if the planned road connection between Kyirong and Rasuwa district of Nepal is built.



Kimathanka - a village on a fern-covered flat

Kimathanka is located at the upper end of the Arun valley, where the Phung 'Chhu' (river) enters Nepal from TAR and becomes the Arun River. Poised on the right bank of the Arun River on a northeast-facing slope, Kimathanka is one of the most isolated villages in Nepal. Across the Arun lies the Chhentang Chhu of TAR, and Chhentang village so it is said that the children of Kimathanka grow up looking at Tibet, not at Nepal. The village lies in the buffer zone of Makalu-Barun National Park.

The people of Kimathanka village are mostly Sherpas. In their oral tradition, their forefathers came from 'Sakyiding', meaning 'pleasant land surface' – an ancient settlement at the headwaters of Kama Chhu. When migrants came searching for an alternative place to settle, they found a small flat area overgrown with ferns. They settled there and named it 'Kimathanka', meaning 'the flat area covered by ferns'. It is difficult to determine precisely when the migration took place. It is reported that ruins of a former settlement of considerable



Ang Rita Sherpa

People from Kimathanka sitting on rocks

Village dreams – Kimathanka

Agricultural improvement
Cultural conservation and awareness
Scholarships for students, especially girls
Removal of tourism restricted area status
Involvement of local groups in poaching prevention
Facilities for local language lessons in school
Forest fire protection and reforestation
Skills training in bamboo crafts
Credit facilities for small traders
Veterinary training and services
Production of medicinal herbs



Ang Rita Sherpa

size still exist in Sakyiding. Legend has it that a pestilence caused by local demons wiped out many of the area's inhabitants, and no one dared to resettle there (Howard-Bury 1991).

Kimathanka is the smallest village development committee area (VDC) in Nepal, with only 48 households and 336 people. The village has a primary school, a health post, a post office, and a monastery. The main sources of income are the production and sale of live 'chauri' (yak-cow crossbreeds) and butter to neighbouring villages in Nepal and TAR. There are approximately 725 head of livestock in the village, mainly yaks and yak-cow crossbreeds, which herders take to higher pastures in summer and bring down to the village in winter. Kimathanka VDC has limited access to forest and pastureland because it is tightly enclosed between Chepuwa VDC of Nepal and TAR. Much of its traditional summer rangeland fell within TAR following the demarcation of the China-Nepal border in 1969. The pasture shortage is now addressed through transboundary grazing agreements with Chhentang 'Shang' (village administration) of TAR and the payment of grazing fees. The people of Kimathanka also make bamboo craft pieces that are exchanged in Riwu, TAR, for a variety of consumer goods and food items. The relatively mild climate of Kimathanka supports the production of a variety of agricultural crops, but cultivable land is limited by the steep and rocky terrain.



Chhentang - a village on a desolate flat

According to a local official, the name 'Chhentang' means 'desolate or remote flat'. Located in the southern part of Tinkey county, TAR, near the Nepal border, Chhentang is one of the most isolated villages in TAR. The Chhentang Chhu watershed covers two 'shangs' (village administrations) - Chhentang and Chanka. Kimathanka in Nepal lies directly across the Arun and Kama rivers, opposite Chhentang and Chanka villages.

Located on the south slope of the main Himalayan range, Chhentang 'Chhu' (river) valley is directly impacted by summer monsoons. As a result, its climate differs greatly from the upper plateau of TAR. This unusual climate has led to the development of an ecosystem and culture that is unique in TAR.

Chhentang village has 280 families with a total of 1,523 people spread over six settlements. The two main economic activities are raising livestock and subsistence agriculture. Chhentang has a cultivable land area of about 12,000 ha, on which corn, potatoes, barley, millet, wheat, turnips, cucumbers, pumpkins, beans, peas, and amaranths are grown. Apples, apricots, and walnuts are also grown in limited quantities.

Local people claim that the moist environment creates grain-storage difficulties. In the past, people depended heavily on wild foods, such as 'tho' (*Arisaema sp.*), mushrooms, vegetables, and wild meat. In fact, Chhentang people are renowned for hunting skills and knowledge. Now, however, much of the food deficit is met by importing subsidised grain

Village dreams - Chhentang

Forest fire control
Improved livestock breeds
Improved school infrastructure
Reduced wildlife poaching activities
Horticultural improvement activities
Opportunity for relocation elsewhere
Training for locals in livestock disease
Road extension from Riwu to Chhentang
Government-assigned trained veterinarians
Trained health workers and medicine
Crosscut saw to reduce timber wastage
Hydropower supply for villages
Better bridges across rivers
Improved local livelihoods
Improved water supply



Lhakpa Norbu Sherpa

Discussion in Chhentang

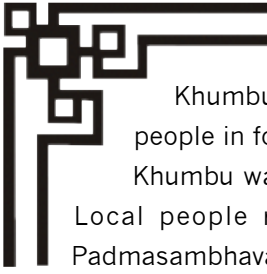


Kimanthanka (left) and Chhentang (right) separated by the Karma Chha

from Riwu, a township located about 40-50 km north at the nearest road head to Chhentang. Trading trips to Riwu can take eight to ten days. Chhentang residents interact closely with the adjacent community of Kimathanka but conduct very little trade with them.

Chhentang has very rich forest resources. Although the condition of the forest has been altered by centuries of grazing and agriculture, there are rare pockets of old growth forest. Timber cutting and medicinal plant collection are major local economic activities. These products are either sold for cash, or traded for other goods and services. Chhentang forests and rangelands are some of the richest for medicinal plants. Plants commonly harvested include species of *Leontopodium*, *Delphinium*, *Swertia*, *Nardotachys*, *Picrorhiza*, *Zanthoxylum*, and *Cordyceps*.

Animal husbandry is an important component of the Chhentang economy. Once the people of Chhentang have sown the crops in the lower villages, they move their animals to summer settlements for eight or nine months. Chhentang villagers keep cows, goats, chickens, dzo, and dzomo, but not pigs or sheep. The forested environment of Chhentang is an ideal habitat for many species of wildlife. Species sighted in the area by local residents include Assamese macaque, clouded leopard, leopard cat, marbled cat, snow leopard, leopard, Himalayan black bear, blue sheep, Himalayan tahr, serow, goral, musk deer, muntjac, red panda, common otter, Indian otter, beech marten, and the Himalayan yellow-throated marten.



Thame - a hidden sanctuary

About 500 years ago, the Sherpa people discovered and settled in Khumbu, Nepal. This region now has a population of approximately 3,500 people in four distinct communities in different river valleys. It is believed that Khumbu was an uninhabited area before the arrival of the Sherpa ancestors.

Local people regard the Khumbu as one of the hidden sanctuaries that Padmasambhava ('Ugyen Beyul') set aside to be discovered by people in times of trouble. The sacred status of Khumbu shaped the attitude of the Sherpas towards nature and people. They regard forests, wildlife, and landscapes as sacred; they refrain from hunting, cutting green trees, and even slaughtering their own domestic livestock.

The Thame valley is said to be one of the earliest settlements in the Khumbu region, it now lies within the Sagarmatha National Park. At 3,300 m elevation, Thame village is located in the sub-alpine zone. Forests cover only about 20% of the watershed, with shrubs, grass, rock, ice, and snow covering the remaining 80%. There are about 1,000 head of large livestock in the village and 200 small animals, mainly sheep.

The Khumbu was closed to foreigners before the 1950s but is now one of the most visited mountain destinations in Nepal. From the 60 people who visited Khumbu in 1960, the



Frances Klatzel

Thame

Village dreams - Thame

Improved household sanitation
Controlled human population growth
Promotion of cultural conservation
Growth of balanced cross-border trade
Increased number of educated young people, especially girls
Improved quality and flow of tourists into Thame valley
Improved forest growth and coverage
Improved agriculture and livestock production
Veterinary training and services
Agricultural improvement
Reduced crime rate



Frances Klatzel

People of Thame

number of visitors increased to 25,000 in 1999. Thame valley itself, however, remains hidden from this phenomenal growth in international tourism, because it is located away from the main route to Everest. More importantly, much of the valley is restricted to international tourism due to its proximity to the international border.

The community, therefore, maintains much of its traditional culture, way of life, and conservation values. Potato cultivation, yak farming, and trans-Himalayan trade are the three main economic activities. The villagers have always been well positioned to participate in trans-Himalayan trade, because the 5,716m Nagpa Pass beyond Thame links Solukhumbu district with Dingri County, TAR. Commodities traditionally exchanged include salt, wool, meat, barley, blankets, and yaks from Tibet, and medicinal or aromatic plants, 'lokta' paper, iron ore, 'dzo' (male offspring of bull-female yak crosses), and grain from Nepal. Limited trading continues, and the potential exists to improve trade and transboundary tourism across this pass. Since this survey was made, development in the Thame valley has been supported by a four-year project (1999-2002) set up by the Austrian organisation Eco-Himal, and the infrastructure may have improved significantly (for details see EH 2003).



Lhakpa Norbu Sherpa

Ritual dancers at Thame monastery, cultural exchange is an important part of transboundary cooperation



The Four Main Transboundary Issues

The four most important transboundary issues currently affecting pastoralists and their environment in the Nepal-Tibet transboundary region are illegal poaching and trade in endangered species and wildlife products, cross-border spread of forest fire, cross-border spread of livestock diseases, and improvement of local livelihoods. These were the issues identified as most in need of cooperation during the official meeting of representatives of the protected areas concerned in 1995 and endorsed by the government representatives in 1996, and were also at the centre of the discussions in the joint participatory study carried out in the five border villages (see Chapter 1).

These issues are discussed in the following four sections of this paper. The information is based substantially on the results of the village survey. Some possible solutions are also presented.

