

Towards Developing the Brahmaputra-Salween Landscape

Report on the Experts Regional Consultation for
Transboundary Biodiversity Management and
Climate Change Adaptation



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The International Centre for Integrated Mountain Development, ICIMOD, is a regional knowledge development and learning centre serving the eight regional member countries of the Hindu Kush Himalayas – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and based in Kathmandu, Nepal. Globalisation and climate change have an increasing influence on the stability of fragile mountain ecosystems and the livelihoods of mountain people. ICIMOD aims to assist mountain people to understand these changes, adapt to them, and make the most of new opportunities, while addressing upstream-downstream issues. We support regional transboundary programmes through partnership with regional partner institutions, facilitate the exchange of experience, and serve as a regional knowledge hub. We strengthen networking among regional and global centres of excellence. Overall, we are working to develop an economically and environmentally sound mountain ecosystem to improve the living standards of mountain populations and to sustain vital ecosystem services for the billions of people living downstream – now, and for the future.



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Towards Developing the Brahmaputra-Salween Landscape

Report on the Experts Regional Consultation for
Transboundary Biodiversity Management and
Climate Change Adaptation

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Production Team

Andrea Perlis (Senior editor); Amy Sellmyer (Editor); Dharma R Maharjan (Layout and design); Asha Kaji Thaku (Editorial assistant)

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Foreword

The Brahmaputra-Salween Landscape (BSL) is a biodiversity-rich transboundary landscape that stretches across China, India, and Myanmar in the eastern Himalayas. Located at the confluence of Indo-Malayan, Palaeoartic, and Sino-Japanese realms, this landscape harbours a rich mixture of floral and faunal elements from the three biogeographic regions and thus has a high degree of endemism. The landscape hosts several well-known protected areas such as Namdapha National Park and Tiger Reserve (Arunachal Pradesh, India), Hkakabo Razi National Park (Kachin State, Myanmar), and Gaoligongshan National Nature Reserve (Yunnan Province, China) that share the contiguous habitat of several plant and animal species of global conservation significance. Besides harbouring an extremely rich biodiversity, this landscape is home to diverse ethnic communities with unique socio-cultural traditions. However, there are numerous environmental and socioeconomic discrepancies impacting the existence of both the region's biodiversity and its people. Striking a balance between traditional resource use patterns, globalization, sustainable development, and biodiversity conservation in the region is the challenge at hand.

While there are global policy instruments such as the CBD to guide national biodiversity strategies and action plans, it is imperative for the countries in the region to join hands and combine individual efforts, resources, expertise, and knowledge to produce a regional outcome for the shared landscape. Landscape complexes, like the BSL and several others across the Hindu Kush Himalayan (HKH) region, should be viewed as platforms to instigate cumulative regional action towards the long-term sustainability of entire landscapes and the environmental and socioeconomic elements within them. In addition, the BSL even creates an opportunity to establish strategic landscape connectivity between the HKH and the Greater Mekong region further east.

The regional Experience-Sharing Consultation on the Landscape Approach to Biodiversity Conservation and Management in the Eastern Himalayas, held in Tengchong County, Yunnan Province, China, in 2009, laid the groundwork for a dialogue on a regional conservation initiative for the BSL. The second consultation on the BSL organized in Nay Pyi Taw, Myanmar, 21-23 December 2011 again brought together ICIMOD and partner institutions from the three member countries to reflect on the outcomes of the consultation in Tengchong and to work out a framework for future programmatic action. The consultation was successful in producing a draft framework to define the long-term vision, goals, objectives, and a strategic action plan to facilitate both national and regional biodiversity management in the BSL. The strategic framework is intended to build the capacity of national institutions and individuals for research and knowledge development and for knowledge sharing as well as for designing management interventions on the ground to help communities enhance their socioeconomic resilience to climate change and other drivers of change.

Wu Ning

Programme Manager

Environmental Change and Ecosystem Services

ICIMOD

Acronyms and Abbreviations

BSL	Brahmaputra-Salween Landscape
CAS	Chinese Academy of Sciences
CBD	Convention on Biological Diversity
CBIK	Centre for Biodiversity and Indigenous Knowledge
ECES	Environmental Change and Ecosystem Services Programme
GBIF	Global Biodiversity Information Facility
GBPIHED	GB Pant Institute of Himalayan Environment and Development
GIS/RS	Geographical information system/remote sensing
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GNNR	Gaoligongshan National Nature Reserve
HKH	Hindu Kush Himalayan region
HKH-BIF	Hindu Kush Himalayan Biodiversity Information Facility
ICIMOD	International Centre for Integrated Mountain Development
ICRAF	World Agroforestry Centre
ITPR	Institute of Tibetan Plateau Research
INGOs	International non-governmental organizations
KIB	Kunming Institute of Botany
KIZ	Kunming Institute of Zoology
KSLCI	Kailash Sacred Landscape Conservation Initiative
LULCC	Land-use and land-cover change
MENRIS	Mountain Environment and Natural Resources' Information System
MOECAF	Ministry of Environmental Conservation and Forestry, Myanmar
MOEF	Ministry of Environment and Forests, India
MOEP	Ministry of Environmental Protection, China
MOST	Ministry of Science and Technology, China
NGOs	Non-governmental organizations
NSFC	National Science Foundation-China
NWCD	Nature and Wildlife Conservation Division
PES	Payment for ecosystem services
REDD	Reduced emission through deforestation and degradation
TNC	The Nature Conservancy
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization

Background

The Hindu Kush Himalayan (HKH) region forms one of the most fragile mountain chains in the world. The region is endowed with diverse ecosystems that provide numerous goods and services to millions of people within and outside its geographical boundaries. However, population growth and increasing anthropogenic pressures on these resources are increasingly besieging the region's irreplaceable biodiversity. The HKH region features parts of four of the 34 global 'biodiversity hotspots' that harbour a large number of endemic and endangered species. The region's biodiversity is also subject to acute human pressure. With regards to conservation significance in the HKH, about 39 per cent of its geographical area is under protected area (PA) networks. Many of the PAs are transboundary in nature and are significant to more than one country in terms of the ecosystem goods and services they provide. However, the conservation benefits of such transboundary, protected areas are still understated, and conservation and development issues are still considered separate entities. Cooperation and coordination among the countries that share such critical landscapes is still in nascent stages.

Realizing the need for a regional approach, the International Centre for Integrated Mountain Development (ICIMOD) with partner institutions in its eight member countries is engaged in developing transboundary landscapes by applying the CBD's ecosystem approach at the landscape level. To ease implementation, seven transboundary landscapes have been identified across the HKH, including the Brahmaputra-Salween Landscape (BSL). The consensus-building process for a regional conservation initiative in the BSL began with the regional Experience Sharing Consultation co-organized by ICIMOD and the Kunming Institute of Botany (KIB), Tengchong, China, in 2009. The consultation convened representatives from Bhutan, China, India, Myanmar, and Nepal to reflect on past conservation experience and the need for a regional conservation initiative in the BSL. Key institutions such as the KIB of China, the Forest Department of Myanmar, and the G.B. Pant Institute of Himalayan Environment and Development (GBPIHED) of India were included in the consultation. Attending government representatives from Bhutan and Nepal shared their experience in regional biodiversity management initiatives.

The Tengchong consultation also highlighted the need for a preliminary multidisciplinary assessment within the areas of the landscape shared by China, India, and Myanmar. The pre-feasibility study commissioned by ICIMOD to national partners in the three countries, with support from the MacArthur Foundation and GIZ, revealed that the BSL has enormous potential to serve as the model for implementing transboundary conservation strategies to safeguard regional biodiversity in a topographically diverse landscape with globally rich biological systems and for restoring fragmented habitats through the establishment of connectivity corridors. There are ample opportunities to implement the decisions of the CBD (especially the Programme of Work on Mountain Biological Diversity and the Programme of Work on Protected Areas), to encourage international collaboration on joint research, and to strengthen policies and institutions through the development of a regional cooperation framework. However, achieving the long-term goals of transboundary biodiversity conservation, ecosystem management, sustainable development, and climate change adaptation within the BSL will require both strong national commitments and strategic regional partnerships among a wider range of stakeholders.

