

The Landscape Approach in Biodiversity Conservation

**A Regional Cooperation Framework for Implementation
of the Convention on Biological Diversity
in the Kangchenjunga Landscape**

**Eklabya Sharma
Nakul Chettri
Janita Gurung
Bandana Shakya**

About ICIMOD

International Centre for Integrated Mountain Development

The International Centre for Integrated Mountain Development (ICIMOD) is an independent 'Mountain Learning and Knowledge Centre' serving the eight countries of the Hindu Kush-Himalayas – Afghanistan , Bangladesh , Bhutan , China , India , Myanmar , Nepal , and Pakistan  – and the global mountain community. Founded in 1983, ICIMOD is based in Kathmandu, Nepal, and brings together a partnership of regional member countries, partner institutions, and donors with a commitment for development action to secure a better future for the people and environment of the extended Himalayan region. ICIMOD's activities are supported by its core programme donors: the governments of Austria, Denmark, Germany, Netherlands, Norway, Switzerland, and its regional member countries, along with over thirty project co-financing donors. The primary objective of the Centre is to promote the development of an economically and environmentally sound mountain ecosystem and to improve the living standards of mountain populations.

The Landscape Approach in Biodiversity Conservation

A Regional Cooperation Framework for Implementation of the Convention on Biological Diversity in the Kangchenjunga Landscape

Compiled by

Eklabya Sharma, Nakul Chettri, Janita Gurung and Bandana Shakya

ICIMOD Framework Paper

International Centre for Integrated Mountain Development (ICIMOD)
Kathmandu, Nepal
October 2007

Copyright © 2007

International Centre for Integrated Mountain Development (ICIMOD)
All rights reserved

Published by

International Centre for Integrated Mountain Development
G.P.O. Box 3226
Kathmandu, Nepal

ISBN 978 92 9115 060 1 (printed)
978 92 9115 061 8 (electronic)

Photos: All photos by Nakul Chettri unless stated otherwise

Front cover: Glacial lake in Jangthang, Jigme Dorji National Park, Bhutan, with a tent made of yak hair used by herders as shelter

Editorial team

A. Beatrice Murray (Senior Editor)
Dharma R. Maharjan (Layout Design)

Printed and bound in Nepal by

Quality Printers Pvt. Ltd.
Kathmandu

Reproduction

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. ICIMOD would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from ICIMOD.

Note

The views and interpretations in this publication are those of the authors. They are not attributable to ICIMOD and do not imply the expression of any opinion concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries, or the endorsement of any product.

This publication is available in electronic form at <http://books.icimod.org>

Contents

Contributors	iv
Acronyms and Abbreviations	vi
Summary	vii

Section 1 – Transboundary Biodiversity Conservation in the Eastern Himalayas 1

Introduction	3
Transboundary Landscape Management	4
Transboundary Cooperation and the Landscape Approach in the Kangchenjunga Area	6
References	13

Section 2 – Regional Cooperation Framework 15

Introduction	17
Constitutive Elements of the Regional Cooperation Framework	18
Implementation and Governance Mechanisms and Processes	21

Section 3 – Further Information 23

The Convention on Biological Diversity	25
Initiatives Supporting Transboundary Biodiversity Cooperation	28
References	29

Contributors

A. Partner Institutions in the Kangchenjunga Initiative

Bhutan

Nature Conservation Division, Ministry of Agriculture, Royal Government of Bhutan
WWF-Bhutan

India

Ministry of Environment and Forests, Government of India
G B Pant Institute of Himalayan Environment and Development
Department of Forest, Government of West Bengal
Darjeeling Gorkha Hill Council
North Bengal University
Ashoka Trust for Research in Ecology and the Environment
Darjeeling Earth Group
Darjeeling Ladenla Road Prerna
Ecotourism and Conservation Society of Sikkim
Centre for Studies in Rural Economy Appropriate Technology and Environment
Federation of Societies for Environment Protection
North East Society for Protection of Nature
Wildlife Institute of India
WWF-India (Darjeeling Project SERVE)

Nepal

Ministry of Forests and Soil Conservation, Government of Nepal
WWF-Nepal
The Mountain Institute
Namshaling Conservation and Development Committee, Ilam
Ilam Sahayog Parisad, Ilam
Non-Government Organisation Federation of Nepal, Panchthar
Environmental Conservation & Development Forum, Taplejung.

B. Participants in the Framework Development Workshop*

Bhutan

Sangay Wangchuk, Director, Nature Conservation Division, Ministry of Agriculture
Vijay Muktan, Senior Programme Officer, WWF Bhutan Programme

India

Bishwanath Chakraborty, Dean, Faculty of Science, North Bengal University
Chinmoy Chakrabarti, Senior Environment Officer, Department of Environment, Government of West Bengal
Dipankar Ghose, Programme Coordinator, WWF-India, Sikkim programme
Hement K. Badola, Scientist in-charge, G B Pant Institute of Himalayan Environment and Development, Sikkim
Jeta Sanskrityayana, Professor, Department of Economics, North Bengal University
Kinzang S. Bhutia, Member, Khangchendzonga Conservation Committee, Sikkim
Murari Lal Arrawatia, Additional PCCF- Landuse and Environment, Forest, Environment and Wildlife Department, Government of Sikkim
P. Senthil Kumar, Divisional Forest Officer - Environment, Government of Sikkim
Pop T. Bhutia IFS, Conservator of Forests, Wildlife Circle-North, Government of West Bengal
Pradeep Kumar IFS, Forests, Environment and Wildlife Management Department, Government of Sikkim
Rama Kant Rai, Additional Director, Ministry of Environment and Forests, Government of India
Renzino Samdup Lepcha, Executive Secretary, Ecotourism and Conservation Society of Sikkim
Sandeep Tambe IFS, Programme Manager, The Mountain Institute, Sikkim
Shankar Deo Dhakal, Joint Secretary, Culture Affairs and Heritage Department, Sikkim
Sheelwant Patel IFS, Chief Conservator of Forests, Government of West Bengal

Nepal

Badri Raj Joshi, Planning Officer, Ministry of Forest and Soil Conservation, Government of Nepal

Ganesh Pant, Assistant Planning Officer Planning and Human Resources Development, Ministry of Forest and Soil Conservation, Government of Nepal

Narayan Belbase, Coordinator IUCN-Nepal

Om Kar Joshi, Assistant Environment Officer, Environment Division, Ministry of Forests & Soil Conservation

Sabita Thapa, SHL Coordinator, WWF-Nepal Programme

ICIMOD

Bandana Shakya, Research Associate, Transboundary Biodiversity Management

Dipti Thapa, Intern

Eklabya Sharma, Programme Manager, Natural Resources Management

J. Gabriel Campbell, Director General

Janita Gurung, Consultant

Krishna P Oli, Regional Coordinator Access and Benefit Sharing on Biodiversity in the Eastern Himalayas

Nakul Chettri, Coordinator, Transboundary Biodiversity Management

Pema Gyamtsho, Senior Natural Resource Policy Specialist

* Note: Positions are those current at the time of the workshop in June 2006.

The compilers acknowledge the support from the John D. and Catherine T. MacArthur Foundation for this ICIMOD based eastern Himalaya transboundary biodiversity management project in the Kangchenjunga landscape. Contributions made by the participants of the 2006 Sikkim workshop, various national and regional workshops organised by ICIMOD, and our colleagues at ICIMOD, and constructive comments from Mohan P. Wagle, P. Senthil, Sandeep Tambe, and other reviewers are highly appreciated.

Acronyms and Abbreviations

CBD	Convention on Biological Diversity
CEGG	Culture, Equity, Gender and Governance
COP	Conference of Parties
GoN	Government of Nepal
ICIMOD	International Centre for Integrated Mountain Development
IUCN	World Conservation Union
MoFSC	Ministry of Forest and Soil Conservation, Nepal
PAs	Protected Areas
SHL	Sacred Himalayan Landscape
TBM	transboundary biodiversity management
WSSD	World Summit on Sustainable Development
WWF	Worldwide Fund for Nature

Summary

Achieving global conservation goals requires that realisations, agreements, and directives be customised to reach all levels. In the context of the Convention on Biological Diversity (CBD), this means that approaches to conserving biological diversity must be developed at the local landscape level to support national implementation of the Convention.

In recent years, protected area management has evolved from a species-based conservation approach to a livelihoods-based landscape approach. The shift in the conservation paradigm has been gradual, and has included acceptance of communities as an integral part of national level conservation initiatives, together with integration of many global conventions and directives. Scaling up conservation across larger landscapes, as facilitated by most global conventions, involves cooperation at various levels. This publication presents the output of a long process that started with a pilot initiative on transboundary biodiversity management in the southern part of the Kangchenjunga landscape, of eastern Nepal, Sikkim and Darjeeling in India, and Bhutan, which brought to the fore an approach of regional cooperation for implementation of the CBD. The initiative set the stage for formulation of a 'Regional Cooperation Framework' among the three nations, Bhutan, India, and Nepal. The framework is intended as a guide, with provisions that can be adapted and applied to the individual countries in the Kangchenjunga landscape to achieve cooperation for implementation of the CBD. Based on the principles of the CBD, and taking into account the national biodiversity strategies and action plans of each of the three countries, it gives directives on four constitutive elements of biodiversity conservation: transboundary biodiversity conservation, scientific and technical cooperation, information exchange and sharing, and regional guidelines and soft legal instruments. The framework also touches upon the implementation mechanisms and identification of stakeholders and their key roles at local and national, and regional and international, levels.