Illegal Poaching and Trade in Endangered Species

The problem

Traditionally, local communities refrained from hunting and killing in Khumbu, Kyirong, and other valleys, because they were considered sacred. In fact, accounts of early explorers suggest that it was difficult to obtain wild meat in these areas, because the local people objected to hunting. These cultural norms, while still followed in areas such as Thame and Kyirong, have been eroded elsewhere by external cultural and economic influences.

Although local people do not hunt, they have never had the authority and means to prevent poaching by outsiders who invade their forests and pastures. Information collected from local villagers shows that musk is regularly traded between Nepal, Tibet, and India. Hence, it can be speculated that musk deer poaching was common in the past, because musk pods cannot be extracted without killing a mature male animal. The snares set by hunters also indiscriminately trap female and young animals (Mills 1999).

The primary function of a protected area is to conserve biodiversity and landscapes through local, national, and international laws. However, the protection of wildlife by enforcing national laws and regulations is relatively new; Nepal passed its first National Parks and



Nepali locals apprehend transboundary poachers

Brian Peniston

In late September 1998, at Yangle Kharka (3570 m elevation) on the way to Makalu Base Camp in Nepal, a team of project-based National Park staff (including myself), local people, cook and assistants, and porters discovered and captured four musk deer poachers from TAR. The team was at Yangle to build a series of porter shelters along a dangerous portion of the Makalu Base Camp trail, where several poorly equipped porters had lost their lives as a result of exposure.

Ms. Tsering Sherpa, a local woman from the nearby Navagaun village, was overseeing the construction of the porter shelters and trail improvements as Chairperson of the Upper Barun Integrated Conservation Committee. She saw fires burning on the hillsides in areas where local herders rarely went, and told us that she suspected poachers were in the area. After setting up camp in the pastures of Yangle Kharka, the scouts and porters noticed smoke rising from a distant point on the ridge opposite the campsite. After running up the steep cliff-side, they found a smouldering fire in an overhanging cave, with several animal skins drying over the coals. Searching the area, they quickly uncovered two unknown men hiding in the bushes nearby. The scouts caught them, tied their hands, and brought them and their gear to the Yangle campsite. After several hours of intensive questioning by candle-light, the men admitted that they were poachers and planned to collect musk deer and wild edible plants for the long Tibetan winter when there is food scarcity. They admitted that there were two other poachers in their gang and that they all came from Lhungdup village, immediately across the border in TAR. From the quantity of wild edible plants they had, it was clear that they intended to stay for several months in the Yangle Kharka area, poaching wildlife and living off the land before returning to TAR.

At sunrise, the team of scouts and the cook and assistants noticed another smouldering fire on the distant hillside. They decided to investigate, and as they walked up the hill, the other poachers noticed them and fled, leaving their belongings



Poachers tied en route to District HQ

in the cave in which they had been staying. Our park team watched the chase from below, with the cook, Lhungdup, and his team in hot pursuit of the poachers. The poachers were quickly overtaken, caught, and escorted down to the campsite for further interrogation. They too admitted to being poachers and asked for mercy and to return to TAR. Their request was denied, and they were tied together and escorted on the four-day hike to Khandabari, the district centre, for processing and trial. The men were found guilty of poaching musk deer and endangered birds and sentenced to jail, where they spent the next ten months.

The National Park team learned two simple but important lessons from this incident. First, local people, when given the authority and responsibility and a mechanism for dealing with offenders (provided in this case by the presence of National Park staff and the knowledge that the poachers could be taken to a police station), can effectively monitor and control people coming and going within their areas. Second, with minimum incentives (no per diem or other monetary reward), partnerships of local people are willing to capture and bring to justice outsiders and poachers abusing National Park and Buffer Zone resources.





Wildlife Conservation Act only in the early 1970s. TAR, China has national, regional, and local laws protecting forests and wildlife (Annex 1).

Nepal and China are parties to international agreements governing the protection of nature and natural resources, such as CITES, which mandates signatories to enforce regulations to reduce illegal trade in endangered and threatened species. Historically, such national and international initiatives were rare, so it is difficult to determine the past conservation status of flora and fauna.

The five communities visited in the joint study are all within the boundaries of protected areas. Protected area status has greatly reduced wildlife hunting and poaching activities in these villages. However, consultations with local people and field evidence suggest that the future of endangered wildlife – such as musk deer, snow leopard, and red panda – is not fully secure even within the protected areas.

Effective protection and management of species requires scientific information, more trained manpower, and stronger legislation outside of and within protected areas. A committed and empowered national authority is needed to curb wildlife trade in each country. Nepal is in the process of introducing legislation to create an authority empowered to combat illegal trade in endangered species. Cooperation and support from an aware public is also essential for the further control of poaching and hunting in transboundary areas. Examples of illegal activities abound. In 1999, for example, several people from Chhentang were arrested in Makalu-Barun National Park for attempting to poach musk deer. Similarly, the local people in Chang village claimed that people from the adjacent Dhading district in Nepal had been found hunting in the Kyirong forest.

Understanding and being responsive to local concerns and issues is a critical step towards public cooperation. Snow leopard, grey wolf, and black bear have been known to destroy livestock and crops. During the study visits, residents of the Timure area in Langtang National Park complained about crop damage from wild boar. Thame residents were concerned about the uncontrolled growth of the Himalayan tahr population. In Chang, villagers mentioned that monkey and langur damage crops in their area. There are many situations in which local people feel compelled to resort to retaliatory killing of wildlife.

Protected area regulations forbid retaliatory killings, but there are no damage-reduction mechanisms or compensation schemes. Attempts are being made both in QNP and Nepal's mountain parks to deliver protected area benefits to affected communities through community projects. However, these projects are not clearly linked with conservation efforts, and benefits go to the entire community, whereas losses incur to individual families. Hence, local people do not always understand the benefits of wildlife conservation. Adequate emphasis must be placed on linking wildlife conservation with the local economy (tourism,



Langtang woman in blue

Ang Rita Sherpa

"Government only loves wildlife and does not pay attention to the people. Boars are leaving people hungry." a villager from Timure in Nepal

"No animal is more destructive to crops and cultivated areas. It is impossible to make a plea for its protection."

Prater, 1977, on wild boar

"In the past, local people hunted boar. Locals knew all the habits of boar and limited its population by hunting. This skill has been lost due to the LNP regulations."

a local from the Timure area



non-timber forest products (NTFPs), livestock, and agriculture) and ecology (predator-prey balance).

Local people in some areas depend on wildlife products for religious and cultural uses. Plant and animal parts are also sought after for traditional healing and medicinal uses. Such traditional uses cause minimal damage because the amount used is small and dead animal parts can often be utilised. However, there are no provisions in protected area regulations to allow for such uses. Also, in some areas, such as Chhentang, local people are still dependent on wildlife for meat.

Information from the field suggests that the poaching of endangered wildlife continues in the protected areas of both countries, despite recent protective measures. The most destructive activity is poaching for profit, which is decimating species such as snow leopard,

musk deer, and black bear. Bear gallbladders and musk still fetch high prices in the international smuggling arena. Local hunters receive only a very small portion of the profits for risking imprisonment and destroying local heritage. Poaching generally happens in April, May, October, and November. Local people are convinced that protected area regulations have reduced poaching activities considerably but not totally. Arrests and punishment given to even a few poachers have had a significant impact by raising awareness and discouraging potential poachers.

Border areas are also areas of international smuggling. Nepal's remote and unmonitored borders are used as easy routes to smuggle illegal wildlife contraband between India and China. However, the potential does exist to reduce poaching and smuggling activities in transboundary-protected areas through regular checks, information sharing, and signposting.

Figure 1 shows a graphical approximation of the villagers' perceptions of the relative amounts of wildlife hunting and poaching over time, and an indication of how they expect it to develop. The people of Chang, Kimathanka, Thame, and Timure believed that wildlife poaching and hunting had decreased in their areas due to protected area status. These people would like to see hunting and poaching reduced further in the future, particularly those in Chang and Timure. However, those in Chhenthang thought that hunting and poaching of wildlife will continue and increase in their area unless alternatives are provided.

Stronger efforts are needed to educate and provide alternative income sources. Community mobilisation and management can be effective tools in increasing local participation in wildlife conservation in transboundary regions. If cross-border smuggling and hunting of

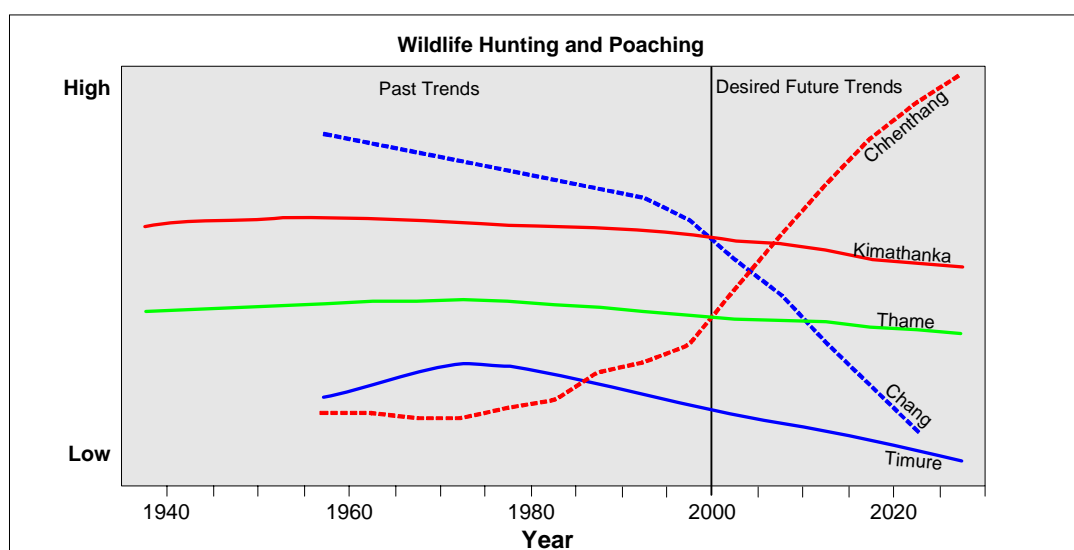


Figure 1: Villagers' perceptions of relative amounts of wildlife hunting and poaching over time



wildlife species is to be further reduced, there is a need for cross-border contact, agreements, and cooperation among local people; between local people and authorities and among authorities themselves.