The Experts Regional Consultation organized in Nay Pyi Taw, Myanmar, by ICIMOD in collaboration with the Forest Department under the Ministry of Environmental Conservation and Forestry (MOECA), Government of Myanmar, helped collect updates on pre-feasibility assessment studies and formulate the future course of action. The consultation solicited advice from experts on the vision and direction for developing a transboundary biodiversity management and climate change adaptation initiative in the BSL.

Objectives of the consultation

The overall objective of the consultation was to develop a framework for long-term programmatic action and begin the process to develop the regional cooperation framework for the BSL.

The specific objectives were:

- to revisit the status of follow-up actions decided during the Tengchong consultation;
- to share biodiversity management interventions being carried out by member countries;
- to share the regional synthesis of pre-feasibility studies; and
- to draft a long-term (phase wise) programme framework to develop a transboundary biodiversity management and climate change adaptation initiative.

Organization of the consultation

About 30 participants representing academic and research institutes, government representatives, international organizations, and ICIMOD attended the regional BSL consultation in Nay Pyi Taw (see Annex 2).

The regional consultation began with a reception dinner hosted by Myanmar's Forest Department, MOECA. The occasion was graced by the presence of His Excellency, U Win Tun, Union Minister, MOECA, who made brief welcoming remarks.

The following one-and-a-half day consultation was divided into an opening session, technical sessions and a concluding session (see Annex 3). The opening session commenced with remarks from H.E. U Win Tun, who shared some perspectives on environmental conservation in Myanmar, and read a statement made by the president of the Government of Myanmar during a parliament meeting: 'We will pay serious attention to the conservation of forests and woodlands and take measures in various sectors to reduce air and water pollution, to control the dumping of industrial waste, and to conserve wildlife. We will lay down a new policy in which we will work for economic development in-parallel with environmental conservation'. Mr Tun indicated that his ministry will continue taking positive steps to formulate national laws that take sustainable development as well as green growth into consideration. He further stated that achieving the long-term goals of transboundary biodiversity conservation, ecosystem management, sustainable development, and climate change adaptation within the BSL will require strong national commitments and strategic regional partnerships among a wider range of stakeholders in the three countries and beyond. He expressed his hope that the consultation would provide a vision and direction for future strategic action towards developing a transboundary landscape initiative in the BSL.

Speaking on the occasion, Dr David Molden, Director General, ICIMOD, reflected on the history and initiation of ICIMOD as a regional, intergovernmental knowledge centre with a mandate to work in eight countries (Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan) in the HKH. He stated that ICIMOD remains accountable to all of its member countries. Acknowledging the presence of His Excellency, Dr Molden reiterated the ownership of ICIMOD's regional interventions by its member countries. He highlighted the organization's niche role of facilitating dialogue over transboundary issues through the development of regional cooperation frameworks. Dr Molden stated that while ICIMOD works closely with national partners to implement national environmental and developmental objectives, as a knowledge centre it also aims to generate a regional voice to represent mountain issues from the HKH in global platforms and conventions. Reflecting on ICIMOD's various interdisciplinary programmes, Dr Molden stressed that the landscape biodiversity initiative advocated by the CBD and promoted through ICIMOD's seven transboundary complexes is an important programme and is gradually gaining acceptance among member countries. Dr Molden expressed his hope that China, India, and Myanmar, together with ICIMOD and other relevant organizations, will be able to draft a long-term programme of action for the BSL.

The technical sessions included remarks from country representatives and a brief presentation on ICIMOD's transboundary conservation initiatives. There were presentations from each country reflecting on their own conservation and management interventions that may influence the path towards a regional biodiversity management and climate change adaptation initiative in the BSL. ICIMOD presented a summary of the pre-feasibility assessment. Another technical session recalled major elements of the first regional BSL consultation, the Tengchong consultation, among China, India, Myanmar, and ICIMOD. There was a presentation by ICIMOD on the process of developing the regional cooperation framework between China, India, and Nepal under the Kailash

Sacred Landscape Conservation Initiative, followed by a discussion on the draft strategic framework for the BSL. The final technical session involved group work that helped refine the programme framework and major action points to further the biodiversity management and climate change adaptation initiative in the BSL.

The concluding session included statements on the way forward facilitated by Dr Eklabya Sharma, Director of Programme Operations at ICIMOD. Each country gave closing remarks reiterating their commitment to achieve the collective goal envisioned for the BSL. The participants acknowledged the warm hospitality provided by the Government of Myanmar, especially the Forest Department, MOECA. Representing India, Dr L.M.S. Palni, Director of GBPIHED, proposed a third regional meeting in India in 2012. Prof. Yang Yongping from the Institute of Tibetan Plateau Research (ITPR) in China opined that while regional initiatives are challenging, they provide immense opportunities for joint learning and expanding knowledge horizons, solving conflicts collectively, overcoming management hurdles, and influencing decision-making bodies at all levels. Dr Kyaw, Deputy Director General of the Forest Department in Myanmar and Chair of the ICIMOD Board of Governors, appreciated the efforts and dedication of the participants in making the consultation a success. He thanked all the participants for their thoughts on how to make the regional BSL initiative relevant for a wider range of stakeholders. He assured that his colleagues from the Forest Department would continue their cooperation to enhance the regional initiative. Dr Molden from ICIMOD acknowledged Dr Kyaw's leadership and remarked that the consultation was highly productive in terms of encouraging discussion for transboundary cooperation among the three nations. He stated that ICIMOD remains committed to facilitating the regional process. He mentioned that while we strengthen our foundation through good science, it is equally important to translate and transmit knowledge to improve the status of biodiversity in the region and have some impact on the ground so as to improve people's lives and livelihoods. Reflecting on the demand for resources required to put together the mechanisms needed to promote regional cooperation, Dr Molden pointed out that the support ICIMOD provides will not be enough and that the regional process will only gain momentum if member countries intensify their national-level support for activities on the ground. The chair for the concluding session, Mr Basant Shrestha, Division Head-MENRIS at ICIMOD, stated that a balanced approach between research and development interventions will be required for the regional BSL initiative to flourish. Stating that the consultation had already kicked off the partnership-building process, Mr Shrestha hoped that regional cooperation among the three countries would soon result in consensus on the draft strategic framework developed during the consultation.

Highlights of the Technical Sessions

The first technical session commenced with a brief remark from the chair, Dr Nyi Nyi Kyaw. Starting the country remarks, Prof. Dezhu Li, Director of the KIB in China, shared his experiences working in the Yunnan Province for over two decades. He also reaffirmed the support from his team at the KIB for the regional initiative and stated that the KIB is working closely with the National Science Foundation-China (NSFC) and the Chinese Academy of Sciences (CAS) for research in this important area. There are many opportunities for collaborative research and developing joint biodiversity conservation initiatives in the landscape. Dr L.M.S. Palni, reflected on the historical value and present significance of the BSL's biodiversity – how intricately it is connected to people's lives, their growth and, their development. Dr Palni also stressed the need to capitalize on the services derived from forests and other ecosystems to better people's well-being across the region. He also mentioned that the goals of the landscape approach should give due attention to cultural diversity and the associated agrobiodiversity. Dr Palni stressed that our interventions should not just be for academic growth but also for the improvement of the lives of people dependent on the resources of the BSL. He further highlighted steps taken by the Ministry of Environment and Forests (MOEF), Government of India, towards establishing a separate division within the ministry to support implementation of one of the sectoral missions of the National Action Plan on Climate Change – sustaining the Himalayan region. At the end, Dr Palni proposed India as a venue for the third regional meeting to further regional cooperation on the BSL.

