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# संगजू SANGJU

Sacred Attempt for Natural Growth and Joyful Union

“संगजू”, जिसका उत्तराखण्ड की क्षेत्रीय भाषा में अभिप्राय “सहयोगी” या “मित्र” से है, भारतीय हिमालय में चयनित सीमापारीय भू-क्षेत्रों के संरक्षण एवं विकास पहल के तहत कार्यरत सभी संस्थाओं द्वारा किये जा रहे कार्यकलापों से सभी सरोकारों को अवगत कराने का एक प्रयास है। पत्रिका का प्रकाशन निरंतर होना है, जिसमें परियोजना से जुड़े सहयोगियों के अतिरिक्त, भू-क्षेत्र में कार्यरत अन्य संस्थाओं के कार्यकलापों को भी उचित स्थान दिया जाना है।

‘SANGJU’- The Newsletter is so named as the term in local dialect in Uttarakhand signifies the holy association or friendship. This is an attempt to make all concerned aware about activities and efforts contributed by various partners of Transboundary Landscape Conservation and Development Initiatives within Indian part of the Himalayan landscape.

The Newsletter is scheduled to be published regularly in which happenings within the landscapes, other than activities of project partners, will also get suitable place.

# संगजू SANGJU

## समन्वयक

डा. आर. एस. रावल

## निदेशक,

गोविन्द बल्लभ पंत राष्ट्रीय  
हिमालयी पर्यावरण संस्थान

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इस समाचार पत्रिका की सामग्री विभिन्न संस्थाओं से  
मिली सूचना पर आधारित है, अतः किसी भी त्रुटि या भूल  
हेतु गो.ब.प.रा.हि.प. संस्थान या संपादकगण जिम्मेदार नहीं  
होंगे, सामग्री की विस्तृत जानकारी हेतु सम्बंधित आयोजक  
संस्थान से संपर्क किया जा सकता है।

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समन्वयक की

कलम से



इस संस्थान द्वारा विगत कुछ वर्षों में भारतीय हिमालयी क्षेत्र के तीन चिह्नित क्षेत्रों में अन्य सहयोगी संस्थाओं की भागीदारी द्वारा सीमापारीय संरक्षण एवं विकास कार्यक्रम सफलता पूर्वक किये जा रहे हैं। ये गतिविधियाँ दीर्घकालिक संरक्षण व प्राकृतिक संसाधनों के सतत् उपयोग हेतु सामुदायिक भागीदारी एवं प्रकृति के साथ सामंजस्य बैठाने की विधि पर केन्द्रित है। इन परिदृश्यों की अंतर्निहित शक्तियों का उपयोग करते हुए दीर्घकालिक लक्ष्यों की प्राप्ति हेतु प्रयास जारी हैं। साथ ही, सीमापारीय परियोजनाओं जैसे कि हाई-लाइफ, के.एल.सी.डी.आई. तथा के.एस.एल.सी.डी.आई. से संरक्षण व विकास की क्षेत्रीय समस्याओं को जानने एवं सुलझाने का अवसर मिला है।

इसके अतिरिक्त यह प्रयास विश्व पटल पर सफलता की कहानियों को साझा करने एवं भविष्य की संभावनाओं को तलाशने का अवसर प्रदान कर रहे हैं। इस पत्रिका में सहभागी संस्थाओं द्वारा क्रियान्वित विभिन्न गतिविधियों, उदाहरणार्थ – ईको-टूरिज्म, होमस्टे, याक का संरक्षण, प्राकृतिक संसाधनों का सतत् उपयोग औषधीय पादपों एवं बड़ी इलायची की गुणवत्ता सुधार – वृहद खेती, इत्यादि को संक्षेपित किया गया है। शोध आधारित इन प्रयासों से सामुदायिक आत्मनिर्भरता को बढ़ावा मिलने के साथ-साथ प्राकृतिक संसाधनों के संरक्षण में भी योगदान मिला है।

जागरूकता व क्षमता विकास के विविध कार्यक्रमों से भविष्य में संरक्षण का लक्ष्य प्राप्त करने में सहायता मिलेगी। गत वर्षों की भांति सीमापारीय परियोजनाओं से जुड़ी भारतीय टीम वर्तमान क्रियान्वित कार्यों को “सन्गजू” के माध्यम से प्रकाशित कर रही हैं। यह पत्रिका चिह्नित क्षेत्रों में क्रियान्वित शोध एवं विकास कार्यों तथा प्राकृतिक संसाधनों के सतत् उपयोग आदि को अनुसरण करने का अवसर प्रदान करती है। इस पत्रिका में क्षेत्रीय विकास कार्यों, घटनाओं, लोकप्रिय लेखों एवं सफलतम किस्सों को समाहित किया गया है जो कि भागीदारी कर रहे अन्य राष्ट्रों हेतु भी एक उदाहरण है।