Suggested activities to reduce transboundary wildlife poaching

Build institutional capacity

- Plan habitat management to conserve biodiversity
- Train protected area staff and customs agents at borders

Improve legislation

- Implement stronger legislation to empower QNP staff to control hunting and poaching

Improve cross-border communication and exchange

- Establish a transboundary committee and a buffer zone committee
- Initiate joint research and information sharing to control wildlife poaching

Increase local awareness and support to reduce poaching

- Conduct joint information campaigns by publishing posters and brochures and by holding meetings in local languages on transboundary conservation and development issues
- Erect warning signs regarding illegal trade at major border crossings such as in the Zhangmu – Kodari area
- Conduct regular public meetings to discuss trade and conservation issues
- Organise transboundary exchange tours, especially for Chhentang people.
- Reduce wildlife-people conflict by providing direct and indirect compensation
- Promote wildlife-related economic activities, such as wildlife tours

Cross-border Spread of Forest Fires

The problem

Managers of the forests and protected areas in the TAR are extremely concerned about forest fire damage. The moist valleys of Kyirong, Tinkey, Nyalam, and Dingri in QNP are the main forested areas of Shigatse Prefecture which is otherwise mostly treeless cold desert. The demand for timber, firewood, and medicinal plants means that the lower forested valleys are not only biological ‘hot spots’ but also places of immense economic value to western Tibet. These isolated areas are also home to some of the last remaining old growth forests and have scientific, recreational, and educational value.

Forest fires are also discouraged in Nepal’s mountain protected areas, where local people depend on forests for organic manure, livestock fodder, water, wildlife, energy, medicine, wild food, and fibre. The legal restriction against forest burning is strong in the mountains



Slash and burn – illegal burning for cultivation can get out of hand

of Nepal, but education and information campaigns about forest fires are less vigorous than in TAR, where anti-fire messages can be seen carved or painted on houses, rocks, and tree trunks.

Although lightning and rock falls can ignite fires naturally during dry periods, these events are probably rare in the study area, because lightning generally comes with monsoon rains and high humidity. Thus the main strategy is prevention of deliberate and accidental fires set by people. On both sides of the border, the fire suppression strategies depend on law enforcement and education, because the physical capacities of authorities and villagers to put out a raging forest fire is limited by the topographic difficulties of the mountains, as well as by a lack of fire-fighting tools, manpower, training, and funding.

There is a basic Buddhist belief that burning forests and grasslands is sinful, because it destroys countless life forms. Nevertheless, fires started by people have been a dominant influence in the forests of the Himalayas for centuries. Farmers, hunters, and herders have deliberately used fire to clear old grass and promote new growth for their cattle, clear sites for new fields and slash-and-burn agriculture, and hunt or drive away wildlife. Fires that accidentally spread from camps are also common.



Lhakpa Norbu Sherpa

Forest fire out of control

Oral history and landscape patterns suggest that large and small fires have shaped forests throughout the study area. Large fires are less frequent but far more destructive, because under dry weather conditions and a dense forest canopy, they can jump across rivers and ridge tops. Generally, the international boundary between Nepal and TAR follows ridgelines and river gorges that act as natural firebreaks and reduce the chances of fires spreading across the border. Regular small fires prevent the excessive accumulation of forest biomass and dry matter on the forest floor, reducing the chances of large, destructive fires.

In practice it seems that cross-border spread of fires in this area is relatively uncommon. A Timure resident recalled the story of a large fire that started in Langtang and spread across the river to Kyirong about 60 years ago. Kimathanka and Chhentang people were not aware of fires crossing the border, and Thame and Dingri are separated by treeless alpine landscapes and high mountain ranges that make the spread of fires impossible.

Figure 2 shows a graphical approximation of the villagers' perceptions of the relative frequency of forest fire over time, and an indication of how they expect it to develop. Local informants from both sides of the border thought that the frequency of forest fires had decreased in recent years through the anti-fire regulations and the information campaigns of the government forest departments, which came into effect in the protected areas

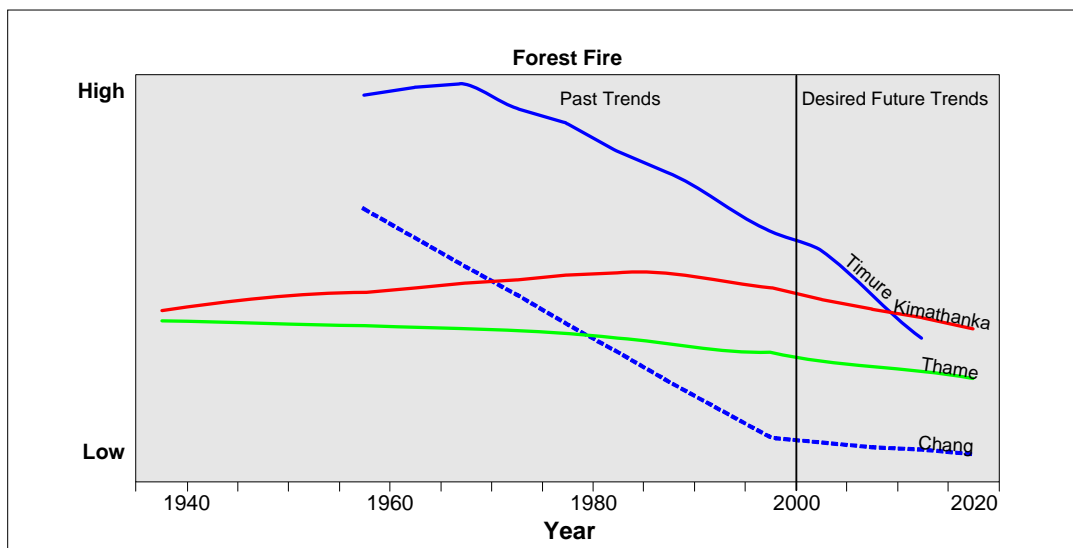


Figure 2: Villagers' perceptions of relative amounts of forest fire over time

between 1985 and 1995. All hope that there will be fewer fires in the future. Other factors cited as responsible for reducing accidental forest fires were wider availability of battery-operated flashlights instead of flammable organic material, availability of kerosene, less outdoor camping among travellers, and general awareness of forest rules among smokers.

As a result, the local people claim that many open meadows previously maintained through regular burning and grazing are reverting to forest cover. In some places, formerly cultivated areas are being taken over by forests, probably due to reduced dependency on local agriculture and livestock. Residents of Timure, Thame, and Kimathanka consistently stated that the forest cover has increased in these areas. Chhentang and Chang villagers expressed similar views. This contrasts with the popular belief that Nepal's forest cover has gone down slightly in recent years (9th Forest Sector Coordination Committee Meeting), and that there is a trend in the high hills of forest being converted to shrub. But the contrast may well reflect the difference between protected and unprotected areas. Local people would prefer to see the forest fires reduced further, because more forest means a greater availability of firewood, timber, and other benefits.

Despite these local opinions and the resource managers' desire to suppress fires, it is likely that fire will continue to be an agent of forest change in the study area. The most important factors determining the frequency, intensity, and spread of forest fires are weather and forest conditions. No amount of information and legislation can prevent forest fires in the study area under the present forest ownership, use, and management systems. Large and destructive fire events will also be unavoidable if small fires are suppressed for an extended period.

Fire ecologists and forest managers in western countries have developed a greater appreciation for the role of fires in ecosystems and now promote fire management and even prescribed burning instead of total exclusion. In some cases, such as protecting old growth forests and forest plantations, fire exclusion will remain an important management strategy requiring the creation of stand structures that are less susceptible to burning, and the construction of firebreaks and suppression facilities. However, when managing natural forests for a wide range of forest products and principles, it is necessary to recognise fire as an important ecological and cultural occurrence. It is important to realise that fire can be one tool to manage the mountain forests of the study area in order to conserve watersheds; provide habitat for biodiversity; produce timber, fodder, and non-timber products for local people; and protect recreational and cultural values.

Concerns about fires spreading across the border do not appear to be as serious as originally thought. Fire is indigenous to both sides of the border. The consultations with local people and the ecological understanding of forest fires support the view that the fire must be managed rather than suppressed. However, since transboundary grazers, collectors, and hunters may cause fires, there is still a need for cross-boundary cooperation to educate local users in order to minimise or manage cross-border fires.

Suggested activities to manage forest fires

Integrate fire management into protected area planning

- Integrate fire protection – as a tool for forest management - into planning
- Delineate economic forests (areas like orchards that provide cash income from trees other than from timber) and construct and maintain firebreaks
- Manage forest stands to make them less susceptible to fires and to create habitat
- Alter forest stand structure through silviculture management

Increase local awareness and support

- Provide more information and education about the role of fire in natural ecosystems and about fire prevention, especially in Nepal
- Conduct regular public meetings for information sharing, facilitation of communication, and creation of joint complimentary programmes

Cross-border Spread of Livestock Disease

The problem

The spread of livestock disease across the border is a concern for authorities and local residents of both TAR and Nepal, because livestock herding is an important economic activity in the communities near the border. However, no one is certain of the problem's actual seriousness, because little accurate historical information exists from which to assess the magnitude of cross-border disease transfer.