Dr Eklabya Sharma gave an overview of ICIMOD's transboundary landscape and trans-Himalayan transect approaches and explained their significance for addressing data gaps in the region, for coordinating ecological research for long-term monitoring, and for promoting interventions to maintain landscape contiguity to ensure long-term sustainability of ecosystem services. He further stressed the need for regional cooperation for regional biodiversity conservation and management initiatives and stated that the contiguity of ecosystems in the HKH is being lost due to habitat fragmentation. He also stated that the challenges are not just in the protection of biodiversity, but also of encouraging their sustainable use, the sustainability of ecosystem services, livelihood enhancement, and access and benefit sharing. He shared examples from the Kailash Sacred Landscape, Kangchenjunga Landscape, and Karakoram Landscape and highlighted the strategic importance of developing the regional biodiversity management initiative in the BSL. Dr Sharma also elaborated on the linkage of transboundary landscape biodiversity management initiatives to other regional programmes at ICIMOD such as the HKH Cryosphere and Monitoring Programme, River Basin Programme in Indus and Kosi, and Himalayan Climate Change Adaptation Programme.

Country updates

On behalf of China, Prof. Yang Yongping presented an update on steps the country had taken after the Tengchong consultation. Following the Tengchong consultation, China developed a programme of work for its area of the BSL that included a partnership-building exercise where the KIB partnered with the Ministry of Environmental Protection (MOEP), Ministry of Science and Technology (MOST), the NSFC, the Department of Forests from the Southwest Forestry University, the Yunnan Agriculture University, the Kunming Institute of Zoology (KIZ); The Nature Conservancy (TNC), the World Agroforestry Centre (ICRAF), and the Centre for Biodiversity and Indigenous Knowledge (CBIK) on several biodiversity and climate change adaptation projects in the Gaoligongshan National Nature Reserve (GNNR). Although the region is quite isolated, there are several projects supporting biodiversity inventory and knowledge base development there. He elaborated on research on the molecular phylogeny of bamboo, Himalayan yew, small mammals and on karyomorphological (chromosome morphology) studies. There are also some focused global information services/remote sensing (GIS/RS)-based land use and land cover change (LULCC) and ecosystem monitoring studies being conducted in the GNNR. Community-based interventions promoting climate change adaptation have also been explored and documented. A multi-stakeholder pre-feasibility

analysis was carried out to explore the perception of government organizations, research communities, research foundations, NGOs and other development organizations on developing the regional initiative in the BSL. The analysis also explored the roles each institution could play to support the regional initiative. Prof. Yongping further indicated a commitment of nearly 2 million yuan by the KIB for research in the GNNR and surrounding areas and indicated several small grant proposals awaiting grant approval from domestic foundations.

On behalf of India, Dr Prasanna K. Samal, Scientist In-Charge at the GBPIHED, presented the country update, highlighting the biodiversity significance of the eastern Himalayas in terms of global priority templates such as crisis ecoregions, global biodiversity hotspots, endemic bird areas, mega diversity countries, etc. Dr Samal mentioned that Arunachal Pradesh, one of the northeastern states of India lying within the premises of the BSL, is arguably India's most biodiversity and culturally rich state with 82 per cent of land under dense forest cover, 10 sanctuaries, including one orchid sanctuary (Sessa Orchid Sanctuary in West Kameng District), two national parks (Namdapha National Park and Mouling National Park) and one biosphere reserve (Dihang-Dibang Biosphere Reserve). Reflecting on climate change issues, Dr Samal mentioned that climate change impacts are evident through phenomena such as an increase in the number of invasive alien species, an increase in vector-borne diseases, changes in phenology, and in some cases the decrease and disappearance of populations of orchids as well as some threatened, endemic species with restricted distribution or a narrow habitat range. Giving an overview of national-level conservation initiatives in the area, Dr Samal talked about the pre-feasibility study conducted with support from ICIMOD in Namdapha National Park and Mouling National Park. He also presented some of the biodiversity conservation through community-based natural resource management initiatives being implemented by GBPIHED such as dependency assessment, resource mapping, capacity enhancement and skill development for low-cost, technology-based entrepreneurship, strengthening and promoting eco-culturally appropriate livelihoods like community-based tourism, conservation awareness campaigns, promotion of energy alternatives as well as alternatives for medicinal and aromatic plants through ex-situ and in-situ conservation, development of integrated agro-horti-silvicultural models, creation of community-conserved areas, and documentation and realization of non-codified institutional arrangements in sustainable resource management.

The country presentation on Myanmar was given by Mr Win Niang Thaw, Director of the Nature and Wildlife Conservation Division (NWCD). Mr Thaw spoke about protected areas and conservation in Myanmar, with special reference to the Northern Forest Complex of Myanmar. He gave an overview of the diversity of forest types and species richness in Myanmar and reflected on the nation's priority for conservation, quoting the national environmental policy: 'It is the responsibility of the state and every citizen to preserve its natural resources in the interest of present and future generations'. Mr Thaw also stated Myanmar's commitment towards strengthening wildlife management through the establishment of a network of national parks, nature reserves, and wildlife sanctuaries, thereby increasing the protected area coverage to 10 per cent of the total land and that the NWCD, under the Department of Forestry, has mandated for effective nature conservation and protected area management. He stated that between 1998 and 2010, 12 PAs ranging in size from 23 sq.km to 11,022 sq.km have been added under the PA system and the current PA coverage stands at 6.67 per cent of the country's total area. Elaborating on the legal backbone for PA management and biodiversity conservation in Myanmar, Mr Thaw indicated several constraints ranging from the technical capacity of conservation officials and minimal local participation in conservation to weak implementation of existing laws and policies and inadequate infrastructural support. In relation to the BSL, the Northern Forest Complex of Myanmar will be crucial as a transboundary connection to India and China. There is a clear need to develop a research programme and management interventions to protect the watersheds of the Ayeyarwady and Chindwin rivers in order to conserve the rich, globally significant biodiversity they feature and support the livelihoods of local communities through conservation-based livelihood opportunities. While describing conservation activities undertaken in collaboration with other global institutes, such as the Smithsonian Institution, the Makino Botanical Gardens, and the California Academy of Sciences, Mr Thaw reiterated the urgent need for transboundary cooperation with neighbouring countries in several aspects of biodiversity management in the BSL, particularly in the context of sustaining ecosystem services under an evolving climate change scenario.

Pre-feasibility assessment: Regional synthesis

The presentation given by Dr Nakul Chettri, Team Leader-Biodiversity Conservation and Management at ICIMOD, was based on the regional synthesis report of pre-feasibility country-level assessments of the BSL carried out by China, India, and Myanmar with support from ICIMOD. The regional synthesis tentatively defined the target area of the BSL, considering clusters of adjoining national PAs and the areas surrounding them. It offered an analysis of resource status and trends including conservation challenges, implications of climate change impact on the landscape, gaps in knowledge, and priority actions to build cooperation for implementing regional conservation initiatives in the BSL. Annex 4 provides the highlights of pre-feasibility studies in the member countries.

During his presentation, Dr Chettri highlighted that although the current focus of the BSL revolves around the eight PAs, formal boundaries for the BSL are yet to be determined and require consultations with each country. Elaborating on impressive new species discoveries in the eastern Himalayas, Dr Chettri pointed to the urgent need to inventory the biodiversity of the entire BSL, assess the impact of various drivers of change on biodiversity, and understand the value and significance of PAs in protecting the unique biodiversity in the landscape. In the BSL, the ecosystem approach, as advocated by the CBD, can't be ignored, and enhancing collaboration among BSL member countries is a priority. He further stated that the development of a regional cooperation framework will strengthen policy and institutional support to enhance collaboration among member countries for research and knowledge exchange and information sharing.

Revisiting the Tengchong consultation

The Regional Experience Sharing Consultation on the Landscape Approach to Biodiversity Conservation and Management in the Eastern Himalayas was organized in Tengchong County, Yunnan Province, China, 24-28 May 2009 was the first consultation between China, India, and Myanmar on the BSL. For details on the consultation, please visit: <http://www.icimod.org/?q=284>.