हालांकि, कोविड-19 महामारी के दौरान विभिन्न नई चुनौतियाँ विकास एवं शोध कार्यों हेतु उभरने लगी हैं। अतः यह उम्मीद की जाती है कि भागीदार संस्थान अपनी गतिविधियों में इस विषय को समाहित करने पर विचार करेंगे। मेरा सभी पाठकों से अनुरोध है कि वे “सन्गजू” की गुणवत्ता में सुधार हेतु अपने सुझाव साझा करें।

M0 vki0 , 10 jkoy

निदेशक

गोविन्द बल्लभ पंत राष्ट्रीय हिमालयी पर्यावरण संस्थान  
समन्वयक, टी.बी.एल. भारत

FROM  
COORDINATOR'S

PEN



During last few years, this institute, with the active participation of other partners, has successfully carried out conservation and development activities in three identified transboundary landscapes (TBL) in the Indian Himalayan Region. These activities have largely focused on ensuring long term conservation and effective use of natural resources following an approach of community participation and building synergy to live in the harmony with the nature. Efforts are underway to achieve long-term goals through capitalizing on the inherent strengths of these landscapes and partners. Implementation of transboundary projects (HI-LIFE, KLCDI, KSLCDI) have provided an opportunity to address issues of conservation and development through mutual efforts of country partners.

Additionally, these initiatives are providing an opportunity to share the success stories globally and explore the possibilities for future partnership. In this Newsletter, different activities e.g., eco-tourism, homestay, conservation of Yak and natural resources, commercial cultivation of medicinal plants and extensive cardamom cultivation and improvement, etc., undertaken across these landscapes by the partnering institutions have been summarized. These R&D based initiatives have helped in promoting community livelihoods and contributed to conservation of natural resources.

The awareness and capacity building of the community, through various programs, will help in achieving conservation goals in the future. Like the previous years, the Indian team associated with TBL is currently publishing cross-border work through “Sangju”. This magazine provides a platform for articulating impacts of the R&D happenings in these landscapes. The newsletter contains regional development works, events, popular articles and success stories, and establishing an example for all partner countries.

However, new challenges for R&D intervention have started emerging in the time of the Covid-19 pandemic. It is expected that partner institutions will bring in his perspective in their program schedule. All the readers are requested to share their suggestions for improvement in the content of “Sangju”.

Dr. R.S. Rawal

Director

G.B. Pant National Institute of Himalayan Environment  
Coordinator, T.B.L. India



## Strengthening TBL Initiatives Khangchendzonga Landscape (KL)

### Mainstreaming Landscape Approach for Promotion of Sustainable Community Based Tourism in the Khangchendzonga Landscape in India: Linking Livelihoods with Nature Conservation: Supportive Initiative

कंचनजंगा भू-क्षेत्र संरक्षण एवं विकास परियोजना के अन्तर्गत जैविक खेती की महत्ता को ध्यान में रखकर उसके विस्तार एवं जैविक खेती आधारित जीविकोत्पार्जन विकल्पों हेतु विभिन्न गतिविधियों का आयोजन किया गया। इन गतिविधियों से इस भू-क्षेत्र में जैव विविधता एवं प्राकृतिक संसाधनों के संरक्षण एवं विकास को बल मिलेगा।

This project is supported by National Mission on Himalayan Studies (NMHS) on MoEF&CC, GoI focuses on sustainable community based tourism in Khangchendzonga landscape (KL) India for improving livelihoods and conservation in an equitable manner. Project is implemented by Sikkim Regional Centre (SRC) of NIHE across three pilot sites of KL-India i.e., Dzongu- part of Khangchendzonga Biosphere Reserve; Barsey-Singalila sharing part of Darjeeling and west Sikkim linking transboundary area with Nepal and Bandapani-foothill range connected with Bhutan boarder. The partner Institutions include, The Mountain Institute (TMI)-India, Gangtok; Ecotourism Community Organization Society for Sikkim (ECOSS), Gangtok; Mutanchi Lom Aal Shezum (MLAS), Dzongu and Himalayan Nature and Adventure Foundation (HNAF), Siliguri.