The paper is divided into three sections. The first part provides an account of transboundary biodiversity conservation in the eastern Himalayas, including an introduction to the Convention on Biological Diversity and the concept of transboundary landscape management, the historical development of transboundary cooperation in the Kangchenjunga landscape, and the development of the Regional Cooperation Framework. The Framework itself is presented in Section 2. Section 3 provides further details of the Convention on Biological Diversity and its programme of work on mountain biodiversity, and on some other major initiatives supporting transboundary biodiversity cooperation in other mountain areas.

SECTION 1

Transboundary Biodiversity Conservation in the Eastern Himalayas

Kangchenjunga range as seen from Darjeeling





Glacial lake at the base of Zumolari mountain in Jigme Dorji National Park, Bhutan

Introduction

It has become increasingly clear over the years that to be successful conservation activities must look beyond protecting a particular species or delimited area. Biodiversity conservation has to take a holistic view, using a comprehensive and multi-scaled approach that not only considers a whole range of interlinked plant, animal, and insect species, but also includes both reserve and non-reserve areas, considers the needs and interests of the people who rely on these areas for their livelihoods, and takes into account the entire landscape, physical and human, in which an area is situated (the matrix). Protected areas have increased greatly in number and extent in many countries, but they 'cannot exist in isolation as islands' (Secretariat of the CBD 2004) if they are to fulfil their function.

This applies not only to single countries. Landscapes are not confined by national borders. In many places, areas of interest for biodiversity conservation include parts of two, three, or even more countries. This is particularly true of mountain landscapes, where borders often follow ridges along mountain chains, dividing the contiguous mountain slopes. In such areas, the success of conservation measures in one country, may depend heavily on the situation across the border. Biodiversity conservation approaches in such areas need to be agreed among all the countries concerned if they are to be of real benefit, if not they may run the risk of becoming contradictory and even counterproductive.

The transboundary conservation approach represents an important means for coordinating the efforts of those countries that share important trans-border ecosystems (Secretariat of the CBD 2004). It implies using a landscape approach to conservation, with coordinated planning for a whole landscape rather than for a limited area defined in terms of political or other boundaries. There is an increasing awareness that using a transboundary ecosystem approach can also contribute to reconciling the demands of biodiversity conservation with those of sustainable development. It takes into account both the ecological interdependence across the international boundary, and the interdependence of the communities located along or close to the border. Many countries realise that both the economic and the environmental interdependence between neighbouring countries can offer opportunities for cooperation, particularly in sharing the benefits of biodiversity conservation. International boundaries play an important role given their multifaceted functions as filter zones for illicit activities, gateways for people and goods, and zones of socioeconomic, cultural, and environmental integration.

In the past few years a number of transboundary initiatives have developed for biodiversity conservation with successful examples of formal cooperation agreements especially in Europe. In the eastern Himalayas, marked progress has been made towards developing a transboundary conservation approach and cooperation agreement for the Kangchenjunga landscape, which is a major centre



Haugetham forest, a critical transboundary habitat for red panda in Ilam, Nepal

of biodiversity spread across four countries. This publication describes briefly the development of the concept of transboundary landscape management and its close connection with the Convention on Biological Diversity (CBD), followed by the activities that culminated in the development of a Regional Cooperation Framework for implementation of the CBD and conservation of the Kangchenjunga landscape. The Framework is presented in detail in Part 2, and further information about the CBD and existing European initiatives that acted as a model is provided in Part 3.

Transboundary Landscape Management

The Convention on Biological Diversity and the concept of transboundary landscape management

Transboundary landscape management is an evolving concept in the conservation of biological diversity, in which conservation means much more than simply protecting a species or an ecosystem within a confined area (Hamilton and McMillan 2004). As an approach it falls under the overall framework of the Convention on Biodiversity (CBD) – the major global agreement on the sustainable use and conservation of biological diversity. The CBD has three main goals: 1) conservation of biological diversity, 2) sustainable use of its components, and 3) fair and equitable sharing of benefits arising from genetic resources.

The Convention was adopted at the Earth Summit in Rio de Janeiro in June 1992 and entered into force on 29 December 1993. There are currently 188 parties to the CBD, including Bhutan, China, India, and Nepal. The CBD provides guidelines for many aspects of biodiversity conservation. Any new conservation recommendations are discussed at the various meetings and then amended in the CBD through the Conference of Parties (COP) to the CBD. Section 3 provides a more detailed account of the background, development, and implications of the CBD.

Transboundary landscape management received global attention after the seventh COP meeting in early 2004, which endorsed the ‘ecosystem approach’ to conservation and highlighted the significance of regional cooperation among the signatories to the convention (Secretariat of the CBD 2004).

Landscape management implies using an integrated approach in the management of extended landscapes, defined by ecosystems rather than boundaries, in which both conservation and sustainable use of the components of biological diversity are considered, and in which people and their sociocultural resources are placed at the centre of the conservation framework. This approach has been strongly recommended for linking conservation with sustainability, involving communities in decision-making processes, and exploiting biodiversity judiciously to secure effective management.

The seventh COP meeting also adopted ‘Mountain Biodiversity’ as a programme of work for mountain-specific activities with the same emphasis on



Origin of Zemu glacier from the base of Mt. Kangchenjunga range in Sikkim

regional cooperation and the ecosystem approach as an effective means of biodiversity conservation (Sharma and Acharya 2004).

Transboundary cooperation in mountain areas

In order to achieve the CBD goals as specifically mentioned in the 'Mountain Biodiversity' decision, biodiversity conservation and programmes related to sustainable use must be scaled up across larger – often transboundary – landscapes. Transboundary biodiversity conservation landscapes incorporate the ecosystem approach while facilitating integration and networking of regional protected areas. This approach is an evolving process for international collaboration in managing and sharing experiences and information in biodiversity conservation and sustainable use. It is also an effective tool for conserving biodiversity, for strengthening collaboration, and for collective measures to harness environmental services by the countries in the landscape.

Already there are some well-developed examples of how this type of cooperation can work. They include two European agreements: the Alpine Convention and the Carpathian Convention. The Alpine Convention covers an area of 191,000 sq.km and a population of 12 million people belonging to seven countries in western Europe, as well as the European Union. It was signed in 1991 and ratified in 1999. The Carpathian Convention was adopted by the seven Carpathian countries in central and eastern Europe in May 2003 and came into force in January 2006. Both focus on preservation and protection linked

to balanced and sustainable development. Section 3 provides further details. Similar efforts are also underway in the Andes and other mountain areas in the Caucasus and Balkans.

Transboundary cooperation in the eastern Himalayas

Transboundary biodiversity conservation efforts began in the Himalayan region in 1992 when several sites were identified as potential transnational parks and the first regional symposium on transboundary conservation in the Himalayas was held in Kathmandu. A subsequent meeting on transboundary biodiversity conservation in the eastern Himalayas in 1994 brought together people from government and non-government sectors and raised awareness of the need for transboundary protected areas in the region (Box 1.1). In 1994/95, transboundary biodiversity conservation programmes were initiated in the eastern Himalayas by The Mountain Institute,

Box 1.1: Hands Around Everest

Key issues requiring transboundary cooperation in the Mt. Everest ecosystem:

- #1: Poaching and smuggling of wildlife products
- #2: Cross-border spread of livestock disease
- #3: Cross-border spread of forest fires
- #4: Livelihoods of people near the border

(Sherpa et al. 2003)



A herd of blue sheep (*Pseudois nayaur*) in Kangchenjunga Biosphere Reserve, Sikkim

the International Centre for Integrated Mountain Development (ICIMOD), and the Governments of Nepal and China. These programmes supported a series of discussions and exchange activities among protected area managers, scientists, and local people in four contiguous protected areas around Mt. Everest (Qomolangma Nature Preserve in Tibet Autonomous Region, China, and Sagarmatha, Makalu-Barun, and Langtang National Parks in Nepal) and the Kangchenjunga Conservation Area in Nepal. The Everest experience demonstrated that the concept of transboundary cooperation could receive strong local support and interest despite logistical challenges for its implementation (Sherpa et al. 2003).

Conservation planning in the eastern Himalayas has taken a stride forward during the last decade, particularly in relation to cooperation for biodiversity conservation and sustainable development in the transboundary conservation complexes (Chettri et al. 2007). With a regional mandate in its strategic working plans, the International Centre for Integrated Mountain Development (ICIMOD) has been bringing stakeholders together including government officials from its different regional member countries, to discuss on a common platform for transboundary regional cooperation for biodiversity conservation for more than a decade (Rastogi et al. 1997; Guangwei 2002; Sherpa et al. 2003). While transboundary approaches continue to develop in the Everest area as well as other parts of the greater Himalayan region, recent efforts have focused on the landscape area of Mt. Kangchenjunga in the eastern Himalayas. This area was identified as an important transboundary landscape through research, dialogue, and information sharing processes (WWF and ICIMOD 2001; CEPF 2005; Chettri et al. 2007).