During the presentation on the elements of the Tengchong consultation, Ms Bandana Shakya, Biodiversity Analyst at ICIMOD, explained the context behind the consultation as an important platform for HKH member countries to share their respective experiences in implementing the landscape approach for biodiversity management as well as a way to promote the ecosystem approach advocated by the CBD. Presenting the highlights of the Tengchong consultation, Ms Shakya pointed out that the consultation provided motivation for BSL member countries to identify the immediate conservation interventions needed for the landscape, and, as a result, pre-feasibility studies could be conducted. Prospects of developing habitat connectivity among the existing PAs in the three countries and options for supporting community-driven conservation interventions were indentified. The consultation gave the countries an opportunity to identify transboundary issues and already existing means and platforms for collaboration. Some of the action points decided upon during the consultation have been achieved and for some, it was hoped that the second consultation in Myanmar would advance the process towards developing the long-term vision and direction for the regional BSL initiative.

Sharing of experience on transboundary cooperation in the Kailash Sacred Landscape

The Kailash Sacred Landscape Conservation Initiative (KSLCI) is a regional, collaborative programme to promote transboundary cooperation for biodiversity conservation and sustainable development in the greater Kailash region in China, India, and Nepal. This programme, initiated by ICIMOD with active participation by partner countries, was supported by UNEP and GIZ and follows ecosystem management approaches. Further details on the KSLCI can be read at www.icimod.org/ksl.

Dr Gopal Singh Rawat, Senior Scientist and Deputy Programme Manager-ECES at ICIMOD, made a brief presentation on the various iterative processes and phases of the programme. Specifying key features of the landscape, Dr Rawat elaborated on the objectives of the KSLCI and involved institutional networks from the

three countries. He further elaborated on the iterative process of formulating the resulting regional cooperation framework document which has now been endorsed by all three countries. Showing the relevance of the stepwise participatory process for the BSL, Dr Rawat highlighted that such a multi-level, participatory, process-led, ownership-based approach is the most appropriate means to advance the regional transboundary ecosystem management at the landscape level.

Draft strategic framework for the BSL and programme proposals for the National Science Foundation, China

In this joint presentation by Dr Nakul Chettri and Prof. Yang Yongping, Dr Chettri presented the draft framework, elaborating on the goals, objectives, and major programmatic components of transboundary biodiversity conservation initiatives for enhanced resilience to climate change in the BSL. He also elaborated on the major conservation issues and challenges prevalent in the landscape that require regional intervention. The draft framework as refined after group work can be seen in Annex 1.

The second half of the presentation was about a research proposal prepared for submission to the NSFC. Prof. Yongping elaborated on the activities included in the proposal such as literature reviews and capacity building of researchers, developing protocols to establish a regional knowledge base, joint expedition, and biodiversity inventory in north Myanmar and the GNNR (comprising a field expedition and specimen collection, species identification and biodiversity inventory preparation, vegetation and LULCC documentation, agrobiodiversity inventory, and documentation of traditional plant used), and molecular phylogenetics of regional keystone species such as *Muntiacusputaoensis*, *Budorcastaxicolor*, *Macacaassamensis*, *Sinonatrixpercarinata*, *Abiesdelavayi*, *Coptisteeta*, *Taxuswallichiana*, *Paris polyphylla*, hornbills, orchids, etc.

Group discussions

Group work and discussions were held to revisit the action points decided on during the Tengchong consultation and to refine and draft the elements of the strategic framework for promoting transboundary collaboration among the three member countries that share the BSL. Participants worked in three country groups and one regional group to discuss keywords in the vision and goals so as to reflect the elements of biodiversity management necessary for sustaining ecosystem services, ensuring sustainable use of biodiversity resources, addressing climate change impact and adaptation, and enhancing sustainable livelihoods for the well-being of people in the BSL, including women and minority communities. The group discussions also concretized objectives and defined broad actions under each objective.

Discussions ranged from identifying fundraising channels and mechanisms for coordination at the country level to brainstorming ideas to encourage regional cooperation. All the groups shared a common agenda of enhancing scientific understanding of the BSL through research on various landscape elements, ecosystem services and impacts of climate change. Table 1 summarizes elements from the group work.

Output of the consultation

The consultation produced a concrete, tangible output in the form of a draft strategic framework for developing the BSL which will serve as the basis for future collaboration between ICIMOD and the three regional member countries sharing the landscape: China, India, and Myanmar (see Annex 1).

Table 1: Highlights of group work on major components for regional cooperation

	Country group (China)	Country group (India)	Country group (Myanmar)	Regional group
Major components	<p>Research and capacity building</p> <p>Institutional coordination at all levels for conservation and development</p> <p>Exploring upstream-downstream linkages within the BSL and beyond</p>	<p>Developing an adequate knowledge base</p> <p>Socioeconomic research</p> <p>Enhancing livelihood opportunities</p>	<p>Prioritizing areas of intervention such as PA management, corridor development, basic research, policy strengthening, etc.</p> <p>Community development activities</p>	<p>Joint research to fill in scientific knowledge gaps</p> <p>Long-term environmental/ecological monitoring</p> <p>Sharing of data and information for generating regional outcomes</p> <p>On-the-ground action to influence changes in policy</p>
Elements for regional cooperation	<p>Starting with simpler and more feasible issues such as research and exchange by young scientists</p> <p>Sharing concepts to wider audiences</p> <p>Awareness-building</p> <p>Ambassador/agent of change concept</p>	<p>Long-term programmatic interventions</p> <p>Continuous learning and building upon joint wisdom</p>	<p>Improvement of policy directives for a transboundary approach</p> <p>Development of joint action plans</p> <p>Highlighting small contributions from communities</p>	<p>Consideration of different ownership regimes</p> <p>Development of regional cooperation framework programmatic approach</p>
Coordination mechanisms	<p>Establish a national-level steering committee to decide upon various working groups in relation to research and monitoring, as well as database and community development</p>	<p>Ministry of Environment and Forests' lead is crucial but wider stakeholder approach will be required to facilitate landscape-based interventions</p> <p>Need detailed discussion within the country</p>	<p>Department of Forestry, especially the NWCD to lead the process</p> <p>Inclusion of agencies such as INGOs, NGOs, universities, etc.</p> <p>Need to identify focal institute to lead the process</p>	<p>National focal institute to lead the process for national-level interventions</p> <p>A regional institute like ICIMOD to facilitate transboundary dialogue and support capacity building and knowledge sharing</p>
Probable funding tunnels	<p>CAS capacity-building fund</p> <p>NSFC collaborative research</p> <p>Small-scale cooperative projects with support from government</p>	<p>Government fund</p> <p>Programme proposals for collaborative research to tap international funding</p>	<p>Government of Myanmar</p> <p>Tapping into funds for regional action</p>	<p>Joint proposals to be prepared by ICIMOD and member countries to tap into programmatic funds</p> <p>Respective governments to support on-the-ground research and development studies</p>

Way forward

Recognizing the need for regional cooperation on transboundary landscape management under the ecosystem approach in conserving irreplaceable and unique biodiversity resources and enhancing the socioeconomic status of the local people dependent on the biodiversity resources in the BSL, and to further concretize the strategic action towards developing the regional initiative, the participants of the regional consultation representing India, China, and Myanmar and ICIMOD agreed upon the following points as a way forward.