In Nepal, foot-and-mouth disease (FMD) is apparently a recurring problem, with as many as 400 cases reported in one year. It causes major losses in livestock productivity and local economies because affected livestock are no longer productive. This disease is common among hybrids and causes death in young animals. The open border and free livestock movement between Nepal, India, and Bangladesh are the cause of FMD prevalence. However, FMD is not a major issue in high-elevation areas because of the extensive livestock movement (low concentrations of animals) and the lack of exotic hybrids.

According to livestock officials in the Sankhuwasabha and Rasuwa Districts of Nepal, FMD has not been detected in the border regions. The major livestock diseases reported in these areas are haemorrhagic septicaemia, black quarter, and scabies. It is believed that some of these are also communicable to wildlife and can affect wildlife populations in parks and preserves. The occurrence of livestock disease along the border regions within TAR is less clear. There are no recent accounts of livestock losses due to the trans-border spread of diseases. However, officials in the TAR express concern about the possible spread of livestock disease from across the border because of the obvious lack of livestock health services in the border regions of Nepal. Livestock disease could spread along environmental corridors, such as river valleys, that support similar kinds of livestock. Hence, the fear of disease spreading into Chhentang, Kyirong, and Nyalam from Nepal is justified.



Dan Miller

Wild blue sheep in high altitude sheep pastures



Lhakpa Norbu Sherpa

Chauri herd in Kimathanka village in winter

"TAR authorities did not allow us to sell our dzo this year, claiming that our animals are diseased."

Kimathanka resident



The movement of livestock or people, the transportation of contaminated materials, and the consumption of meat could transfer disease across the border. A sign posted at the border at Zhangmu exhorts livestock owners to get their animals vaccinated by saying, "There is bubonic plague in Nepal." On the Nepal side of the border, no one is aware of any current epidemics or outbreaks. A Nepali informed us that livestock traders in Tibet sometimes claim that livestock from Nepal are diseased in order to increase the demand for their own livestock.

Nepal's 20-year Agriculture Perspective Plan (APP) gives emphasis to the livestock sector through strengthening veterinary services and controlling livestock disease. The European Union supports a Livestock Health Services Strengthening Project to control livestock disease in the middle hills. These services do not reach the northern border villages; however, programmes to control disease in the lowlands naturally reduce their spread higher up.

Most districts of Nepal have a veterinary hospital, usually located at the district centre. However, even at these hospitals, the capability of the workers to identify diseases is limited by lack of laboratory facilities and training. Veterinary extension centres serve the outlying areas, but remote border villages are out of reach of even these services. The situation in border villages of TAR is similar; most villages have positions for government and village veterinary workers, but they are often vacant, and the staff are not well trained.

Herders in remote areas of TAR and Nepal have their own traditional practices to manage livestock diseases. In the summer, they move their livestock to higher elevations where grazing is better and they can avoid warm-weather diseases. Traditional animal doctors and healers are usually still active in these villages. The treatment techniques used range from medicinal herbs to bleeding and exorcism. Different natural remedies are used for specific diseases. For example, the people of Kimathanka administer musk to livestock suffering from 'aulo', a sickness associated with summer heat in the lowlands. Catastrophic losses of livestock to epidemics are often regarded as an act of local deities, so mystical remedies – such as the use of spirit mediums and fumigation – are used.

Figure 3 shows a graphical approximation of the villagers' perceptions of the relative prevalence of livestock disease over time, and an indication of how they expect it to develop.

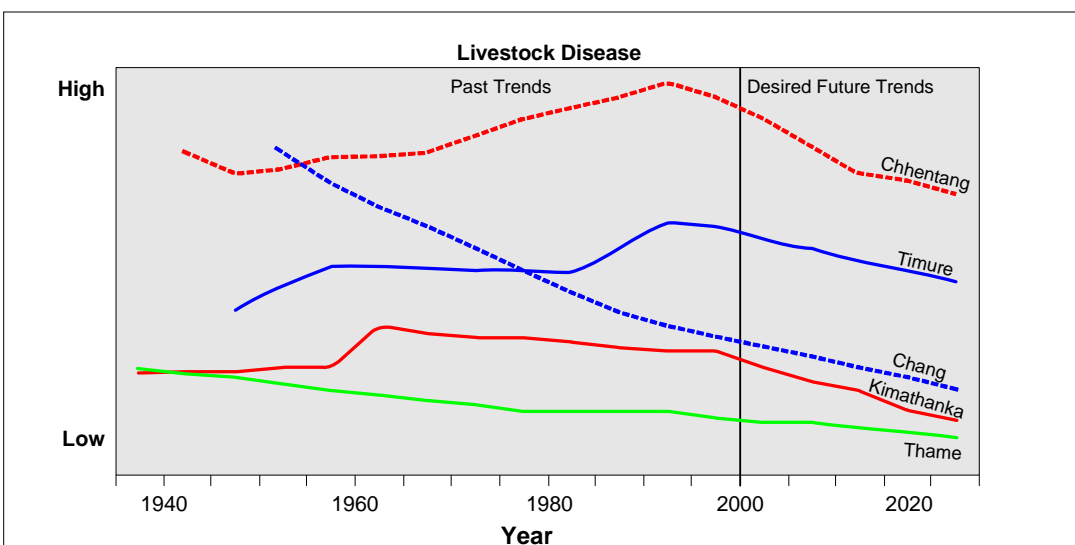


Figure 3: Trend line showing villagers' perceptions of relative amounts of livestock disease over time



There was no clear pattern among the different communities consulted. The people in Chang and Thame felt that livestock disease had declined over the last 50-60 years, those in Timure and Chhentang believed that it had increased. In Kimathanka people noted an increase some 40 years ago, followed by a steady drop. A veterinary officer from Sankhuwasabha district (where Kimathanka is situated) maintained that livestock disease along the northern border had not been a major problem in recent years. All of the villagers hope that disease prevalence will decrease.

In the past, there was far more movement of livestock across the border and no veterinary care, so cross-border spread of livestock diseases may have been higher. In recent years, the movement of livestock between Nepal and Tibet has declined significantly, due to the reduced demand for Tibetan salt in Nepalese markets and periodic closures of the border to transboundary grazing since 1960.

There may also have been a decrease in the livestock population in the high mountain region of Nepal. According to one estimate, there has been a 10% decline in yak farming in these high-elevation districts, most likely due to the shift towards tourism and other economic activities, out-migration, and the decrease in trans-border grazing. Sheep numbers have also declined significantly due to lack of labour, closure of forests to grazing, lack of breeding facilities, and introduction of chemical fertiliser to replace farm manure.

Despite this decline, keeping of large numbers of livestock is still central to the livelihoods of many farmers in the border regions of Nepal and Tibet and will continue to be so for quite some time. Livestock are the main sources of protein and cash income. Local people produce dairy products, such as butter and cheese, to sell for cash or trade for labour within their communities. People in the warmer valleys of Nepal and TAR still produce yak/cow crossbreeds for sale on the high plateau. The nomads from the high Tibetan plateau export thousands of sheep, goats, dri, and yaks to Nepal each year.

These exchanges are based on the climatic advantages of each locality. Cross-border livestock movement is essential for transboundary trade, transportation, and the genetic improvement of herds. For instance, Nepali yak farmers import new animals from TAR to replenish their herds, and yaks and crosses are the main form of transportation across Himalayan passes. The loss of valued animals to epidemics can deprive a farmer of his livelihood. Sickness or minor ailments can reduce livestock productivity and capacity to do work. Therefore, if livestock disease truly is a problem, the reduction of its spread across the border is a high priority. However, the economic loss from trans-border spread of disease is most likely insignificant compared to the even harder economic blows that local herders have already experienced due to the closure of the border and prevention of livestock exchange. Cross-border livestock movement is critical for the survival of border people and must be continued for viable livelihood security.

Improved veterinary services at border crossings will do much to facilitate more effective trans-border negotiations. Mechanisms to reduce the risk of disease transfer so that livestock exchange can continue freely include effective disease control programmes, quarantine check posts at key border crossings, livestock immunisation programmes, and regular training. Since diseases do not recognise international boundaries, cross-border cooperation is essential to control their spread. Local authorities and veterinary professionals from both sides must consult with each other.

There is a high level of support and enthusiasm for cross-border cooperation to control livestock disease. All villages would like to see a reduction in the spread of disease. The training of local herders in basic disease identification and sanitation can reduce the risk of rapid spread. Measures such as animal hygiene, isolation, and culling of affected animals should be practiced when necessary. However, it may be difficult to enforce the isolation of animals in unfenced communal pastures, and legal and cultural complications may prevent practising slaughter as a means of controlling the spread of disease. Traditional treatment methods have neither been studied nor documented, and the scientific value of these treatments is not well understood. Further research is recommended to determine the frequency and communicability of disease.

Prevention of livestock disease is better than a cure in the remote Nepal-TAR border region, and livestock health should be an important element of a comprehensive transboundary conservation programme.

Suggested activities to reduce livestock disease transfer

Improve livestock services

- Organise joint training and exchanges between veterinary workers
- Strengthen the livestock health care systems in the border region
- Provide veterinary technicians
- Train local herders and local people in veterinary care

Provide basic training for herders

- Conduct herder training about basic disease identification and treatment and how to obtain livestock services

Exchange research and information

- Investigate the types and extent of diseases that are a potential threat to cross-border movement
- Study traditional livestock treatment systems
- Cooperate across the boundary to control livestock diseases by organising meetings among veterinary workers

Improving Local Livelihoods

The problem

People residing in the mountain regions along the Nepal-TAR border are economically and politically disadvantaged because they live at the limits of the habitable, where the soil is infertile and the slopes are steep. In the past, they may have been attracted to these areas, especially the Thame valley of Khumbu, to take advantage of the relatively open borders to barter salt, wool, meat, yak, and dri from Tibet for iron ore, medicinal plants, papers, forest products, and crossbreeds from Nepal.