The Kangchenjunga landscape provides an exceptional opportunity for regional cooperation in transboundary biodiversity conservation within the framework of the Convention on Biological Diversity, and in particular towards achieving the purpose of the CBD's Mountain Biodiversity programme of work (Sharma and Acharya 2004). Geographically, it spreads over the natural and national boundaries of Nepal, India, Bhutan and Tibet Autonomous Region of China. It includes two of the WWF Global 200 Ecoregions (Olson and Dinerstein 2002) and lies within the Himalaya Biodiversity Hotspot (Mittermeier et al. 2004), a testament to the global significance of its biodiversity. A number of the protected areas (PAs) are located at national boundaries providing contiguous habitat for many wildlife species. The initiative that has been developed in this area is intended to serve as an example for the whole Himalayan region, and to provide a model that others can follow.

Transboundary Cooperation and the Landscape Approach in the Kangchenjunga Area

The Kangchenjunga landscape

On the southern side, the landscape surrounding Mt Kangchenjunga (8,586m) spreads over diverse ecological zones in eastern Nepal, Darjeeling and Sikkim in India, and extending to western Bhutan (Figure 1.1). On the northern side, a small part of the northern slope extends into the Tibet Autonomous Region (TAR) of China. The large southern part of the landscape encompasses an area of about 6,000 sq.km. The area is included in one of 34 global biodiversity hotspots: within a 100 km north-south stretch, the landscape contains tropical to alpine vegetation that serves as a habitat for many umbrella and charismatic species including the snow leopard, red panda, takin, blue sheep, serow, Himalayan musk deer, Himalayan thar, tiger, and Asian elephant. Most remnant areas with high biological diversity are found in the border areas of the complex and are facing many conservation issues that are transboundary in nature, demanding an integrated approach for effective conservation through regional cooperation (Pei and Sharma 1998; Sherpa et al. 2003; Sharma and Chettri 2005).

There are 14 important protected areas scattered across the southern part of the complex, six of them transboundary in nature (Figure 1.1 and Table 1.1). The majority of the protected areas are still isolated as conservation 'islands' following a protectionist approach and ignoring the human dimension and cultural aspect embedded in the landscape dynamics. They are scattered at a distance without natural connectivity.

The Kangchenjunga landscape is not only a biodiversity repository endowed with a rich variety of genetic, species, and ecosystem diversities, equally diverse are the cultures and indigenous knowledge and practices in this region. The conservation and environmental services that this landscape provides are locally, regionally, and globally significant. The area also falls within the proposed Sacred Himalayan Landscape (SHL) that extends from Langtang National Park in central Nepal through the Kangchenjunga region to Toorsa Strict Nature Reserve in western Bhutan (GoN/MoFSC 2005). The vision of SHL is "a Himalayan landscape where the biological and cultural treasures of the world's highest sacred mountains and deepest valleys are safeguarded while traditional rights over sustainable resources

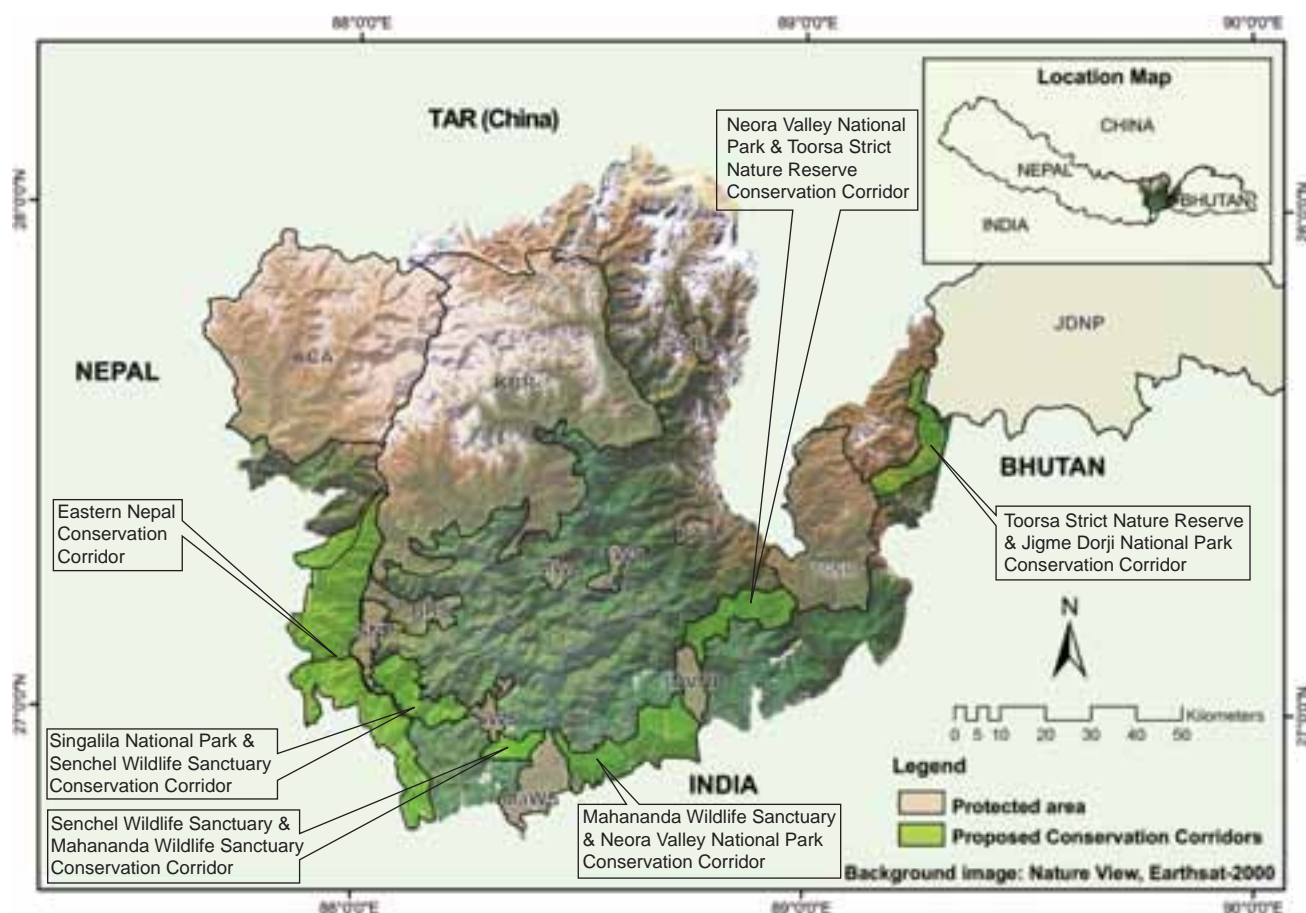


Figure 1.1: Protected areas and proposed conservation corridors in the Kangchenjunga landscape

KCA = Kangchenjunga Conservation Area, Nepal; KBR = Kangchenjunga Biosphere Reserve, BRS = Barsey Rhododendron Sanctuary, FWS = Fambong Lho Wildlife Sanctuary, SRS = Singba Rhododendron Sanctuary, MWS = Mainam Wildlife Sanctuary, KAS = Kyongnosla Alpine Sanctuary, Sikkim, India; SNP = Singhalila National Park, SWS = Senchel Wildlife Sanctuary, MaWS = Mahananda Wildlife Sanctuary, NVNP = Neora Valley National Park, Darjeeling, India; and TSNR = Toorsa Strict Nature Reserve, JDNP = Jigme Dorji National Park, Bhutan

Table 1.1: Protected areas in the (southern) Kangchenjunga landscape

	Protected Area	Location	Area (sq.km)
1.	Kangchenjunga Conservation Area	Taplejung, Nepal	2,035
2.	Khangchendzonga Biosphere Reserve	Sikkim, India	2,620
3.	Barsey Rhododendron Sanctuary	Sikkim, India	104
4.	Fambong Lho Wildlife Sanctuary	Sikkim, India	52
5.	Kyongnosla Alpine Sanctuary	Sikkim, India	31
6.	Mainam Wildlife Sanctuary	Sikkim, India	35
7.	Singha Rhododendron Sanctuary	Sikkim, India	43
8.	Pangolakha Wildlife Sanctuary	Sikkim, India	128
9.	Jore Pokhari Salamander Sanctuary	Darjeeling, India	0.4
10.	Singhalila National Park	Darjeeling, India	79
11.	Senchel Wildlife Sanctuary	Darjeeling, India	39
12.	Mahananda Wildlife Sanctuary	Darjeeling, India	127
13.	Neora Valley National Park	Darjeeling, India	88
14.	Toorsa Strict Nature Reserve	Bhutan	651
	Total area		6,032.4

are ensured and livelihoods of mountain people are enhanced.” The programme aims to sustain cultures and traditions that nurture and revere nature so that Himalayan biodiversity is conserved and sustainable livelihoods ensured within the landscape as reflected in the SHL vision.