- Prepare and share with all participants the draft report of the Nay Pyi Taw consultation by January 2012, and finalize the report.
- National consultation process to continue and by mid-2012, nominations for lead national institutes to spearhead the BSL initiative to be completed by each member country.
- ICIMOD will discuss with the nominated lead institutions and initiate a detailed feasibility report to obtain baseline information for the BSL by 2012 and designate the formal programmatic boundaries of the BSL.
- Programme and proposals for the BSL will be developed based on the input received during this workshop and will be shared with country focal points in the form of a concept note.
- At the next regional consultation for the BSL, to be held in India in 2012 or 2013, programme proposals and regional synthesis of the feasibility report will be shared, discussed and concretized.
- National partners will give continuity to their programmatic interventions in the areas of the BSL within their respective countries, and share knowledge and findings as much as possible.
- ICIMOD will organize a side event during the 11th Conference of Parties to the Convention on Biological Diversity in India in 2012 to highlight regional/transboundary landscape conservation initiatives in the HKH. If possible, the countries could come together to support an indigenous people's fair.
- Partners in the three member countries will provide relevant information to update the HKH Conservation Portal. The website can be accessed at www.icimod.org/hkhconservationportal
- ICIMOD will help the respective member countries access and share species checklists and occurrence information from the BSL using the HKH-BIF platform. The HKH-BIF hosted by ICIMOD promotes access to and sharing of biodiversity data from the HKH. Each country to nominate a person to support this species data-building process.

Annex 1: Draft Programme Framework for Promoting Transboundary Collaboration between China, India and Myanmar for the Brahmaputra-Salween Landscape

Vision

The natural ecosystems of the Brahmaputra-Salween (transboundary) Landscape (BSL) are safeguarded and sustained for its ecological integrity; there is improved flow of environmental services; socioeconomic development, and preservation of cultural heritage benefiting the livelihoods of people living in the landscape and downstream.

Goal

To maintain sustainability of ecosystems and enhance biodiversity conservation, adaptation to climate change and well-being of people through improved livelihood opportunities and resilience to climate change by developing and mainstreaming the regional cooperation framework

Objectives

- To enhance multidisciplinary research (including traditional, ecological knowledge) and the knowledge base on socioeconomic status, ecosystems and cultural diversity of the landscape including understanding drivers of change
- To address poverty and climate change threats through alternative livelihood options, capacity development and cross-border good practices and technology transfer among the local communities
- To strengthen the policy environment through national and regional policy analysis and to support transboundary cooperation by developing the regional cooperation framework and mainstreaming it in the national conservation and development agenda
- To maintain and improve the state of biodiversity and ecosystem goods and services by promoting traditional ecological knowledge and good practices to minimize ecosystem vulnerabilities, augment community development, and enhance ecosystem resilience

Expected outcomes

- Enhanced understanding of biodiversity resources, socioeconomic status, and how ecosystem goods and services are used by the participating member countries and conservation partners for effective management of the landscape
- Enhanced adaptive capacity of local communities with improved socioeconomic status and provision of options
- Improved policy environment among participating member countries and more vigour in collaborative activities
- Improved landscape with better socioeconomic development and ecosystem resilience capacity

Expected outputs and corresponding activities

- Collaborative inventory and assessment reports on biodiversity, the socioeconomic state of local people and ecosystem goods and services using common and standard protocols developed, promoted, and shared
 - Develop a set of standard protocols/methods and a trans-disciplinary research team for the landscape
 - Enhance the research and information sharing and monitoring capacities of the participating countries on ecosystem management, biodiversity assessment, biodiversity protocols, livelihood options and long-term ecological monitoring through joint research, trainings and exchange visits
 - Assess and understand the impact of various drivers of change affecting biodiversity resources and people's livelihoods including assessment of community perceptions and traditional knowledge on drivers of change, including climate change

- Carry out modelling-based and GIS/RS-based research to understand the trends of change, future projections, and impacts
- Innovative livelihood options adopted and adaptive capacity enhanced through participatory processes and livelihood enhancement interventions
 - Inventory, assess, and analyse anthropogenic activities within and outside the existing protected areas (including dependency on natural resources, bushmeat use, etc.)
 - Prepare and implement local-level conservation and development plans through participatory processes
 - Enhance capacity of local communities through training on alternative livelihood options, exposure visits and technology transfer as well as community-based biodiversity monitoring
 - Promote conservation-linked alternatives and innovative livelihood options/opportunities and build the resilience of communities dependent on the biodiversity resources
- Regional cooperation framework developed and mainstreamed in the national conservation and development agenda
 - Review and analyse existing statutory laws, policies and legislative documents, customary laws, and existing institutional mechanisms and highlight provisions that support transboundary biodiversity management
 - Initiate dialogue among policy and decision makers, institutions, local communities, and other stakeholders at regional, national, state, and local levels for consensus building and enhancing mutual cooperation for regional initiatives and delineating the BSL boundaries through a thorough feasibility study in each country
 - Revisit the existing management plans of each of the protected areas and identify commonalities
 - Organize consultative meetings to identify and define regional cooperation framework elements with clear guidelines for country-specific actions ensuring equitable access to and sharing of benefits from use of resources
 - Promote an enabling policy environment for transboundary cooperation by strengthening and developing formal and informal institutional setups, ministerial-level meetings, bilateral MoUs, etc.
- Maintained and improved biodiversity resources with better socioeconomic development and enhanced ecosystem resilience.
 - Develop conservation and local development strategies through consultative processes
 - Develop awareness-raising packages in various biodiversity management interventions including highlights from local knowledge
 - Promote management interventions to maintain and improve the natural landscape for their ecosystem goods and services by exploring mechanisms such as PES and REDD+
 - Develop strategies and action to reduce human-wildlife conflict and wild forest fires
 - Enhance climate change adaptation through promoting the ecosystem approach and the corridors and connectivity concept at the landscape level to increase ecological and socioeconomic resilience
 - Address local communities' vulnerability to changing climate and adaptive capacity through conservation-linked alternatives and innovative livelihood options/opportunities and build the resilience of communities dependent on the biodiversity resources

Annex 2: List of participants

China

Prof. Yang Yongping
Institute of Tibetan Plateau Research
Chinese Academy of Sciences
No. 18, Shuangqing Road
P.O. Box 2871, Beijing, China
Email: yangyp@itpcas.ac.cn

Prof. Jiang Xuelong
Kunming Institute of Zoology,
Chinese Academy of Sciences
32 Jiaochangdonglu, Kunming, Yunnan, China
Email: jiangxl@mail.kiz.ac.cn

Prof. Li Dezhu
Director, Kunming Institute of Botany
Chinese Academy of Sciences
132 Lanhei Road, Kunming
Yunnan 650204, China
Email: dzl@mail.kib.ac.cn

India

Dr L.M.S. Palni
Director
G B Pant Institute of Himalayan Environment and
Development
Kosi-Katarmal, Almora,
Uttaranchal
Email:psdir@gbpihed.nic.in; lmspalni@rediffmail.com

Dr Prasanna K. Samal
Scientist-in-Charge
G.B. Pant Institute of Himalayan Environment and
Development
North East Unit, Vivek Vihar,
Itanagar-791 113,
Arunachal Pradesh, India
Email: prasannasamal@rediffmail.com

Dr P.K. Mathur,
Sr. Professor & Scientist 'G'
Landscape Level Planning and Management
Department,
Wildlife Institute of India, P.B.18, Chandrabani,
Dehradun – 248 001, Uttarakhand, India
Email: mathurpk@wii.gov.in

Myanmar

U Win Naing Thaw
Director
Nature and Wildlife Conservation Division, Forest
Department, MOECA
Email: nwcdfdmof@gmail.com;
putoo911@hotmail.com

U Ye Htut
Deputy Director
Nature and Wildlife Conservation Division, Forest
Department, MOECA
Email: nwcdfdmof@gmail.com

U Ba Khin
Assistant Director
Forest Department
Myitkyina, Kachin State

Dr Kalaya Lu
Associate Professor
Myitkyina University
Kachin State
Email: centralmandalay@gmail.com

U Than Myint
Country Programme Director
Wildlife Conservation Society
Blk c-1, Aye Yeik Mon 1st Street, Ward 3,
Hlaing Township, Yangon
Email: wcsmp@myanmar.com.mm;
wcsthanmyint@myanmar.com.mm