### Formalizing Khangchendzonga Landscape Yak Network: Promoting Transboundary Cooperation on Yak Value Chain Policy Dialogue

याक कंचनजंगा भू-क्षेत्र का एक महत्वपूर्ण पशु है। लेकिन हाल के कुछ वर्षों में आधुनिकरण के कारण याक पालन से जुड़ी गतिविधियाँ तथा उत्पाद निर्माण उदासीनता की कगार पर हैं तथा इसे जीवंत बनाये रखने हेतु कंचनजंगा भू-क्षेत्र के भारतीय भाग के साथ-साथ सीमापारीय सम्पूर्ण भू-क्षेत्र (भारत, भूटान तथा नेपाल) में विभिन्न प्रयास किये जा रहे हैं। इन गतिविधियों से सम्पूर्ण भू-क्षेत्र में याक के संरक्षण एवं विकास को बल मिलेगा।

A field visit-cum-interaction among KL team from Nepal and India was organized from 30 March to 7 April 2019 in Bhutan to promote transboundary cooperation on Yak value chain. Various objectives include: (i) solicit input to finalize the draft Yak policy brief so that the document will be owned by all the three KL member countries, (ii) share best practices on Yak value chain, particularly in mainstreaming Yak development within the local and national plans, and (iii) achieve common understanding on formalizing KL Yak Network. The follow-up agreed during the meeting were to (i) strengthen efforts for transboundary partnerships by formalizing common platform “Yak Network” by herders from Bhutan, India and Nepal, (ii) expedite formalizing Yak genetic exchange mechanism and implement exchange programmes, (iii) strengthen transboundary Yak festival to foster people to people connect, advocacy to draw policy attention, and (iv) celebrate rich traditions and culture of Yak farming in the KL.



Meeting of KL delegates with Dasho Rinzin Dorji, Secretary, MOAF Bhutan

## Mainstreaming Transboundary Yak Festival as Part of Khangchendzonga Yak Network: Transboundary Yak Festival

नेपाल द्वारा तृतीय पंचथर याक महोत्सव का आयोजन किया गया। जिसमें तीनों देशों भारत, नेपाल, भूटान द्वारा प्रतिभाग हुआ। साथ ही प्रतिभागी देशों के स्थानीय समुदायों के मध्य पारस्परिक सहयोग हेतु मंथन किया गया। ताकि भविष्य में याक के संरक्षण एवं संवर्धन हेतु उचित प्रयास किये जा सकें।



3<sup>rd</sup> Panchthar Yak festival 2019 under KLCDI

The trans-boundary Yak Festival was organized under the KLCDI at Phalelung, Panchthar, Nepal (April 13-14, 2019). The 3<sup>rd</sup> Panchthar Yak festival, 2019 aimed to prioritize Yak value chain development among three member countries (India, Nepal, Bhutan). Dialogue was held among Yak herders and local governments to demonstrate ownership for the sustenance and promotion of Yak and Yak product-based value chains. At the landscape level, the Yak festival provided a good platform for fostering transboundary cooperation through people to people contact. With the participation of appropriate stakeholders from KL-member countries, the event provided a pathway for strengthening Transboundary Yak Network. Participants of the three-member countries (Bhutan, India and Nepal) took an active part in the two days programme and learned the value of Yak and its cultural entity.

## 4<sup>th</sup> Annual Royal Highland Festival 2019 at Laya, Gosa, Bhutan

कंचनजंगा सीमापारीय परियोजना के तहत भूटान में याक प्रजाति के आनुवंशिक सुधार, याक को बढ़ते पर्यटन बाजार से जोड़कर सम्पूर्ण भू-क्षेत्र (भारत, भूटान तथा नेपाल) में आजीविका के अवसरों को खोजने हेतु जागरूकता कार्यक्रम का आयोजन हुआ।

The Ministry of Agriculture and Forest, Royal Government of Bhutan as nodal agency for ICIMOD in Bhutan, and as main implementing partner for KL organized the Royal Highlander Festival 2019 at Laya, Gasa, Bhutan in coordination with ICIMOD from 22 to 25 October 2019. The main objectives of the event were to (i) provide platform for KL stakeholders from three member countries to strengthen transboundary cooperation and collective actions in support of sustainable Yak management (genetic improvement, fodder production, Yak tourism linkages, product diversification and market linkages), (ii) highlight the significance of the Yak herding and their way of life to the country's social, economic and ecosystems, well-being, and (iii) contribute in preserving and strengthening the unique culture, arts and crafts of the highlanders. The event helped in developing better understanding of the technical know how about the available knowledge on Yak conservation through interactions among the three member countries, knowledge



exchange and strengthen collective actions on sustainable Yak production and strengthening Transboundary Yak Network at the larger HKH level. The event also helped in contributing towards exploring & promoting alternative livelihood opportunities through promoting Yak based industry and linking to the growing tourism market and raising awareness among herders to recognize Yak and Yak herding systems as an important part of bio-cultural heritage of the region.