Significant conservation issues

Notwithstanding its significance, the Kangchenjunga landscape faces numerous threats to its biological and other diversity as a result of habitat transformation and fragmentation, unsustainable extraction and use of natural resources, impacts from unregulated tourism, and others. Some 65 plant, 19 mammal, and 11 bird species are already threatened in this region (Chettri 2000). As a result of the diverse cultural, political, and administrative settings in the three countries of the southern landscape, conservation issues and priorities differ, however. Table 1.2 summarises conservation issues of local and transboundary significance identified during stakeholder consultations in Bhutan, India and Nepal held during 2003 and 2004.

The overall priority transboundary conservation issues in the Kangchenjunga landscape are

- 1) **overextraction of resources** – poaching of wild-life (e.g. musk bile) and plant species (e.g. *Cordyceps*, *Daphne*); unregulated collection of fuelwood and medicinal plants; and timber extraction by corporations as well as individuals;
- 2) **haphazard land-use practices** – inadequate buffer for protected areas from one country to the other; unregulated cross-border grazing; habitat fragmentation by encroachment, and over-use of resources;
- 3) **livelihood thrusts** – unregulated/unplanned tourism; transhumance; and people-wildlife management related conflicts;
- 4) **policies** – weak enforcement of existing policies and laws; asset ownership and resource use across the border; undefined and weak policies and regulations for cross-border related trade.

These transboundary issues present further challenges:

- A comprehensive information database is required in order to develop intervention strategies and to adequately address transboundary issues including compensation for environmental services and upland-lowland linkages;

Table 1.2: Major conservation issues in the Kangchenjunga landscape

Issue	Bhutan	India	Nepal	Transboundary
Resource extraction	<ul style="list-style-type: none"> ● poaching for bile and musk ● collection of NTFPs ● unregulated collection of medicinal and aromatic plants ● illegal felling of trees ● collection of fuelwood and timber extraction 	<ul style="list-style-type: none"> ● illegal timber logging ● firewood collection for sale ● fodder collection ● poaching/hunting and illegal butterfly collection ● over-exploitation of NTFPs 	<ul style="list-style-type: none"> ● poaching ● over-harvesting of NTFPs 	<ul style="list-style-type: none"> ● poaching (both plants and wildlife) ● illegal fuelwood and timber extraction
Land-use systems	<ul style="list-style-type: none"> ● grazing /grazing pressure 	<ul style="list-style-type: none"> ● landslide-prone areas ● siltation ● use of chemicals in tea gardens and agricultural land ● open grazing ● encroachment and habitat destruction ● small-scale forest fires 	<ul style="list-style-type: none"> ● forest/grazing encroachment ● conflicting land tenure systems ● forest fires 	<ul style="list-style-type: none"> ● cross-border grazing (transhumance)
Livelihood options	<ul style="list-style-type: none"> ● livestock depredation by wild dogs and leopards 	<ul style="list-style-type: none"> ● communities with limited agricultural land and production ● dependency of tea-garden labourers on adjoining forests ● people-wildlife conflict ● improper waste management ● high volume of tourists 	<ul style="list-style-type: none"> ● transhumance system of animal rearing ● large number of unproductive livestock 	<ul style="list-style-type: none"> ● cross border and unregulated tourism
Policies		<ul style="list-style-type: none"> ● weak enforcement of requirement for ground and forest management practices to adopt more effective participatory approaches 	<ul style="list-style-type: none"> ● poor implementation of policies and laws outside the protected areas 	<ul style="list-style-type: none"> ● dual citizenship and ownership of resources ● customs barriers ● cross-border related trade issues

- Varying legal and policy aspects affect resource use and conservation mechanisms (including community rights on the use and tenure of resources) differently in the countries within the landscape;
- Alternative livelihood options are limited and have limited possibilities for scaling up; and
- Physical and financial constraints prevent networking and regular exchange of information and best practices among countries within the landscape.

Transboundary cooperation initiatives

Transboundary cooperation started in the Kangchenjunga landscape in 1997, when researchers and officials from the Tibet Autonomous Region of China, India, and Nepal attended a regional consultation workshop organised by ICIMOD to discuss the status and potential of the Kangchenjunga landscape in terms of conservation of biological diversity (Rastogi et al. 1997). As in many places, the Kangchenjunga landscape had witnessed conservation efforts that ranged from species to landscape level. The aim was to bring the different countries together to develop effective conservation measures for the critical transboundary complexes across the landscape. Transboundary exchanges were identified as crucial mechanisms for promoting collaboration among the countries. The recommendations were:

- 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 to introduce economic benefits by developing tourism and other biodiversity-based enterprises.

With support from the MacArthur Foundation, ICIMOD initiated the 'Transboundary Biodiversity Management' project in 2002 to promote the sustainable use of biodiversity resources



Rhododendrons are a keystone species in the Kangchenjunga landscape



Red Panda: an endangered species in the Kangchenjunga landscape



Intensive agriculture and degradation of natural forest, Ilam, Nepal

and effective conservation in the landscape. This initiative addresses the need to fill gaps in cooperation on biodiversity conservation at the landscape level, as agreed in the 'Mountain Biodiversity' decision at the seventh COP meeting. The aim is to achieve biodiversity conservation through regional cooperation while complying with national and international agendas (e.g. national biodiversity strategies and action plans, and the CBD).

The first phase of the TBM programme focused on cooperation among the three countries sharing the larger southern part of the landscape. Recently activities have been initiated to extend cooperation across the northern boundary and especially to explore possibilities for linking the landscape with the very large Qomolangma National Nature Reserve in Tibet Autonomous Region which is contiguous with Sagarmatha National Park (Everest region) in Nepal.

The TBM programme aims to achieve participatory conservation at a landscape level using an integrated approach. It strongly emphasises community development, regional cooperation, partnership, and biodiversity-based micro-enterprises. The programme has also identified six potential conservation corridors (landscape features that connect large tracts of isolated habitat across a fragmented terrain) that will re-establish natural connectivity among 9 of the 14 protected areas in the southern

half of the Kangchenjunga landscape (Sharma and Chettri 2005). Activities are ongoing to develop these corridors with cooperation from all levels of stakeholders from Nepal, India and Bhutan. In the next phase, the possibility of linking the remaining PAs will also be investigated.

ICIMOD has been playing a pivotal role in forming partnerships; developing community-based natural resources management strategies in and around the protected areas, and exploring the feasibility of developing conservation corridors to link the protected areas in the landscape (Sharma and Chettri 2005). ICIMOD and partners have been trying to address the issues of linking conservation and development through a 'landscape approach' that also involves its most important resource, the people, in conservation planning and seeks to provide them with an economic gain from the conservation efforts. The essence of the transboundary landscape initiative is the use of an integrated approach with partnerships between the communities and government agencies of the countries that share a conservation area of common interest, for effective biodiversity management.

Development of a regional framework for conservation

In the past few years, ICIMOD with its regional partners in India, Nepal and Bhutan have worked towards developing a common regional framework



Making mats from rice straw: sustainable use of local resources



Most of the high altitude areas are critical as they are important habitats for many flagship species including snow leopard

for conservation in the Kangchenjunga landscape. This common framework provides a major tool for coordination and integration of conservation and development activities and represents the culmination of a long process carried out to achieve a common understanding.

The process began in 2002 with a series of stakeholder consultations on planning and improvement of biological corridors between the protected areas in Bhutan, India, and Nepal. These led to development of a consensus on the feasibility of establishing conservation corridors between a number of protected areas in the Kangchenjunga landscape, and also explored conservation-linked development opportunities for communities in the corridor areas (see Sharma and Chettri 2005; Chettri et al. 2007). ICIMOD was instrumental in developing three strategic documents, one each for Nepal, Bhutan, and India, for management of the corridors. ICIMOD also played a pivotal role in conceptualising and developing a strategic document on the Sacred Himalayan Landscape (SHL) to broaden the conservation area in Nepal (GoN/MFSC 2006).

Following the national consultations, ICIMOD organised a regional technical experts' consultative workshop in May 2004 in Kathmandu with some 50 experts, from government, non-government, and civil society organisations in India, Bhutan, and Nepal (ICIMOD 2004). The outcomes of the national stakeholders' consultations were shared and participants developed and agreed on conservation activities for regional cooperation in the Kangchenjunga landscape. A series of action

research activities were carried out including collection of baseline information, feasibility assessments, capacity building, participatory planning, and policy dialogue, to provide the basis for subsequent activities.

A regional technical workshop on 'Policy Framework for Cooperation and Implementation of the Convention on Biological Diversity in the Kangchenjunga Landscape, Sikkim, India' was organised in June 2006 with representatives of the Ministries and Departments related to conservation in Bhutan, India, and Nepal, and technical institutions. A 'Regional Cooperation Framework' was developed during this workshop guided by implementation of the Mountain Biodiversity decision of the CBD. The landscape-based ecosystem approach for conservation was emphasised together with programme elements related to regional cooperation. Advice and ideas from the technical experts participating in the workshop were incorporated, as were the results of the national and regional consultations and the applied baseline research. The framework is presented in full in Section 2.