Dr Saw Lwin
CEC Member
Myanmar Floriculturist Association
Email: orchid@mptmail.net.mm

Myanmar (Observers)

Dr Sann Win
Pro-Rector, University of Forestry
Yezin, Nay Pyi Taw

Dr Rosy Nay Win
Staff Officer, Forest Research Institute
Yezin, Nay Pyi Taw

U Aung Aung Myint
Staff Officer, GIS Section
Forest Department

U Nyan Hlaing
Staff Officer, GIS Section
Forest Department

U Phone Htut
Staff Officer, GIS Section
Forest Department

Daw Khin Thida Htun
Staff Officer, Forest Research Institute
Yezin, Nay Pyi Taw

Dr Naing Zaw Htun
Staff Officer
Nature and Wildlife Conservation Division
Forest Department
Nay Pyi Taw

U Thein Lwin
Park Warden
Hkakabo Razi National Park
Putao, Kachin State

ICIMOD

Dr David Molden
Director General, ICIMOD
Email: dmoldena@icimod.org

Dr Eklabya Sharma
Director Programme Operations, ICIMOD
Email: esharma@icimod.org

Mr Farid Ahmad
Head-SPM, ICIMOD
Email: faahmad@icimod.org

Mr Basanta Shrestha
Division Head-MENRIS, ICIMOD
Email: bshrestha@icimod.org

Dr Gopal Singh Rawat
Deputy PM-ECES, ICIMOD
Email: grawat@icimod.org

Dr Nakul Chettri
Team Leader-BCM, ICIMOD
Email: nchettri@icimod.org

Ms Bandana Shakya
Biodiversity Analyst, ICIMOD
Email: bshakya@icimod.org

Mr Kabir Uddin,
GIS Analyst, ICIMOD
Email: kuddin@icimod.org

Mr Rajen Upreti
Travel and Hospitality Officer, ICIMOD
Email: rupreti@icimod.org

List of officials from the NWCD who supported the preparation and facilitation of the regional meeting in Myanmar

U Shein Gay Ngai,
Email: nwcdfdmof@gmail.com

U Myo Khine,
Email: nwcdfdmof@gmail.com

U Seing Aung Min
Email: nwcdfdmof@gmail.com

Daw San San New
Email: nwcdfdmof@gmail.com

U Nay Myo Shwe
Email: nmshwe@gmail.com

Daw Aye Aye Nyein
Email: nwcdfdmof@gmail.com

Daw Khin Htay
Email: nwcdfdmof@gmail.com

U Nanda Win Aung
Email: nwcdfdmof@gmail.com

U Kyaw Sein Win Htun
Email: kyawseinwintun2008@gmail.com

Daw Su Sandar Aung
Email: ma.hsusandaraung@gmail.com

U Zaw Min Htun
Email: zawm.htoon@gmail.com

U Pyi Phyo Swe
Email: nwcdfdmof@gmail.com

Annex 3: Detailed programme structure

21 December 2011 (Day 1)

Venue: The Hotel Amara, Nay Pyi Taw

Arrival of the participants

Reception dinner hosted by the Ministry of Environmental Conservation and Forestry (MOECAF), Government of Myanmar

Time: 18:30 Venue: Dining room, Hotel Amara

22 December 2011 (Day 2)

Time : 08:30–16:30

Venue : Fantastic Hall, Hotel Amara, Nay Pyi Taw

Opening Session

Chair by His Excellency U Win Tun, Union Minister, MOECAF

08:30–09:00	Welcome to the participants of the experts consultation	
	Opening remarks by the MOECAF	H.E. U Win Tun, Union Minister, MOECAF
	Remarks by ICIMOD	Dr David James Molden, Director General, ICIMOD
	Photo session	
09:00–09:30	<i>Tea break</i>	

Technical Session I: Countrywide updates and pre-feasibility report

Chair by Dr Nyi Nyi Kyaw, Forest Department, Myanmar

Venue : Majestic Hall, Hotel Amara

10:00–10:15	Remarks by Myanmar	Dr Nyi Nyi Kyaw, MOECAF
	Remarks by China	Prof. De-Zhu Li, KIB
	Remarks by India	Dr L.M.S. Palni, GBPIHED
10:15–13:00	Overview of ICIMOD's transboundary conservation	Dr Eklabya Sharma, ICIMOD
	Presentation (China)	Prof Yang Yongping, ITPR
	Presentation (India)	Dr P.K. Samal, GBPIHED
	Presentation (Myanmar)	Mr Win Naing Thaw, Director NWCD
	Pre-feasibility report (ICIMOD)	Dr Nakul Chettri, ICIMOD
	Discussion	
13:00–14:00	<i>Lunch break</i>	

Technical Session II: Revisiting the Tengchong consultation and developing the strategic framework towards developing a regional cooperation framework

Chaired by Prof Li Dezhu, KIB, China

14:00–14:10	Elements of the Tengchong consultation and guidelines	Ms Bandana Shakya, ICIMOD
14:10–14:30	Discussion	
14:30–14:45	Regional cooperation framework process: Experience from Kailash Sacred Landscape	Dr Gopal S. Rawat, ICIMOD
14:45–15:00	Discussion	
15:00–15:30	Draft concept note for strategic framework for the BSL	Dr Nakul Chettri, ICIMOD, and Prof. Yongping Yang, ITPR
15:30–15:45	<i>Tea break</i>	
15:45–16:15	Discussion	
16:15–16:30	Group work formation and guidelines	Mr Farid Ahmad, ICIMOD

23 December 2011 (Day 3)

Time : 09:00-13:00

Venue : Majestic Hall, Hotel Amara, Nay Pyi Taw

Technical Session III: Discussion of concept note and future action

Facilitated by Mr Farid Ahmad, ICIMOD

09:00–10:30	Group work	
	Plenary presentation	
10:30–10:40	Regional group	
10:40–10:50	Discussion	
10:50–11:00	China group	
11:00–11:10	Discussion	
11:10–11:25	Tea break	
11:25–11:35	India group	
11:35–11:45	Discussion	
11:45–11:55	Myanmar group	
11:55–12:05	Discussion	

Technical Session IV: The way forward and concluding session

Chaired by Ms Basanta Shrestha, ICIMOD

12:05–12:20	The way forward	Dr Eklabya Sharma, ICIMOD
12:20–13:00	Remarks by country representatives from China and India	Five minutes for each country
	Closing remarks	Dr David J. Molden, ICIMOD
	Chair's summary	Mr Basanta Shrestha, ICIMOD
	Vote of thanks	Dr Gopal S.Rawat, ICIMOD
13:00–14:00	Lunch break	

Afternoon free/sightseeing around Nay Pyi Taw

Farewell dinner hosted by ICIMOD

Venue: Hotel Amara, Time: 18:30

Note:

1. ICIMOD staff and Myanmar participants were engaged in MTAP III Consultation in the afternoon
2. Participants from India and China were able to go sightseeing around Nay Pyi Taw

24 December 2011 (Day 4)

Depart for Yangon from Nay Pyi Taw

Annex 4: Highlights of pre-feasibility studies

The Tengchong consultation in 2009 provided a platform to highlight the need for a regional conservation initiative in the BSL. The participating countries, as they agreed in principle to promoting a regional approach for biodiversity management in the BSL, also identified the need for preliminary biodiversity and socioeconomic assessments. In 2010, with support from the MacArthur Foundation, ICIMOD facilitated baseline studies on the BSL in the three countries. The focal institutions involved in the studies were the Kunming Institute of Botany (KIB)-Chinese Academy of Sciences from China, the GB Pant Institute of Himalayan Environment and Development (GBPIHED)-North East Unit from India, and the Department of Forests from Myanmar. Prof. Yang Yongping, who was working for the KIB, and Dr P.K. Samal from the GBPIHED took the lead on initiating these small pre-feasibility studies in some of the protected areas in their respective countries. For Myanmar, the Department of Forests under the MOECAAF was supported by ICIMOD to carry out land use and land cover change analysis and to determine the prospects for corridor development between some of the protected areas within the BSL.