In the past, the population of these mountain regions may have been lower, and the resources per capita more plentiful. In recent years, the population has increased, but cross-border trading opportunities have diminished. As well, employment opportunities are rare in these remote regions. Although tourism has brought economic benefits to many mountain areas, tourist travel is restricted in Kimathanka, Chhentang, Chang, Timure, and some of the area around Thame.

These remote communities receive little support from development agencies and the government. Health and education facilities are meagre, and many young people move elsewhere in search of educational and employment opportunities.

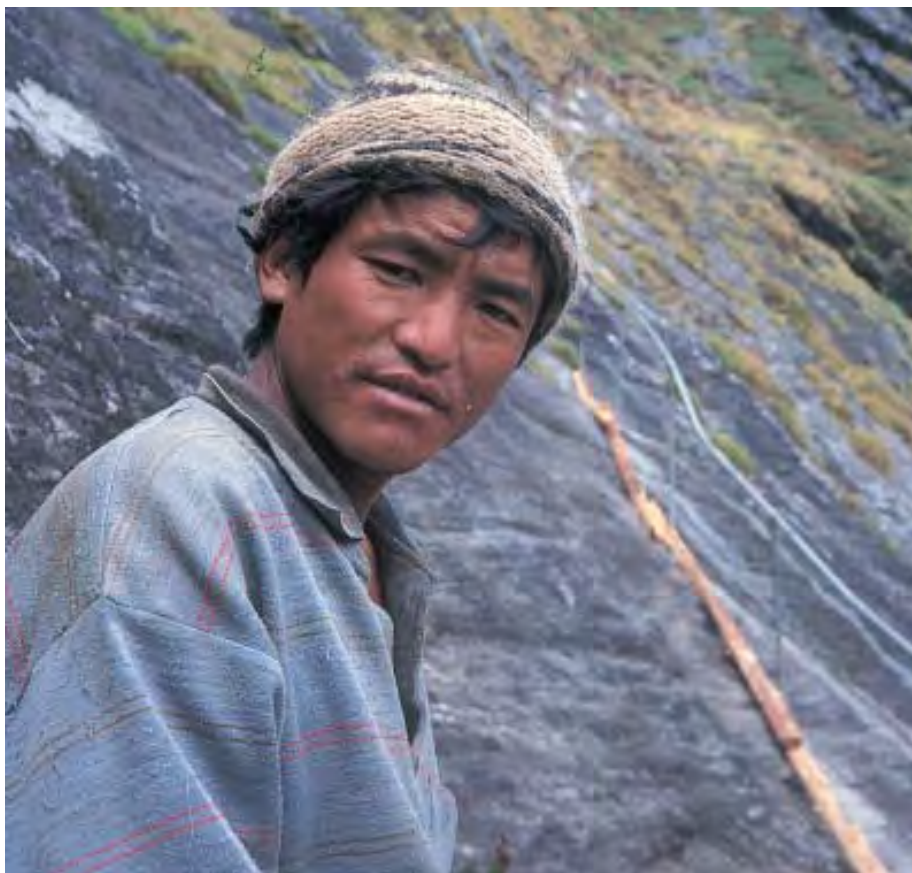
The study areas have been given protected area status in Nepal and TAR, which can generate long-term benefits for the local people by conserving forests, water, and biodiversity. Protected areas attract tourism and generate income through the sale of local products and services.

In the short term, however, protected area inhabitants are required to observe stringent conservation regulations, which may negatively affect their livelihoods. People who traditionally hunted wildlife may no longer be permitted to hunt. Increased populations of wildlife, such as Asiatic wild ass, langurs, Himalayan tahr, and wild boar, may destroy agricultural crops and deplete forage resources. Snow leopard, black bear, wolf, and other carnivores may predate on domestic cattle. Retaliatory killings were common in the past, but may no longer be permitted under protected area regulations, and protected area authorities have not yet devised equitable solutions to such losses.

Figure 4 shows a graphical approximation of the villagers' perceptions of the improvement in their economy and livelihood situation over time, and an indication of how they expect it to develop. In Chang, Timure and Thame, people had experienced a clear improvement and hoped that this would continue, in Kimathanka and Chhentang people perceived little change but hoped for a small improvement.



Lhakpa Norbu Sherpa



Brian Periston

"Shar Khumbu is the butter capital, but not a smear can be spared for father's funeral."
- Tibetan saying

"Kimathanka is a food deficit area. During a visit by His Majesty the King, a local leader asked for a 'bhandar' (a food depot). The attendant of the King overheard 'bhansar' (customs post). A customs post was established the next year in Kimathanka."
- Local informant

"Young people these days only talk about tourists. They do not pay any attention to old ways."
- Elderly resident from the Timure area



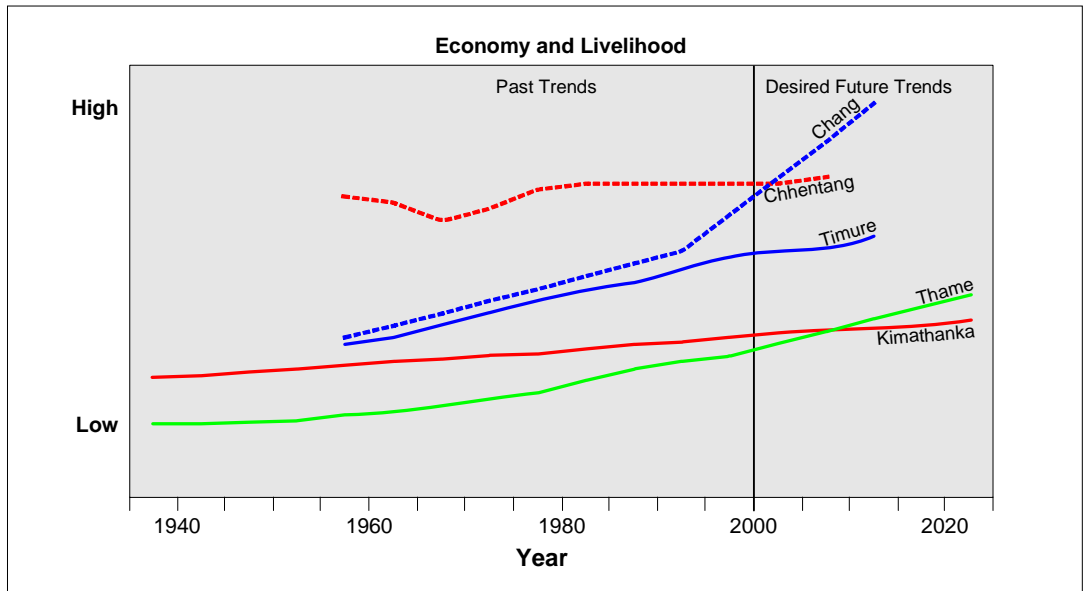


Figure 4: Villagers' perceptions of change in the relative quality of their economy and livelihoods over time

There is a growing realisation that conservation measures must include improvements to the livelihoods of the people living in and around protected areas. An integrated approach is expected to encourage people to manage resources in a manner that considers protected area ideals. Protected area authorities in Nepal and TAR are leading the way to integrating livelihood improvement into protected area management strategies. Nepal has introduced a protected area buffer zone concept, in which 30-50% of park revenue will be reinvested in the development of affected communities. The TAR government provides subsidies and village development programmes in QNP. Sustainable agro-pastoral development, research, and experimentation to reduce wildlife-people conflicts are essential to help improve local livelihoods.

Strengthening the local economic pillars - forestry, livestock, agriculture, and trade - will promote local self-sufficiency and sustainability, especially if the local people are asked what needs to be done. Furthermore, there exists tremendous untapped potential for skilled village people if parks can devise systems for controlled collection of raw materials (especially NTFPs) and sale of handicraft items. The dreams and priorities expressed by transboundary communities in the study are discussed in the village boxes in the previous chapter.

One of the unique features of highland livestock husbandry has been the tradition of migratory grazing, which is ecologically and economically sustainable, because it avoids overgrazing at any one place. Livestock are moved to the highlands to allow undisturbed crop growth in the lower valleys. The tightening of cross-border movements has affected



the pastoral economy by splitting traditional grazing grounds in many areas along the border. The two governments have periodically renewed agreements to allow cross-border grazing, but delays in the implementation of such agreements have been known to cause significant hardship. These difficulties are turning the younger generation away from taking up animal husbandry as an employment opportunity. Transboundary grazing agreements must be standardised and simplified to allow timely renewal.

Nepal and China recognise that traditional cross-border trade is a major economic activity for the border people and allow them free passage. However, trade across traditional passes and border crossings has declined in many areas, and there is a need to generate awareness among border authorities to recognise such trading as legitimate. Border areas offer both opportunities and challenges for trading. The flow of goods, materials, and information should be organised to maximise mutual benefits equitably and to take advantage of market access and the environment.