The framework indicates clearly that conservation with cooperation, and sharing of resources, expertise, and information are seen to be effective options that will enable the countries sharing this complex to benefit mutually from the ecological services rendered by the biological resources.

The Regional Policy Framework is a step forward in the implementation of the CBD in the countries of the Kangchenjunga landscape (Figure 1.2).

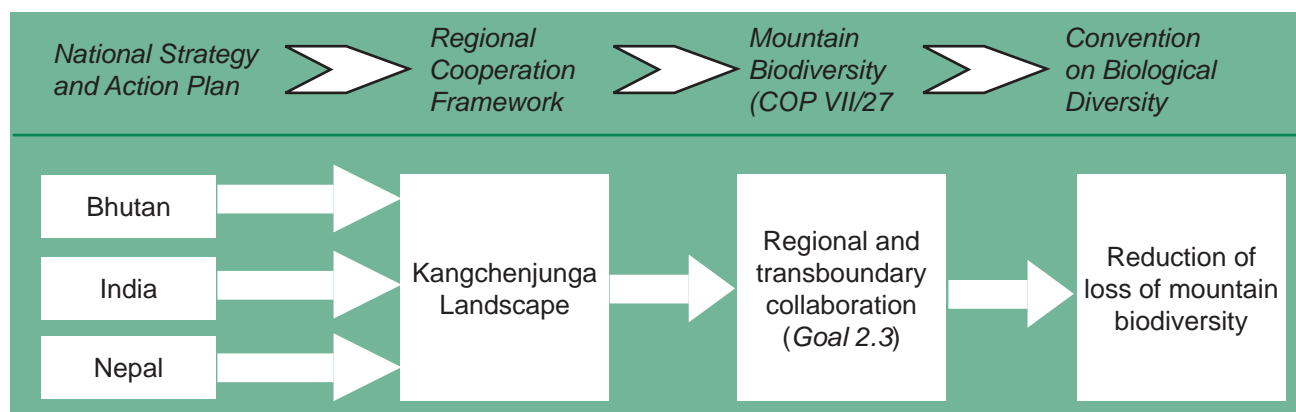


Figure 1.2: The Regional Cooperation Framework for the Kangchenjunga landscape in the context of policy linkage from national to global levels

A Way Forward

The regional cooperation framework is the output of a long process for prioritising conservation areas of global importance and developing consensus among the experts and governments concerned. The process was focussed on customising the CBD provisions to the regional, national, and local levels – in other words on facilitating implementation of the convention by the regional signatories.

The framework will act as a bridging document towards regional cooperation for this critical landscape and could be expanded to other landscapes in the region. The process provides concrete suggestions for strategic directions to make the framework functional and guide the countries sharing this landscape towards a common goal of effective conservation. The guiding principles of the framework include recognition of local and indigenous knowledge and practices, capacity building for livelihood options, exchange of information on illegal resource extraction and animal movement, institutionalising the process through national and regional committees, and enhanced regional cooperation.

Numerous strategic directions for each of the four thematic areas were discussed and recommended for further action with some guidelines and an advocacy strategy for implementation. The recommended strategic directions included creation of common platforms to facilitate information exchange and sharing; strengthening and supporting local and national institutions; building capacity of stakeholders for conservation and livelihood improvement; preparation of a common action plan to build synergy among transboundary stakeholders; formation of a steering committee at the landscape level, and enhancing regional cooperation. ICIMOD is committed in its facilitating role to help make the framework functional to provide a basis for effective conservation in the landscape with active support from the governments, conservation organizations, and civil society.

The processes involved in developing transboundary biodiversity management using a landscape approach in the Kangchenjunga area, and the framework developed for regional cooperation, provide an example of an approach that could be used equally successfully in other transboundary complexes in the greater Himalayan region.



Conservation corridors: landscape mosaic supporting diversity

References

- Chettri N. (2000) *Impact of Habitat Disturbances on Bird and Butterfly Communities along Yuksam-Dzongri Trekking Trail in Khanchendzonga Biosphere Reserve*, PhD Thesis. Rajaramohanpur, Siliguri (India): North Bengal University
- Chettri, N.; Sharma, E.; Shaky, B.; Bajracharya, B. (2007) 'Developing Forested Conservation Corridors in the Kangchenjung Landscape, Eastern Himalaya.' In *Mountain Research Development* 27(3):211-214
- CEPF (2005) *Ecosystem Profile: Indo-Burman Hotspot, Eastern Himalayan Region*. Arlington, VA: WWF US-Asian Program, Critical Ecosystem Partnership Fund
- Convention on Biological Diversity (CBD) <http://www.biodiv.org/convention/default.shtml>
- GoN/MoFSC (2005) *Proceedings of the National Stakeholders' Consultation on Sacred Himalayan Landscape in Nepal*. Kathmandu: Government of Nepal, Ministry of Forests and Soil Conservation
- Guangwei, C. (2002) *Biodiversity in the Eastern Himalayas. Conservation through Dialogue. Summary Reports of the Workshops on Biodiversity Conservation in the Hindu Kush-Himalayan Ecoregion*. Kathmandu: ICIMOD
- Hamilton, L.; McMillan, L. (2004) *Guidelines for Planning and Managing Mountain Protected Areas*. Gland (Switzerland) and Cambridge (UK): IUCN
- ICIMOD (2004) *Proceedings of the Regional Technical Experts Consultative Workshop on Developing a Transboundary Conservation Landscape in the Kangchenjunga Complex*, unpublished report by ICIMOD, Kathmandu, Nepal
- Mittermeier, R.A.; Gils, P.R.; Hoffman, M.; Pilgrim, J.; Brooks, T.; Mittermeier, C.G.; Lamoreaux, J.; da Fonseca, G.A.B. (eds) (2004) *Hotspots Revisited. Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions*. Mexico City: CEMEX
- Olson, D.M.; Dinerstein, E. (2002) 'The Global 200: Priority Ecoregions for Global Conservation'. In *Annals Missouri Botanical Gardens*, 89:199-224
- Pei, S.; Sharma, U.R. (1998) 'Transboundary Biodiversity Conservation in the Himalayas'. In *Ecoregional Cooperation for Biodiversity Conservation in the Himalayas*, 163-186. New York: UNDP
- Programme of Work on Mountain Biodiversity, <http://www.biodiv.org/decisions/default.aspx?m=COP-07&id=7764&lg=0>
- Rastogi, A.; Shengi, P.; Amatya, D (1997) *Regional Consultation on Conservation of the Kangchenjunga Mountain Ecosystem*. Kathmandu: ICIMOD.
- Secretariat of the CBD (2004) *Biodiversity Issues for Consideration in Planning, Establishment and Management of Protected Area Sites and Networks*, CBD Technical Series No 15. Montreal: SCBD
- Seventh Conference of Parties (COP7) <http://www.biodiv.org/decisions/default.aspx?m=cop-07>
- Sharma, E.; Acharya, R. (2004) 'Summary Report on Mountain Biodiversity in the Convention on Biological Diversity (CBD)'. In *Mountain Research and Development*, 24(3): 263-265
- Sharma, E.; Chettri, N. (2005) 'ICIMOD's Transboundary Biodiversity Management Initiative in the Hindu Kush-Himalayas'. In *Mountain Research and Development*, 25(3): 280-283
- Sherpa, L.N.; Peniston, B.; Lama, W.; Richard, C. (2003) *Hands Around Everest: Transboundary Cooperation for Conservation and Sustainable Livelihoods*. Kathmandu: ICIMOD
- The Alpine Convention (n.d.) http://www.conventionalpine.org/page1_en.htm
- The Carpathian Convention (n.d.) <http://www.carpathianconvention.org/index.htm>
- WWF; ICIMOD (2001) *Ecoregion-based Conservation in the Eastern Himalaya: Identifying Important Areas for Biodiversity Conservation*. Kathmandu: WWF Nepal Programme

SECTION 2

Regional Cooperation Framework

Mt. Sinioulchu, Sikkim





Participants in the Cooperation Framework development workshop held in Sikkim, India, in June 2006

Introduction

The Regional Cooperation Framework for Implementation of the Convention on Biological Diversity in the Kangchenjunga landscape is intended to serve as a guide that can be adapted and applied by individual countries within the Kangchenjunga landscape to achieve cooperation for implementation of the Convention on Biological Diversity (CBD). The framework is conceived as a tool to: a) help address the root causes of biodiversity loss in the landscape; b) encourage fast-track planning and implementation of programmes; and c) enhance complementarities and coordination between and among diverse actors engaged in biodiversity conservation in the Kangchenjunga landscape. The Framework presents minimum standards and indicators that can be applied to evaluate a country's progress towards achieving CBD goals within the Kangchenjunga landscape. The Framework also reflects the national biodiversity strategies and action plans of each of the three countries in the Kangchenjunga landscape, i.e. Bhutan, India and Nepal.