Pre-feasibility studies drew upon information from ground research and published literature, and it helped in:

Determining the rationale for the geographical extent of the BSL

The preliminary geographical focus, lying within the boundary coordinates of 95°51' to 99°31' longitudes and 28°99' to 25°01' latitudes, represents one of the last remaining tracts of intact natural forest ecosystems large enough to maintain a rich biodiversity in Southeast Asia. The current focus of the BSL is on a number of adjoining protected areas in the three countries, namely the Namdapha National Park and Tiger Reserve (NNPTR), Arunachal Pradesh, India, the Hkakabo Razi National Park (HNP), Kachin State, Myanmar, and the Gaoligongshan National Nature Reserve (GNNR), Yunnan Province, China, as well as some contiguous areas outside of them with the potential for corridor and connectivity development. The actual boundary delineation is subject to further discussion.

Realizing the ecological and socioeconomic diversity of the BSL

Topographic variability and climatic heterogeneity have created the appropriate conditions for biological diversification and adaptation in the BSL (McGinley 2008, Stotz et al. 2003), making it an area of exceptionally rich biodiversity. The landscape, which is at the juncture of Indo-Malayan, Palaeartic and Sino-Japanese biogeographic realms, has a high proportion of rare, endemic, vulnerable and endangered species. About 60 per cent of the flowering plants of the eastern Himalayas are confined to this region, and some flora and fauna communities date back to the Miocene. Many new species have also risen since the last glaciations (Nwe 2006). Vegetation in the BSL is extensive, comprised of tropical moist deciduous forests, tropical semi-evergreen forests, tropical evergreen forest of dipterocarps, subtropical evergreen forests, monsoon evergreen broad-leaved forest, abandoned jhum forests, temperate broad-leaved forests, temperate coniferous forests, bamboo groves, hillock forests, riverbank side forests, pine and fir forests, mountain liverwort shrub, cold-temperate grassy marshland, meadows, prairie, subalpine forests, and alpine/subalpine scrub (Yang 2010, Armstrong 2003, Samal et al. 2010). Faunal diversity comprises Indo-Chinese and Palaeartic elements represented by a large number of globally significant mammals, ungulates, and bird species. Diverse ethnic communities with varied socio-cultural traditions such as the Han, Lisu, Bai, Dai, Yi, Hui, Chakma, Mishmi, Singpho, Nepali, Rawans, Dalong, and Taron are also part of the landscape (Samal et al. 2010).

Reviewing the existing biodiversity from protected areas

Comprehensive lists of recorded flora and fauna for the four protected areas revealed that GNNR has the highest number of seed plants (4,285 species), followed by NNPTR (835). The highest number of mammals (187), birds (490) and insects (427) were recorded in the NNPTR. The GNNR is equally rich in amphibians (122), reptiles (164), and birds (182). However, the review revealed that the HNP is poorly explored and has limited information on flora and fauna (Table 1)

Analysing changes in land cover types

Preliminary analysis on land cover types indicated continuous and intact forested areas between the protected areas with promising potential for developing corridors between the existing protected areas. However, there have been subtle changes in the protected areas of the landscape during the last decade. A substantial decrease in grasslands can be seen in the three protected areas but other land cover types have not changed much (Table 2).

Table 1: Enlisted species for flora and fauna from the four protected areas of the BSL

Name of taxon	NNPTR	MNP	HNP	GNNR
Seed plants	835	245	NA	4,285
Orchids	NA	231	NA	345
Mammals	187	143	26	43
Amphibians	22	12	NA	122
Reptiles	44	87	NA	164
Birds	490	332	311	182
Pieces	95	72	NA	NA
Insects	427	133	NA	NA

Table 2: Land cover analysis among the three protected areas in the BSL (2001-2010)

Land Cover	NNPTR		HNP		GNNR	
	2001	2010	2001	2010	2001	2010
Agriculture	344.3	340.2	6.2	3.0	12.5	13.9
Bare area	93.9	65.7	423.7	543.5	160.9	34.6
Broad-leaved forest	2,366.3	2,238.4	891.5	790.9	462.8	522.0
Grassland	217.1	10.3	753.3	336.9	615.7	158.5
Mixed forest	357.4	427.2	468.9	482.1	412.2	317.3
Needle leaved forest	197.9	146.3	475.8	369.3	582.35	523.4
Shrubland	181.6	133.8	813.0	782.7	7.0	9.4
Snow	1.9	358.9	480.6	1,003.8	871.2	496.1
Waterbodies	6.4	47.4	0.9	6.05	170.4	1,219.1

Identifying biodiversity management challenges

The true estimates of biodiversity of the landscape are yet to be determined as the data on biodiversity recorded from within the national parks does not accurately quantify biodiversity figures in the entire landscape. Several pristine areas outside PAs are yet to be surveyed for their biodiversity content. In addition, there is limited availability of published biodiversity data in the public domain to aid in analysis at the landscape level. Major threats to biodiversity include habitat fragmentation (as a result of infrastructure development, urbanization, clearing for agriculture, production of charcoal, conversion to pasture for livestock, intensified invasion of exotic species, and deforestation for timber and firewood); unplanned mass tourism (Stotz et al. 2003), illicit mining of minerals (gold and jade, including opium); illegal hunting and poaching; and the indiscriminate collection of resources for traditional medicinal purposes. Convincing impoverished people in the region that conservation of natural resources is more important for their livelihood than economically productive trade is a challenging task (Rowe 2005).

Exploring issues of climate change

The climate change vulnerability assessment of mountain ecosystems in the eastern Himalayas (Tse-ring et al. 2010) indicate relatively lower vulnerability in the BSL given the amount of forest cover, the human population, and the ability of ecosystems to regenerate and provide adaptive options to communities to cope and adapt to change. Although there are extreme events such as landslides, flood, and drought, and a rise in invasive species has been reported in alpine meadows and rangelands, the extent of climate change impacts on biodiversity resources compared to the influence from other drivers of change is yet to be fully researched (Yang 2010). As a long-term phenomenon, establishment of research stations to monitor climatic and ecological variables is essential to understanding the trends and impacts of climate change on the landscape.

Determining prospects of developing corridors and connectivity

In the BSL, there are several small areas or pockets of unique flora and fauna, often too small to be considered regular protected areas. These areas have the potential to maintain the ecological integrity of the landscape and provide protection for several landscape elements. Strengthening the conservation of existing parks and other priority sites outside protected areas through the establishment of habitat corridors and connectivity can maximize synergies between biodiversity conservation and community development initiatives in the landscape.

ICIMOD attempted a preliminary corridor identification analysis for the BSL based on habitat suitability models for two species: leaf deer and takin. Different GIS factors such as habitat patches, movement resistance, etc., were used to create habitat models. Habitat models helped assess the quality of habitat for the species within the study area, and served as the required cost layer for least-cost path and corridor analyses (Shakya et al. 2011). The assessment revealed that the two species have a contiguous habitat across two protected areas, the NNPT of India and HNP of Myanmar, and there is great potential to connect the two protected areas through corridors. While takin preferred sub-alpine and alpine areas, leaf deer preferred temperate forested areas. Interestingly, while trying to identify the corridors for both species, a suitable broader connectivity covering both the sub-alpine and alpine areas and temperate forested areas was found. Hence, while considering the development of corridors, the analysis suggested covering both the ecological or vegetation zones (Figure 1). This preliminary study provides important insight into the significance of habitat connectivity between the protected areas and those lying outside their borders. In the BSL, the prospects of developing corridors complemented the existing proposal of widening the extent of protected areas in the three member countries.