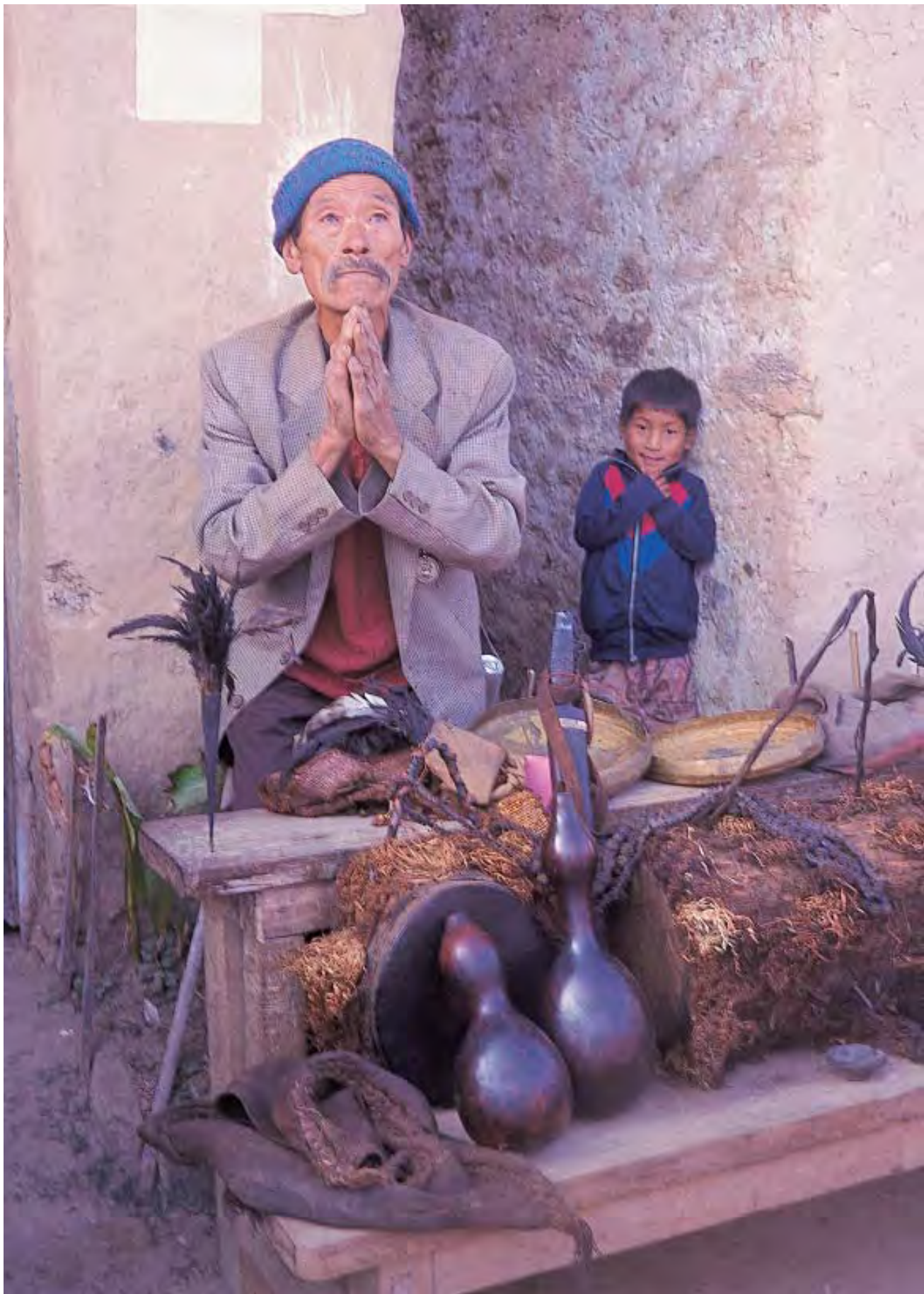
New opportunities are needed to sustain mountain economies, and cross-border ecotourism holds immense potential. The residents of Timure, Thame, and Kimathanka are aware of tourism's economic opportunities and demand that restricted area status be lifted from their areas. The people of Timure would prefer cross-border trekking tourism to road connections. Cross-border tourism across the Nagpa-la pass (north of the Tahmi valley and west of Namche Bazar on the Tibetan border) offers unparalleled opportunities to increase the attraction of the Everest area. The people of Chang and Chhentang, TAR appeared to be less familiar with the benefits of tourism and did not desire it to the same extent, but tourism still has the potential to economically benefit these communities. A UNDP-supported tourism development study for QNP strongly recommended the opening of the Kyirong-Rasuwa, Nagpa-Dingri, and Karta-Makalu border crossings to promote transboundary ecotourism.

Countries around the world are signing pacts to promote cross-border exchanges that stimulate the flow of products between countries in organised ways. This is an opportunity for Nepal and TAR to consider greater transboundary exchanges that improve the local and national economies and conserve biodiversity. Livelihood-improvement programmes in the border areas must be developed through sensitive analyses of socio-ecological potential and the expressed needs of the beneficiaries themselves.

Suggested activities to improve local livelihoods

- ❖ Develop tourism opportunities
 - Provide tourism service training for local residents in lodge management, tour guide and interpretation skills, basic spoken English, and cooking

- Provide special access to credit to enable local entrepreneurs to develop appropriate tourism facilities and services
 - Promote special activities and sites – such as the Chhentang hot springs; the Timure alpine lakes; the trekking peaks of the Thame Valley; the wildlife, flora, and culture of the upper Arun Valley; and the historic and religious sites of Kyirong Valley
 - Initiate programmes to raise awareness among local people of the importance of maintaining the village architecture, traditions, and way of life for long-term sustainable tourism
 - Generate wildlife-related economic activities, such as wildlife tours
 - Lift the restricted area status in villages near the border to allow tourism
 - Promote transboundary tourism across the Nagpa-la, Kyirong-Rasuwa, and Chhentang-Kimathanka crossings by establishing special permits and immigration posts
 - Support increased border-area interaction by increasing security
 - Coordinate visitor use, mountaineering, search and rescue, and transboundary trekking
- ❖ Stimulate cross-border trade
- Sensitise border police, customs, and local authorities about the legitimacy and the right of local border people to trade freely with each other
 - Promote balanced cross-border trade for mutual benefits
 - Define who has the right to trade, where they are allowed to trade, and items they are allowed to trade without taxation under traditional trading arrangements
- ❖ Encourage resource-based livelihoods for local people
- Develop potential forest-based products – such as bamboo products, medicinal plants, timber, herbs, and traditional paper – in Rasuwa-Kyirong (Timure-Chang) and Chhentang-Kimathanka to improve local livelihoods
 - Maintain strong local control over the resource base to benefit locals and to exclude exploitation by outsiders
 - Provide a legal framework and guidance from protected area authorities to ensure sustainable use and management of the resources
 - Formulate a comprehensive plan with a resource assessment, a feasibility study, a marketing plan, and provisions for technical support
 - Develop the capacity for local processing of quality products and improved marketing skills to ensure maximum benefit
- ❖ Support sustainable agro-pastoral livelihoods
- Implement long-term reciprocal grazing agreements for livestock
 - Research ways to improve livestock and control disease
 - Find ways of reducing wildlife-people conflicts, including direct and indirect compensation for livestock and crop losses



- Promote exchanges of information and techniques related to agriculture, animal husbandry, and resource management across the border
 - Explore and conduct a feasibility study for diversifying agriculture to include growing horticultural cash crops, such as vegetables and medicinal plants
- ❖ Develop village infrastructure
- Improve transportation by constructing roads and trails
 - Extend the road from Riwu to Chhentang
 - Promote the planned transboundary road link between Kyirong and Rasuwa (Chang-Timure) (LNP)
 - Upgrade Khandabari-Kimathanka horse trail
 - Improve trail over Nagpa-la
 - Develop communications
 - Establish telephone or radio communications for Timure, Kyirong (Chang), Kimathanka, and Chhentang
 - Provide educational opportunities for vocational studies and scholarships for local students, and encourage retention and use of local languages
 - Strengthen health care services, and train local workers



Frances Klatzel

East meets West: two different ways of seeing the world



The Path Forward – Progress, Challenges, and Immediate Actions for Conservation

Achievements and Cooperation Across the Himalayas

The transboundary activities since 1995 have started to address several objectives identified by the Transboundary Biodiversity Conservation in the Eastern Himalayas Programme. These objectives are

- strengthening transboundary cooperation by establishing professional links
- building and exchanging participatory management methods
- establishing local-level committees
- planning cross-border ecotourism
- continuing support for transboundary exchange



Rai cultural dance

Brian Peniston

Promoting transboundary eco-tourism opportunities

With experienced protected area management systems operating on both sides of the border, and an already cooperative Tibet-Nepal private tourism industry in place, trekking between QNP and Langtang National Park (LNP) has the potential to be a model for international collaboration in community-based and conservation-linked ecotourism.

On the Nepal side, TMI's Langtang Ecotourism Project and LNP collaborated for three years to plan and promote community-based ecotourism in the Langtang area. Communities learned participatory planning skills and formed local committees to manage the impact of tourism, increase local benefits, and promote conservation. In a participatory workshop on planning ecotourism and related micro-enterprises, officials and community members from Langtang, and from Kyirong on the Tibet side of the border, began collecting information and planning to manage cross-border ecotourism in the area, if and when the border opens.

The opening of cross-border trekking routes is supported by the QNP Tourism Master Plan Study, in which TMI participated. The Qomolangma Nature Preserve Ecotourism Master Plan Summary suggests four sites for cross-border trekking with Nepal, including the Kyirong-Langtang area.

Coordination between TMI's Qomolangma Conservation Programme and Peak Enterprise Programme, and ICIMOD's Natural Resource Management Programme

TMI's Qomolangma Conservation Programme (QCP) is designed to build local capacity to conserve the unique natural and cultural heritage of the Mount Everest ecosystem while improving local livelihoods. Transboundary issues and strategies have been a major consideration in the design of the programme.

The Peak Enterprise Programme is a unique partnership of organisations and individuals, who came together to enhance private enterprise opportunities for Tibetans in rural communities and towns, including the border region. Peak Enterprise identifies possible enterprises for development in remote areas and assists businesses in developing positive environmental strategies and complementary conservation programmes.

ICIMOD will be implementing its new five-year plan (2003-2007), which will focus on knowledge management, capacity building, networking, and policy advocacy. Transboundary conservation will fit prominently in its integrated natural resource management programme, with conservation education as a special focus. ICIMOD is currently working in protected areas of TAR as part of its rangeland programme and wishes to extend the transboundary focus to the Changtang and south-eastern TAR. ICIMOD is uniquely positioned as a regional member country institution with a focus on trans-national policies and instruments for collaborative exchanges and activities.