The policy framework development process is aimed to:

- bring together policy-makers on a common platform for transboundary biodiversity cooperation,
- share national updates with respect to the CBD implementation among the three countries in the landscape,
- identify policy issues related to transboundary cooperation with references to the 'Mountain Biodiversity' of CBD at the regional level,

- develop a policy framework for cooperation and implementation of Goal 2.3 of Mountain Biodiversity (COP VII/27) along with other goals as agreed by CBD,
- foster partnerships at the regional level.

The Regional Cooperation Framework is based on the following principles:

Participatory Management – ensuring participation of indigenous and local communities, as well as disadvantaged and socially marginalised groups, for biodiversity conservation and management

Equitability – ensuring fair and equitable sharing of benefits arising from genetic and biodiversity resources

Sustainability – aiming for economic, social, and environmental sustainability

Partnerships – building partnerships among local communities, government/non-government institutions, the corporate sector, and financial institutions

Ecosystem Approach – taking an integrated approach into consideration for socioeconomic, cultural, and environmental security

Lessons-learned Approach – applying lessons learned from other transboundary mountain programmes including the Alpine Convention, the Carpathian Convention, and the Mount Everest transboundary programme

Transboundary Cooperation – promoting and strengthening transboundary cooperation



Patches of natural forest as important stepping-stones or corridors for wildlife in Sikkim

Constitutive Elements of the Regional Cooperation Framework

The Regional Cooperation Framework for the Kangchenjunga Landscape has four constitutive elements: 1) transboundary biodiversity conservation; 2) scientific and technical cooperation; 3) information exchange and sharing; and 4) regional guidelines and soft legal instruments.

Transboundary biodiversity conservation

The Kangchenjunga region has experienced conservation interventions ranging from species preservation to landscape-level conservation. Effective conservation of biodiversity in the Kangchenjunga Landscape shall involve an integrated conservation and sustainable development approach which encourages partnerships between communities and government agencies of countries within the landscape. Priority will be given to community development at the local level, followed by cooperation at the regional level to meet global commitments including the CBD.

Strategies to be adopted to achieve transboundary biodiversity conservation include:

- a. Strengthen protected area management systems – including development of a standard framework for monitoring, evaluating, and reporting effectiveness of protected areas management at national and transboundary levels – while also strengthening capacity for enforcement of laws, rules, and regulations; conservation zoning; and biodiversity registration;
- b. Facilitate development of conservation corridors to link protected areas as determined by national priorities for the conservation of biodiversity, and facilitate rehabilitation and restoration of habitats and degraded ecosystems within these conservation corridors;
- c. Promote sustainable livelihoods by adopting sustainable agriculture and grazing practices, promote improved livestock farming and sustainable pastoralism, promote ecotourism at national and regional levels, and strengthen marketing strategy for non-timber forest products;
- d. Encourage sustainable use of components of biological diversity including sustainable use and management of forests, non-timber forest products, and grazing lands and water resources, and protect and encourage cultural and traditional practices and values such as ecotourism that are compatible with conservation and sustainable use;



Exposure visits; networking and information sharing are key building blocks in regional cooperation

- e. Develop and facilitate standardisation of policies and dialogues for implementation of international conventions (e.g. Convention on International Trade in Endangered Species of Wild Fauna and Flora [CITES], Convention on Migratory Species [CMS]) within the three countries to regulate cross-border resource extraction and illegal trade of species and their derivatives, spread of forest fires, and spread of disease;
 - f. Create conditions to facilitate access to genetic resources and ensure that the benefits arising from these genetic resources are shared equitably, and promote conservation-linked income opportunities particularly for marginalised communities;
 - g. Promote mechanisms that will facilitate equitable bio-prospecting and trade in accordance with existing policies of individual countries.
- e. Adoption of legislation that recognises indigenous practices and cultural traditions that promote sustainable use of resources;
 - f. Regular exchange of information among the respective countries and designated enforcement agencies to ensure reduction in illegal resource extraction and movement of wild species and their derivatives across the border;
 - g. Standard policies in place at national and transboundary levels to address transboundary conservation issues;
 - h. Increased access to resources and sharing of resulting benefits by marginalised communities.

Indicators for measuring performance in the area of transboundary biodiversity conservation are:

- a. Effective protected area management systems in place that address biodiversity conservation issues at national and transboundary levels;
- b. Establishment and endorsement of conservation corridors at regional, national, and site levels within the Kangchenjunga Landscape;
- c. Movement of flagship species through transboundary conservation corridors;
- d. Increased sustained economic growth among communities in the landscape;

Scientific and technical cooperation

Research, and technical and scientific data form the basis on which biodiversity conservation programmes can be developed. There is abundant research, and scientific and technical data available on various aspects related to the Kangchenjunga region, but cooperation for collaboration, data-sharing, and capacity-building among the countries constituting the landscape needs to be improved.

Strategies to improve scientific and technical cooperation are:

- a. Based on gap analysis of existing information, prioritise and conduct standardised long-term research on issues relating to the Kangchenjunga landscape;



Communities are an integral part of the landscape. They live in harmony with nature.

- b. Initiate mechanisms and develop collaborative research and scientific programmes of mutual interest among the three countries in the landscape;
- c. Facilitate creation of a working group with representatives from each of the three countries in the landscape to identify research priorities and to optimise efficient utilisation of research results by protected area managers, policy-makers, and local stakeholders;
- d. Foster documentation and exchange of research results, and scientific and technical data, as well as good practices and indigenous/traditional technologies relating to sustainable development and sustainable use of natural resources;
- e. Develop capacity and enhance opportunities for community-based biodiversity research and monitoring.

Indicators for measuring performance in the area of scientific and technical cooperation are:

- a. Conservation priorities identified by the working group will be reflected and/or addressed by regional, national and local policies/legislation, management strategies, and action plans;
- b. Good practices and lessons learned will be adopted and/or adapted where relevant in the landscape;
- c. Regular exchange and sharing of research outcomes and recommendations through annual regional seminars and workshops;
- d. Increased benefits from, and conservation of, biodiversity as a result of enhanced capacity of communities to conduct biodiversity research and monitoring.

Information exchange and sharing

Appropriate exchange and sharing of information can lead to development of common approaches that address common issues. Moreover, information exchange and sharing also fosters regional teamwork. As a result, standardised approaches for transboundary conservation of biodiversity can be developed and informed policy decisions can be made at the landscape level.

Strategies for information exchange and sharing are:

- a. Increase promotion and exchange of traditional and indigenous knowledge and best practices, as well as the actual and potential contribution of such knowledge and practices for conservation and sustainable use of biological resources;
- b. Facilitate information exchange and sharing of information and experiences on issues relating to access and benefit sharing and markets access;
- c. Promote educational and capacity-building systems in line with target groups and conditions within the landscape;
- d. Emphasise capacity-building of women for conservation and dissemination of traditional knowledge through information exchange and sharing;
- e. Explore efficacy of diverse media/platforms for information exchange and sharing including but not limited to inventories and databases, web resources, audio-visual materials, a regional newsletter, national reports and printed materials, information hubs and nature interpretation centres, institutional channels, and meetings and conferences;
- f. Explore suitability of the Clearing House Mechanism for dissemination of documents, best practices, and appropriate technologies, and innovative approaches for biodiversity conservation.

Indicators for measuring performance in the area of information exchange and sharing are:

- a. Increased public education, participation and awareness regarding biodiversity conservation and sustainable resource use in the Kangchenjunga landscape;
- b. Regular consultations achieved and mechanisms for use of information sources established;
- c. Increased rates of adoption of best practices and appropriate technologies in conservation and sustainable resource use in the region.



National consultation of experts and government representatives that led to a consensus for developing conservation corridors in Bhutan

Regional guidelines and soft legal instruments

Regional voluntary guidelines and soft legal instruments are essential in order to address transboundary issues within the framework of existing laws of the countries constituting the Kangchenjunga landscape.

Strategies relevant to regional guidelines and soft legal instruments are:

- a. Assist in the development of voluntary guidelines (and regulations) for transboundary issues within the framework of existing laws of the respective countries in the landscape;
- b. Promote creation of regional voluntary guidelines that identify and acknowledge ecological regions and corridors of biological significance as a Heritage Site, Peace Park, or similar irrespective of national boundaries;
- c. Develop mechanisms – check posts, training of personnel, intelligence gathering, and information exchange – for regular joint monitoring of biodiversity and related issues within the landscape;
- d. Facilitate development of uniform strategies and approaches for conservation of endemic species in the landscape;
- e. Develop guidelines for joint research and develop mechanisms for effective and mutual utilisation of capacities and resources available in the region;
- f. Harmonise existing guidelines for environmental impact assessment (including socioeconomic impacts) of development projects that are likely to have significant impacts on the fragile ecosystem of the Kangchenjunga landscape;
- g. Develop guidelines for capacity-building of communities on transboundary issues that include knowledge exchange and information sharing, cooperation, technology transfer, and awareness generation among stakeholders;
- h. Develop guidelines for creating a common multi-stakeholder platform that will review these guidelines and their implementation at various levels including national, research institutional, state governmental, organisational and community levels;
- i. Develop guidelines for providing incentives for tree tenure, cultivation of non-timber forest products, ex-situ conservation, diversification of

livelihood options, and for providing awards for intelligence reporting and conservation actions.