Identifying transboundary issues

Transboundary fires in the landscape have caused a great loss in human lives and biodiversity in last two decades. Strong transnational coordination and cooperation is essential to effectively deal with the issue. Similarly, there is ample evidence of a cross-border timber trade which needs urgent attention and mutual intervention at the regional level to understand and address the underlying causes of mass logging and mining.

Understanding the policy issues specific to implementing the landscape conservation initiative

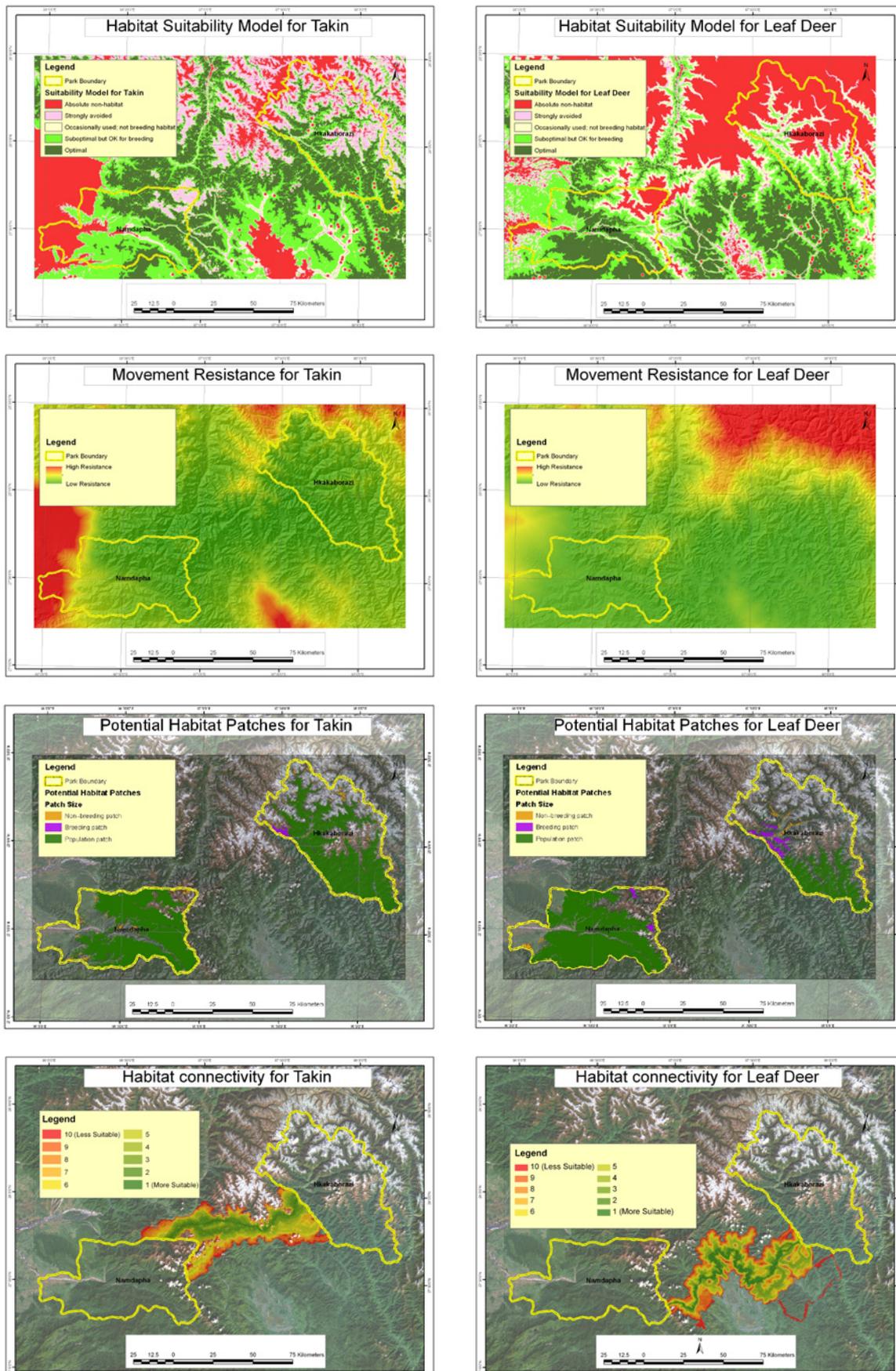
The establishment of protected areas by the three countries sharing the landscape has been an effective policy for biodiversity conservation. In China, strict implementation of some of the national forest protection programmes has significantly improved the conservation of local biodiversity. In 2006, the GNNR was listed as a UNESCO World Natural and Cultural Heritage Site, appending more restrictive regulations for biodiversity conservation and development. In Myanmar, laws do not clearly address issues of illegal logging, encroachment, extraction of forest products, and wildlife poaching. Myanmar's Forest Policy, Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law, and Forest Rules, do have provisions for promoting community participation in forest conservation, but implementation of legislation to address the human dimension of park management through community relations, conflict resolution, and stakeholder involvement in decisions about community forests and buffer zones are still in nascent stages. Across protected areas in the BSL, the issues of involving local communities in the management of protected areas and buffer zones, building the technical capacity of protected area staff, implementing a comprehensive land use plan, and amending existing wildlife laws to fulfil international treaty obligations have been well realized. In the BSL, addressing conservation issues transcends the political boundaries of individual countries and demands strong cooperation between governments. Some bilateral efforts are underway such as the formulation of a joint committee between the governments of Myanmar and Yunnan Province in China to combat illegal logging along the China–Myanmar border. However, there is an urgent need for a holistic regional framework to tackle common conservation concerns and to encourage participation of stakeholders from all walks of life (Skidmore and Wilson 2007).

Suggesting probable future action

The BSL provides an opportunity to conserve unparalleled ecological biodiversity while integrating the needs of diverse socio-cultural communities, therefore promoting the ecosystem approach to biodiversity management.

The CBD suggests using an integrated approach to conservation and management of extended landscapes which is defined not by boundaries but by ecological contiguity. It emphasizes the promotion of regional and transboundary

Figure 1: Maps showing habitat suitability, movement resistance, habitat patches, and potential corridors for takin and leaf deer between the Namdapha National Park and Tiger Reserve of India and the Hkakabo Razi National Park of Myanmar



collaborations, especially in mountain areas to significantly reduce the loss of mountain biodiversity (VII/27– Programme of Work on Mountain Biodiversity); the development of ecologically representative and effectively managed national and regional systems of protected areas wherever necessary, even stretching across national boundaries (VII/28 – Programme of Work on Protected Areas); and the sustainable use of components of biological diversity while respecting customary use of biological resources as well as utilization of indigenous knowledge and practices (Article 8(i) – Traditional Knowledge, Innovations and Practices). The BSL offers an opportunity to promote the implementation of decisions of the CBD.

There are immense opportunities for knowledge development on areas such as phylogeny and evolution, phenology, habitat use and population dynamics, molecular systematics, climate change adaptation, ecosystem services assessment, socioeconomic and policy assessment, etc., thereby enhancing collaboration among BSL member countries to carry out collaborative interdisciplinary research.

Sharing of data, information and knowledge on various aspects of biodiversity, drivers of change, challenges, status and trends is vital to promoting effective biodiversity management. Promoting open access to regional biodiversity data and information provides opportunities to facilitate cross-border learning, knowledge exchange, and information sharing.

The landscape approach requires collective action from multiple stakeholders, operating at all levels – local, national, regional, and global. There are several multilateral, global-level instruments and national-level strategies and action plans. At the regional level, it is necessary to develop a regional cooperation framework to strengthen policy and institutional support. A regional cooperation framework could facilitate the implementation of the landscape approach to biodiversity management in the BSL and help harmonize individual country action, thereby building synergies at the regional level to promote transboundary biodiversity management.

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International Centre for Integrated Mountain Development

GPO Box 3226, Kathmandu, Nepal

Tel +977-1-5003222 **Fax** +977-1-5003299

Email info@icimod.org **Web** www.icimod.org