Challenges Hindering Transboundary Cooperation

The following challenges, both recurring and new, at present hinder transboundary collaboration.

Travel across the border

Exchanges have been postponed at times due to delays in obtaining travel documents for the QNP participants. Furthermore, exchanges can only be conducted when the roads crossing Tibet's high passes are open (April to October) and when the roads into Nepal are not closed during the June to September rainy season. This leaves a very short time frame for activities. Travel in the region usually requires several days; for instance, travel to LNP from Kathmandu requires two days, participants from Kyirong had to drive for five days to reach Langtang, which lies only 20-25 km downstream. It would take two days to walk across the border.

Communication

The success of the exchange visits requires careful planning and follow-up by both the visiting and host participants. The lack of good communication infrastructure in QNP's remote areas is a constraint, both to pre-trip planning and to post-trip follow-up. Also, language barriers make discussions slow. Furthermore, all discourse materials must be translated into three or four languages (Chinese, Tibetan, Nepali, and English) to accommodate all the participants and facilitators. At the village level, Tibetan and Nepali participants all speak a similar Tibetan-based dialect and can communicate with each other directly.

Follow-through

Commitments to follow-up action are made in earnest; however, follow-up is often hampered by frequent changes of government or park staff and by the participation of different individuals in each exchange. Including new participants in each exchange provides learning opportunities to more people, but there is little continuity in understanding of the issues or in follow-through on the commitments and conclusions of prior exchanges.

Broad-level participation in exchanges

The involvement of local-level participants in the ecotourism workshop increased their awareness and practical skills in ecotourism planning and management and in biodiversity conservation, strengthened cross-border bonds, and promoted local committees. These participants enhanced the exchanges with their experience and knowledge of transboundary issues such as wildfires, wildlife management, and illegal trade.

However, without a representative of QNP among the participants, conclusions could not be endorsed as official recommendations until QNP management had reviewed and approved them. Hence, the suggested actions remained inconclusive. In exchanges where government officials participated, recommendations could be adopted immediately.



Brian Peniston

Ready for dialogue – shepherds of the high pastures

The participants in the ecotourism workshop ranged from villagers to Lhasa-based forestry officials; it was difficult to design activities for such a diverse range of participants.

Recommendations

Consolidate and expand transboundary activities

The activities of the last five years for trans-boundary conservation of the shared Mt. Everest landscape have successfully established better communication and information sharing between the governments of Nepal and TAR, China. Progress is slow and incremental, but improvements are being seen in the field programmes, and goodwill and trust is developing.

The programme should evolve into a lasting commitment by both governments. Activities should include local-level exchanges and should formalise the exchange mechanisms at a higher level. Future programmes should concentrate on developing specific field skills and practical training.

An additional high-level transboundary exchange is necessary to formalise the existing programme in both countries. This exchange should also work to upgrade QNP into a World Heritage site. With Sagarmatha National Park in Nepal, it would be one of the few



People of Tingri, TAR, cross-border traders

transboundary World Heritage sites and would provide unique opportunities to conserve both natural and cultural heritages across an international boundary. World Heritage designation is also an important tool for increasing awareness and raising funds.

Future transboundary programmes should include participants from other agencies with shared responsibilities such as customs officials, border patrol personnel, and staff from other protected areas in TAR.

Finally, efforts need to be made to develop a sustainable funding mechanism to ensure transboundary cooperation between HMG Nepal and the TAR government, such as a regional trust fund for conservation of the Mt. Everest landscape. This would change the perception of Mt. Everest from a mountain to conquer into a landscape to conserve.

In general terms, a strategy that consolidates and then expands the present achievements can be followed to strengthen the Transboundary Programme. This includes the following.

Consolidate and regularise the interaction and communication of protected area professionals and managers. Promote annual or semi-annual meetings for the regular sharing of information, especially on technical issues.

Follow up on the recommendations for activities at the community level, especially by using existing forums, such as annual herders' meetings.

Promote joint World Heritage site designation for QNP.

Expand the transboundary activities to contiguous valleys that are not included in a protected area by inviting professionals of the agencies managing these areas to workshops and meetings in Nyalam and Sindhupalchowk (the district in Nepal between the Langtang and Sagarmatha National Parks). Gradually expand activities in non-protected areas to the community level by utilising existing forums, such as community forest user groups.

Expand transboundary cooperation beyond QNP to include other protected areas of TAR, such as the Great Bend area and Changtang, and develop a programme for long-term transboundary conservation and exchange beyond QCP project funding.

The **lessons learned** during the past six years of Mount Everest transboundary exchanges include the following.

- Exchanges work best when the logistics are simple and the costs are minimal.
- Exchanges work best with the involvement of committed local staff.
- Meetings of high-level officials can provide a foundation for future activities, but they must set priorities and schedules for specific follow-up activities.

Take the first step

Managers and participants in the meetings face a challenge in finding ways to start implementing the recommendations, especially given the logistical challenges and constraints presented by the landscape of the region. Some actions will require the signing of bilateral treaties, which could take several years. Other activities can be carried out through the initiative of project teams and protected area managers.

Immediate activities that can be undertaken to follow up on the recommendations of the transboundary meetings include the following:

- offering incentives for information on poaching activities,
- training in the identification of species that are traded illegally,
- providing veterinary services for livestock in Karta and Kimathanka,
- conducting a workshop on forest fire management,
- preparing a proposal for World Heritage Status.

These initial steps will inspire confidence and will start to build partnerships and commitment to a longer-term process of collaboration.



Ang Rita Sherpa



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༄༅། རྩོམ་ལ་རས་པའི་རེ་འབོད།

Milarepa's Plea

གཡའ་རི་དང་གངས་རི་རྩ་རི་གསུམ།
འདི་གསུམ་མི་ལའི་སྐྱབ་གནས་ཡིན།
གཡའ་རྩ་གངས་རྩ་རྩ་གསུམ།
འདི་གསུམ་མི་ལའི་བདུང་རྩ་ཡིན།
ཤ་བ་གོ་བ་གནའ་བ་གསུམ།
འདི་གསུམ་མི་ལའི་སྐྱོ་སྐྱགས་ཡིན།
གཡི་དང་འཕར་བ་སྐྱང་གི་གསུམ།
འདི་གསུམ་མི་ལའི་སྐྱོ་བྱི་ཡིན།
སྐྱ་དང་སྐྱུ་ཕུ་མི་བྱེད་གསུམ།
འདི་གསུམ་མི་ལའི་ཅེ་ཕྱོགས་ཡིན།
བྱ་འཛོལ་མོ་གོང་མོ་མོད་པོ་གསུམ།
དེ་གསུམ་མི་ལའི་བྱིས་བྱ་ཡིན།

Snow, rock, and clay mountains
are my hermitages.

Snow and glacial rivers are my
drinking water.

Deer, gazelle and blue sheep
are my livestock.

Lynx, wild dog and wolf are
my guards.

Langur, monkey and brown bear
are my playmates.

Thrush, snow cock and griffon
are my garden birds.

If this appeals to you, please
join me.

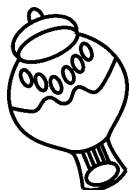
Milarepa was an 11th century Buddhist
hermit who lived in the Himalayan valleys
along the Nepal and Tibet border. Mila's
deep compassion for wildlife and love for
wilderness fostered a spirit of harmony
between man and nature in the Himalayas.

Taken from a poster published by TMI and ICIMOD
designed by Lhakpa Norbu Sherpa, painting by Karma Lama



Note

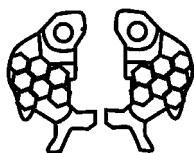
The symbols used in this book are from the eight auspicious symbols of Buddhism, which is common to the peoples of the transboundary region and forms an integral part of their culture. The details and names of the symbols differ a little in different traditions.



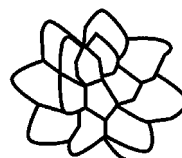
The Great Treasure Vase or Precious Vase symbolises long life, wealth, and prosperity.



The Precious Parasol, Protection Parasol, or Precious Umbrella symbolises protection from all evils.



The Golden Fish symbolise happiness, abundance and fertility, and/or wisdom or being in a state of fearlessness.



The White Lotus or Lotus Flower symbolises purity.



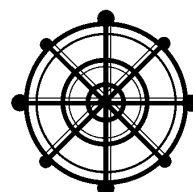
The Right-Turning Conch, Right-coiled White Conch, or White Conch Shell symbolises the awakening from ignorance, the sound of victory, power and (religious) sovereignty, and/or universality and strength of the law.



The Endless, Infinite or Eternal Knot or Auspicious Drawing, symbolises long life, the unity of wisdom and endless compassion, the interdependence of all things and/or continuity.



The Victory Banner or Canopy symbolises the ultimate victory of Buddhism over all things negative and/or the methods for overcoming defilements.



The Dharma Wheel or Wheel of Law symbolises the wheel of teaching that the Buddha turned.

Acts of the People's Republic of China relating to biodiversity conservation

The Constitution of the People's Republic of China (PRC), Article 9, states that the State shall ensure the rational use of natural resources and protect rare animals and plants; it prohibits any occupation, by organisations or individuals, that damages natural resources. Article 26 states that the State shall protect and improve the environment, as well as encourage and organise afforestation and forest protection; it also prevents and controls pollution and other public hazards. Article 17 states that the people's governments at various levels shall take measures to protect regions representing various types of natural ecological systems; regions with natural distributions of rare and endangered wild animals and plants; regions where major sources of water are conserved; geological structures of major scientific and cultural value; famous regions where karst caves or fossil deposits are distributed; traces of glaciers, volcanoes, hot springs, or human history; and ancient and precious trees; it strictly forbids damage to the above. Article 19 states that measures shall be taken to protect the environment in cases where natural resources are being developed or utilised. Article 23 states that during urban and rural construction, vegetation, bodies of water, and the natural landscape shall be protected; it also states that gardens and other scenic places shall be constructed in cities, displaying the special features of the local environment.