Indicators for measuring performance in the area of regional guidelines and soft legal instruments are:

- a. Conducting of stakeholder consultations in each of the three countries to identify components of the guidelines;
- b. Formation of working groups and development of guidelines;
- c. Agreement on the regional guidelines by national governments of the three countries constituting the Kangchenjunga landscape;
- d. Implementation of regional guidelines by appropriate authorities.

Implementation and Governance Mechanisms and Processes

Achieving the objective of this Regional Cooperation Framework is dependent on its effective implementation by stakeholders at local and national, and regional and international levels. Implementation and governance mechanisms and processes for coordinating the activities of multiple stakeholders are elaborated below.

Local and national levels

- a. **Key stakeholders** at the local and national levels are community organisations and self-help groups, religious institutions, local government, state government, non-government organisations, ministries/departments (Nature Conservation Division – Bhutan, Department of Forest – West Bengal, Department of Forests – Sikkim, Department of National Parks and



Village level participatory planning in the corridors: a 'bottom up' approach

Wildlife Conservation and Department of Forest – Nepal), agencies/donors/federations/associations, media, and educational institutions (schools, colleges, universities, and research institutions).

- b. **Implementation role** of key stakeholders at local and national levels is:
 - i. Coordinate and facilitate dialogue at local and national levels
 - ii. Motivate local communities for conservation actions
 - iii. Advocate for sensitisation of policy-makers on transboundary conservation issues;
 - iv. Provide technical support to members for lobbying with local and national governments.
- c. **Key mechanisms** that these stakeholders will implement to achieve regional biodiversity conservation in the Kangchenjunga landscape are:
 - i. Establishing a national working committee in each of the countries;
 - ii. Creation of common platforms to facilitate information exchange and sharing;
 - iii. Strengthening and supporting local and national institutions;
 - iv. Building capacity of stakeholders;
 - v. Preparing a common action plan to build synergy among transboundary stakeholders.

Regional and international levels

- a. **Key stakeholders** at the regional and international levels are government agencies, regional organisations, international/non-government organisations, research and educational institutions, traditional institutions, and the corporate sector.
- b. **Implementation role** of key stakeholders at regional and international levels is:
 - i. Represent adequately and appropriately in regional thematic working groups and steering committees;
 - ii. Facilitate partners and their roles, and provide global projection of regional cooperation;
 - iii. Facilitate linkages from local to global levels.
- c. **Key mechanisms** are:
 - i. Establishing a steering committee at the regional level for coordination and monitoring of the activities;
 - ii. Creation and endorsement of a joint regional political statement for cooperation in the Kangchenjunga landscape;
 - iii. Customising of existing regional models to the Kangchenjunga landscape;
 - iv. Facilitation of appropriate feedback channels to the Clearing House Mechanism and CBD Secretariat.



Group work in progress to thrash out the Cooperation Framework at the workshop in Sikkim

SECTION 3

Further Information

Mt. Zumolari, Bhutan





Tea gardens in eastern Nepal are increasing in area and number; there is now serious concern about this mono-culture landuse practice

The Convention on Biological Diversity

The Convention on Biological Diversity (CBD) is a global agreement on the sustainable use and conservation of biological diversity. It has three main goals: 1) conservation of biological diversity, 2) sustainable use of its components, and 3) fair and equitable sharing of benefits arising from genetic resources. The Convention was adopted at the Earth Summit in Rio de Janeiro in June 1992 and entered into force on 29 December 1993. There are currently 188 parties to the CBD, including Bhutan, China, India, and Nepal (Table 3.1).

As general measures for biodiversity conservation and sustainable use (Article 6), the CBD proposes that each Contracting Party develop (or adapt existing) national strategies, plans, or programmes to reflect the measures set out in the Convention. The CBD also recommends that the conservation and sustainable use of biological diversity be integrated as far as possible and as appropriate into relevant sectoral or cross-sectoral plans, programmes, and policies (see <www.biodiv.org>).

A Conference of the Parties (COP) was established by Article 23 of the CBD as the governing body that advances implementation of the Convention through decisions it takes at its periodic meetings (Table 3.2). To date, the COP has held eight ordinary meetings and one extraordinary meeting, with the most recent meeting held in Curitiba, Brazil from 20-31 March 2006.

Table 3.1: Parties to Convention on Biological Diversity within the Kangchenjunga Landscape

Country	Signed	Party	Focal Institution
Bhutan	11 June 1992	25 August 1995 (ratification)	National Environment Commission
China	11 June 1992	05 January 1993	State Environmental Protection Organisation
India	05 June 1992	18 February 1994 (ratification)	Ministry of Environment and Forests
Nepal	12 June 1992	23 November 1993 (ratification)	Ministry of Forests and Soil Conservation

Table 3.2: CBD-Conference of Parties (COP) Meetings and Major Themes

COP	Date	Major Themes
COP-1	28 Nov-9 Dec 1994 Nassau, The Bahamas	Guidance to financial mechanism Medium-term programme of work
COP-2	6-17 Nov 1995 Jakarta, Indonesia	Marine and coastal biodiversity Access to genetic resources Conservation and sustainable use of biological diversity Biosafety
COP-3	4-15 Nov 1996 Buenos Aires, Argentina	Agricultural biodiversity Financial resources and mechanism Identification, monitoring, and assessment Intellectual property rights
COP-4	4-15 May 1998 Bratislava, Slovakia	Inland water ecosystems Review of the operations of the Convention Article 8(j) and related issues (traditional knowledge) Benefit sharing
ExCOP-1	22-23 Feb 1999, Cartagena, Colombia 24-28 Jan 2000, Montreal, Canada	Adoption of Biosafety Protocol
COP-5	15-26 May 2000 Nairobi, Kenya	Dryland, Mediterranean, arid, semi-arid, grassland, and savannah ecosystems Sustainable use, including tourism Access to genetic resources
COP-6	7-19 April 2002 The Hague, Netherlands	Forest ecosystems Alien species Benefit sharing Strategic plan 2002-2010
COP-7	9-20 Feb 2004 Kuala Lumpur, Malaysia	Mountain ecosystems Protected areas Transfer of technology and technology cooperation
COP-8	20-31 March 2006 Curitiba, Brazil	Island, dry, and sub humid lands, global taxonomic initiative, access and benefit sharing (Article 15), Article 8j and related provisions; and communication, education, and public awareness (Article 13)

Relevant articles of CBD on regional cooperation

The CBD maintains that biological diversity can be conserved through in-situ (Article 8) or ex-situ (Article 9) conservation and by the sustainable use of components of biological diversity (Article 10).

Article 8 (in-situ conservation) makes provisions for the establishment and management of a system of protected areas; promotion of protection of ecosystems, natural habitats, and maintenance of viable species in natural surroundings; promotion of environmentally sound and sustainable development in areas adjacent to protected areas; rehabilitation and restoration of degraded ecosystems and promotion of the recovery of threatened species; regulation and management of risks associated with living modified organisms; prevention of introduction, and control or eradication of alien species; respect for, preservation, and maintenance of knowledge, innovations, and practices of indigenous and local communities; development or maintenance of necessary legislation to protect threatened species and populations; and cooperation in providing financial and other support for in-situ conservation. Of particular significance in this Article is the recognition for preserving and maintaining indigenous knowledge and practices, as well as encouraging equitable sharing of benefits arising from the utilisation of such knowledge and practices (Article 8j).

Article 9 (ex-situ conservation) calls for adoption of measures, and establishment and maintenance of facilities for ex-situ conservation and research on plants, animals, and micro-organisms. It also calls for adoption of measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habits.

Article 10 (sustainable use of components of biological diversity) calls for integration of conservation and sustainable use of biological resources into national decision-making; adoption of measures to avoid or minimise adverse impacts on biodiversity; protection and encouragement of traditional use of biological resources that are compatible with conservation or sustainable use requirements; support of local populations to develop and implement remedial action in degraded areas; and encouragement of cooperation between governmental authorities and the private sector in developing methods for the sustainable use of biological resources.

Achievement of biodiversity conservation and sustainable use of biodiversity components is further enhanced by incentive measures (Article 11), research and training (Article 12), public education and awareness (Article 13), impact assessment and minimising adverse impacts (Article 14), access to genetic resources (Article 15), access to and transfer of technology (Article 16), exchange of information (Article 17), technical and scientific cooperation (Article 18), and handling of biotechnology and distribution of its benefits (Article 19).

CBD strategic plan

A 'Strategic Plan (2002-2010) for the Convention on Biological Diversity' was adopted during the sixth meeting of the COP. The Strategic Plan was developed in order to guide the CBD's further implementation at the national, regional, and global levels. The purpose of the Plan is to effectively halt the loss of biodiversity so as to secure the continuity of its beneficial uses through the conservation and sustainable use of its components and the fair and equitable sharing of benefits arising from the use of genetic resources. The Strategic Plans' mission is that parties commit themselves to a more effective and coherent implementation of the three objectives of the Convention in order to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional, and national levels as a contribution to poverty alleviation and to the benefit of all life on earth (Box 3.1).