The Law of the PRC on the Protection of Wildlife, Article 6 states that the governments at various levels shall strengthen the administration of wildlife resources, as well as formulate plans and take measures for the protection, development, and rational utilisation of wildlife resources.

The Water Law of the PRC, Article 5, states that the State shall protect and conserve water resources, adopt effective measures to preserve natural flora by planting trees and grass, prevent and control soil erosion, and otherwise improve the environment. Article 20 states that the forestry departments; under the State Council and the people's governments at the province, municipality, and autonomous region levels; shall designate and manage

nature reserves in forest areas of special value. These include forests typical of the specific region, forests containing rare animals or plants, or tropical rainforests (World Heritage Convention).

Acts of His Majesty's Government of Nepal relating to biodiversity conservation

The Constitution of the Kingdom of Nepal, 1990, obligates the State to give due priority to environmental conservation. Article 26 states that the state shall give priority both to preventing adverse effects on the environment caused by physical development activities, and also to protecting the environment through increased public awareness on environmental cleanliness. It states that the State shall also make arrangements for special protection of rare and endangered wildlife, forests, and vegetation.

The National Parks and Wildlife Conservation Act, 1973, empowers His Majesty's Government (HMG) of Nepal to establish various types of protected areas in Nepal; such as national parks, strict nature reserves, wildlife reserves, hunting reserves, conservation areas, and buffer zones. It then defines each of these protected areas as follows.

- National Park: an area for landscape conservation and management
- Strict Nature Reserve: an area of ecological importance set aside for scientific research and study
- Wildlife Reserve: an area for conservation and management of wildlife and their habitat
- Hunting Reserve: an area for management of game animals
- Conservation Area: an area managed by communities for their livelihood by maintaining and conserving the environment through local effort
- Buffer Zone: an area peripheral to national parks or reserves; provisions for buffer zones call for wise and sustainable use and conservation of forest and wildlife resources by the community

Under Schedule 1 of this Act, 27 species of mammals, 9 species of birds, and 3 species of reptiles are protected, and killing or maiming of these species is punishable by law. Other wildlife species are only to be hunted with a permit. Also, to provide effective protection of the flora and fauna in protected areas, several actions are prohibited; such as entering without a permit, hunting wildlife, constructing, cultivating, grazing livestock, and damaging or removing forest products. Section 19 of the Act prohibits sale, barter, or transfer of any trophy without a license from a prescribed officer. A legal possessor of such a trophy must obtain permission from the Ministry of Forest and Soil Conservation to import or export the trophy. Transboundary conservation, however, is not mentioned in this Act (Chapagain 2001).

The **Forest Act**, 1993, incorporates several provisions for the conservation, development, utilisation, and management of forests. The Act empowers HMG of Nepal to delineate any

part of a national forest with environmental, scientific, or cultural significance a protected forest. Under the legal framework of this Act are various forest-management systems; these include government-managed forest, protected forest, community forest, leasehold forest, and religious forest. Community and leasehold forests are especially important, as they provide minor forest products and stable incomes to their guardian communities. After two decades of the community forestry programme, degraded forests, brush lands, and barren lands have been converted to mature secondary forests, providing habitat for wildlife. This Act also authorises a ban on collection, utilisation, sale, transport, or export of certain plant species and disseminates relevant information in the Nepal Gazette.

The **Environment Protection Act**, 1997, includes a provision for Environment Conservation Areas (ECA). It empowers HMG, Nepal to designate any place (including border regions) an ECA if such an area is considered important from an environmental aspect – this importance can be due to natural heritage, endangered or rare wildlife species habitat, or historical or cultural background. Activities harmful to the scenic beauty of these areas are strictly prohibited.

Several Acts control the import and export of plant and animal life. The **Plant Protection Act**, 1973, authorises HMG Nepal to control export and import of plant products and prevent infectious bacteria and viruses from entering the country through quarantine stations and laboratories at major customs points. **The Import Export Act**, 1957, authorises HMG Nepal to control export and import of wildlife products. Section 3 of this Act states that wildlife; bear gallbladder; musk and musk pods; and skins of snake, lizard, and other wildlife are not to be imported or exported. However, this Act does not currently ban transport of all protected species of flora and fauna. Similarly, the **Animal Health and Animal Service Act**, 1999, states that livestock products can be imported or exported but empowers HMG Nepal to prohibit the importing of livestock or livestock products that may carry infectious disease. This Act has yet to be implemented in transboundary areas.

Finally, the **Aquatic Animals Protection Act**, 1961, requires the construction of fish ladders on dams or other features that obstruct aquatic life; it also prohibits discharging electricity, using explosives, or dispersing poison in water (Chapagain 2001).

Agreements between the Tibet Autonomous Region, China, and Nepal

The first **Trade and Payment Agreement**, 1974, enhanced the developing economic relationship and strengthened trade between Nepal and the Tibet Autonomous Region (TAR). Both countries agreed to use certain trade routes (Kodari/Nyalam, Rasuwa/Kyerong, and Yari Humla/Purang) and to improve the quality of life of the border inhabitants by permitting traditional trade, barter, and grazing within a 30 km radius of the border.

Another agreement of the same name was passed in 1981 and endorsed three more trade routes. It also included provisions on the export of live sheep, yak, and yak tails from TAR, and timber and medicinal herbs from Nepal.

The **joint meeting on trans-frontier pasturing** by border inhabitants was organised in 1983 to end conflicts related to pasturing. Some of its provisions included reduction of livestock, a time frame to end grazing practices, and immunisation of livestock that pasture across the border. Another provision instructed local authorities to disseminate information about infectious livestock diseases and take necessary measures to prevent the spread of such diseases.

The **agreement between the Governments of Nepal and China on trade, intercourse, and related questions between Nepal and the Tibetan Autonomous Region of China**, 1986, forbids nationals of either country to engage in activities such as herding, grazing, farming, hunting, felling trees, or picking medicinal herbs across the border. It states that livestock, plants, and products thereof originating in either country shall be quarantined prior to export or import, and that quarantine regulations of the importing country shall be conscientiously observed. It further states that the two governments shall cooperate in the development of tourism, economy, and technology, and shall expand links in trade and civil aviation (Chapagain 2001).

International Conventions relating to transboundary issues between TAR and Nepal

The **Convention on Wetlands of International Importance**, 1971, of which Nepal and China are parties, states in Article 5 that contracting states must consult other contracting parties about obligations discussed at the convention regarding wetlands which fall beyond one country's territory into the territories of one or more other countries. This indicates that both Nepal and China have taken full responsibility for conservation of wetland flora and fauna beyond their borders.

The intergovernmental, **Convention on International Trade in Endangered Species of Wild Fauna and Flora**, 1973, (which came into force in 1975) came about due to the enormous volume of illegal trafficking of wild fauna and flora, and the resulting near extinction of some species. Parties to this convention have initiated necessary measures to control international trade in the wild fauna and flora listed in the appendices created by the convention. Over 158 countries are currently parties to this outstanding wildlife convention.

The **Convention on Migratory Species**, 1979, (also known as the Bonn Convention) was brought about by the Stockholm Conference, 1972, which urged governments to consider enacting international conventions and treaties for the protection of species that inhabit

international waters or migrate from one territory to another. This convention requires the review and assessment of the conservation status of migratory species. As the boundary between Nepal and TAR stretches over 885 km, this convention is especially important for these two countries.

The **Convention on Biological Diversity**, 1992, provides for notification, exchange of information, and consultation on activities that may have significant adverse effects on biological diversity, if the effects of these activities spread beyond national jurisdiction into other states or areas. Article 5 requires parties to cooperate directly or through appropriate international organisations in matters of mutual interest for the conservation and sustainable use of biological resources in their regions. This convention is potentially an important tool for strengthening transboundary conservation between TAR and Nepal (Chapagain 2001).

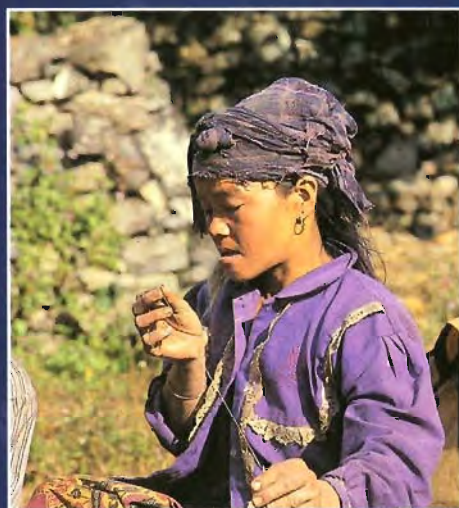
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Lhakpa Norbu Sherpa was born and grew up in a remote Himalayan village in Solukhumbu, Nepal. He is an environmentalist with special interests in protecting mountain environments and cultures and promoting mountain livelihoods. He obtained a PhD in Forest Resources from the University of Washington, USA, and served as a Senior Manager of Nepal's National Parks for nearly 15 years. He has spent much of his career protecting the Mount Everest ecosystem. He has been involved in establishing and managing each of the three protected areas surrounding Mt. Everest (Sagarmatha and Makalu-Barun National Parks in Nepal and Qomolangma Nature Preserve in Tibet Autonomous Region). He also played a key role in promoting cross-border exchange between Nepalese and Tibetan conservationists and led a joint transboundary study to strengthen cooperation in transboundary conservation. Presently, he works as Manager of The Mountain Institute's (TMI) Qomolangma Conservation Programme in TAR.

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