Box 3.1: Convention on Biological Diversity – Strategic Goals (2002-2010)

- Goal 1: The Convention is fulfilling its leadership role in international biodiversity issues.
- Goal 2: Parties have improved financial, human, scientific, technical, and technological capacity to implement the Convention.
- Goal 3: National biodiversity strategies and action plans and the integration of biodiversity concerns into relevant sectors serve as an effective framework for the implementation of the objectives of the Convention.
- Goal 4: There is a better understanding of the importance of biodiversity and of the Convention, and this has led to broader engagement across society in implementation.

The ecosystem approach

COP-7 placed special emphasis on the 'ecosystem approach' and agreed to prioritise this approach as the primary framework for addressing the three objectives of the Convention (Decision 11). The ecosystem approach is a strategy for the integrated management of land, water, and living resources that promotes conservation and sustainable use in an equitable way. The approach was recognised by the World Summit on Sustainable Development (WSSD) as an important instrument for enhancing sustainable development and poverty alleviation. The ecosystem approach recognises that people, with their cultural diversity, are an integral component of many ecosystems. It incorporates three important considerations:

- i) management of living components is considered alongside economic and social considerations at the ecosystem level;
- ii) if management of land, water, and living resources in equitable ways is to be sustainable, it must be integrated and worked within the natural limits and utilise the natural functioning of ecosystems;
- iii) ecosystem management is a social process; there are many key stakeholders who must be involved through the development of efficient and effective structures and processes for decision-making and management.

Mountain Biodiversity

COP-7 also adopted the programme of work on mountain biological diversity (Decision 27, Box 3.2). This programme will be implemented using the ecosystem approach, and in many instances regional cooperation has been strongly advocated for critical transboundary areas. The overall purpose of the programme is the significant reduction of mountain biological diversity loss by 2010 at global, regional, and national levels, through the implementation of the three main objectives of the CBD. The programme aims to make a significant contribution to poverty alleviation in mountain ecosystems and in lowlands dependent on goods and services of mountain ecosystems and thereby contribute to the objectives of the Strategic Plan of the CBD, the Plan of

Box 3.2: CBD Programme of Work on Mountain Biodiversity (VII/27)

Programme Elements and Goals

Programme Element 1: Direct actions for conservation, sustainable use, and benefit sharing

Goal 1.1: To prevent and mitigate the negative impacts of key threats to mountain biological diversity

Goal 1.2: To protect, recover, and restore mountain biological diversity

Goal 1.3: To promote the sustainable use of mountain biological resources

Goal 1.4: To promote access to, and sharing of, benefits arising from the utilisation of genetic resources related to mountain biological diversity in accordance with national legislation where it exists

Goal 1.5: To maintain genetic diversity in mountain ecosystems in particular through the preservation and maintenance of traditional knowledge and practices

Programme Element 2: Means of implementation for conservation, sustainable use, and benefit-sharing

Goal 2.1: To enhance the legal, policy, institutional, and economic framework

Goal 2.2: To respect, preserve, and maintain knowledge, practices, and innovations of indigenous and local communities in mountain regions

Goal 2.3: To establish regional and transboundary collaboration and the establishment of cooperative agreements

Programme Element 3: Supporting actions for conservation, sustainable use, and benefit-sharing

Goal 3.1: To develop work on identification, monitoring and assessment of mountain biological diversity

Goal 3.2: To improve knowledge on and methods for the assessment and monitoring of the status and trends of mountain biological diversity based on available information

Goal 3.3: To improve the infrastructure for data and information management for accurate assessment and monitoring of mountain biological diversity and develop associated databases

Goal 3.4: To improve research, technical and scientific cooperation, and other forms of capacity-building related to mountain biological diversity

Goal 3.5: To increase public education, participation, and awareness in relation to mountain biological diversity

Goal 3.6: To promote the development, validation, and transfer of appropriate technologies for mountain ecosystems, including indigenous technologies in accordance with Article 8(j) of the CBD and related provisions.

Implementation of the WSSD, and the Millennium Development Goals. Moreover, in accordance with Article 8(j) and related provisions of the CBD, the programme will account for the knowledge, innovations, and practices of indigenous and local communities and ensure their participation in conservation and sustainable use of mountain biodiversity. Box 3.2 outlines the programme elements and goals of the CBD Programme of Work on Mountain Biodiversity (see Sharma and Acharya [2004] for more details).

Side event on ‘Mountain Biodiversity Partnership’ during COP 8

A side event on ‘Mountain Biodiversity Partnership for Implementing the CBD’ was organised jointly by United Nations Environment Programme-Vienna, European Academy Bozen/Bolzano, IUCN, and ICIMOD during COP-8 at Curitiba, Brazil. The event recommended providing more focus on mountain ecosystems for biodiversity conservation and on the exchange of expertise between different mountain systems in the world. It was recommended that such partnerships be developed, and as an immediate follow-up to this recommendation, a planning workshop was held in 2006 on exchange between Gran Paradiso National Park, Italy, and Sagarmatha National Park, Nepal.

Initiatives Supporting Transboundary Biodiversity Cooperation

The Alpine Convention

The Alpine Convention is a landmark initiative for achieving transboundary conservation in mountain regions of the Alps. The Convention covers an area of 191,000 sq.km and a population of 12 million people belonging to 8 countries, 37 regions, and 6,200 communities. The Alpine Convention was started following a decision made in 1989 in Berchtesgaden, Germany; it was signed in 1991 in Salzburg, Austria, and ratified in 1999. The Convention is based on the principle of balanced and sustainable development, and has the objective of fostering development while maintaining the characteristics of the Alpine Region (Box 3.3).

Box 3.3: Convention on the Protection of the Alps (Alpine Convention)

Countries Party to the Convention – Signatory States

Germany, Austria, France, Monaco, Italy, Liechtenstein, Switzerland, Slovenia.

Additional Signatory – European Union

Highlights

Principles to be applied for the preservation and protection of the Alps are: prevention, payment by the polluter, and cooperation (*Article 2*).

Appropriate measures are to be taken particularly in the following areas: 1) population and culture, 2) regional planning, 3) prevention of air pollution, 4) soil conservation, 5) water management, 6) conservation of nature and the countryside, 7) mountain farming, 8) mountain forests, 9) tourism and recreation, 10) transport, 11) energy, and 12) waste management (*Article 2*).

Cooperation for research and systematic monitoring shall be achieved (*Article 3*).

Exchange of legal, scientific, economic and technical information relevant to the Alpine Convention shall be facilitated and promoted (*Article 4*).

Reference: Convention on the Protection of the Alps (Alpine Convention)

URL: http://www.conventionalpine.org/page1_en.htm

The Carpathian Convention

Following the Alpine Convention, a framework was proposed in 2001 for regional cooperation to achieve protection and sustainable development of the Carpathians, a major transboundary mountain system shared by seven countries in Central and Eastern Europe. A year later, the Alpine-Carpathian partnership was initiated and launched. The seven Carpathian countries – the Czech Republic, Hungary, Poland, Romania, Serbia and Montenegro, the Slovak Republic, and the Ukraine – adopted the Framework Convention on the Protection and Sustainable Development of the Carpathians in May 2003; the Carpathian Convention entered into force on 4 January 2006 (Box 3.4).

Box 3.4: Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention)

The Parties

Czech Republic, Hungary, Poland, Romania, Serbia and Montenegro, Slovak Republic, Ukraine

Highlights

In order to achieve the Convention's objectives, the Parties shall apply the following (Article 2):

- a) precaution and prevention principles
- b) 'polluter pays' principle
- c) public participation and stakeholder involvement
- d) transboundary cooperation
- e) integrated planning and management of land and water resources
- f) programmatic approach
- g) ecosystem approach

The Convention stresses the application of the integrated approach to land resources management (Article 3).

Policies pertaining to the following shall be pursued (Articles 4-13):

- Conservation and sustainable use of biological and landscape diversity
- Spatial planning
- Sustainable and integrated water/river basin management
- Sustainable agriculture and forestry
- Sustainable transport and infrastructure
- Sustainable tourism
- Industry and energy
- Cultural heritage and traditional knowledge
- Environmental assessment/information system, monitoring and early warning
- Awareness raising, education, and public participation.

Reference: The Carpathian Convention

URL: <http://www.carpathianconvention.org/index.htm>

References

Convention on Biological Diversity (CBD) <http://www.biodiv.org/convention/default.shtml>

Programme of Work on Mountain Biodiversity, <http://www.biodiv.org/decisions/default.aspx?m=COP-07&id=7764&lg=0>

Sharma, E; Acharya, R. (2004) 'Summary Report on Mountain Biodiversity in the Convention on Biological Diversity (CBD)'. In *Mountain Research and Development*, 24(3): 263-265

The Alpine Convention (n.d.) http://www.conventionalpine.org/page1_en.htm

The Carpathian Convention (n.d.) <http://www.carpathianconvention.org/index.htm>



International Centre for Integrated Mountain Development
Khumaltar, Lalitpur, GPO Box 3226, Kathmandu, Nepal
Tel: +977 1 5003222, Fax: +977 1 5003277 / 5003299
Email: distri@icimod.org, www.icimod.org

ISBN 978 92 9115 060 1