## HKH Yak Network in the Third Pole - Special Session

ICIMOD, Nepal organized a session on “Hindu Kush Himalayas (HKH) Yak network” in the Third Pole, in Pokhara, Nepal on November 9, 2019. The main purpose of the event was to (i) discuss the challenges and opportunities of sustainable Yak development in the HKH, (ii) share experiences on innovations, technology and cooperation in Yak rearing in the region, and (iii) come up with a way forward for establishing a HKH Yak network. A total of three participants representing KL-India (member of Yak herding community north Sikkim, Department of Animal Husbandry, Livestock, Fisheries and Veterinary Sciences, North Sikkim and KLCDI-India, GBPNIHE, Sikkim Regional Centre) participated and presented the status and future prospects of Yak rearing in KL-India.



KLCDI-India Team with Former Prime Minister of Nepal (Shri Pushpa Kamal Dahal - Prachand) and Participants from HKH Countries





## Large Cardamom Value Chain in the Khangchendzonga Landscape: Exploring Opportunities for Transboundary Collaboration

Regional Workshop

सिक्किम राज्य बड़ी इलायची की खेती हेतु विश्व प्रसिद्ध है। वर्तमान में इसकी खेती से जुड़े किसान विभिन्न चुनौतियों का सामना कर रहे हैं। जिनमें बड़ी इलायची का बाजार भाव, उत्पाद एवं उत्पादन तकनीक में कमी तथा अन्य फसलों के उत्पादन से मॉग में कमी आदि प्रमुख हैं। अतः भविष्य की योजनाओं के मद्देनजर अन्तराष्ट्रीय सहयोगी दलों भारत, नेपाल, भूटान के मध्य वार्तालाप हुआ जिसमें किसानों के हितों, बड़ी इलायची से संबंधित विभिन्न चुनौतियों एवं मुद्दों पर वैज्ञानिक दृष्टि से सुधार हेतु सहमती बनी।

A two-days regional workshop on 'Exploring opportunities for trans-boundary collaboration on large cardamom value chain in KL was organized in Phungling, Taplejung, Nepal during 22-23 May, 2019. The objectives of the workshop were (a) cross-country learning and up-scaling the successful interventions made on large cardamom, and (b) to develop a common understanding among Bhutan, India and Nepal to address common challenges including the market price fall due to increased competition with other varieties of cardamom. More than 30 participants from Bhutan, India, and Nepal, two Additional Directors from the Department of Agriculture, Govt. of Sikkim, one large cardamom farmer from KL-India and Investigator KLCDI-India from GBPNHIE, SRC joined the workshop. The workshop provided an opportunity to learn from each other about the challenges and issues related to large cardamom. All participants agreed that scientific knowledge on chemical characteristics, usage and end market of the large cardamom is inadequate. The group also agreed to work towards a roadmap and contribute to promote large cardamom as a regional niche product with some short, medium and long-term actions on the basis of the result from the group discussion.



Participants from KL Partner Countries in a Regional Workshop on Yak

## India-ICIMOD Partners' Day Celebrated in Sikkim, India

The India-ICIMOD partner's day event and Board of Governors meeting were held at Gangtok, Sikkim India on 14<sup>th</sup>-15<sup>th</sup> September 2019. The GBPNHIE facilitated and coordinated this event. The Secretary MoEF&CC, Govt. of India, who formally represents India on the ICIMOD Board of Governors, Chaired the Board during 2018-2019. The purpose of this event was to bridge science - policy - practice and provide a regional platform where policymakers, experts, planners and practitioners can exchange ideas and perspectives towards the achievement of sustainable mountain development. The target audience of the event included high-level officials of the Government of India, Chief Minister Government of Sikkim Board of Governors and Support Group members of ICIMOD and potential partner institutions in India such as government agencies, research and academic institutions, NGOs, etc. During the event, various activities of Khangchendzonga Landscape Conservation and Development Initiative (KLCDI) India were showcased and appreciated by Hon'ble Chief Minister, Shri Prem Singh Golay, Govt. of Sikkim as a Chief Guest of the event and other policymakers.



## Kailash Sacred Landscape (KSL)

### Tourism without Borders - Promoting Cross-Border Collaboration between India and Nepal

के.एस.एल.सी.डी.आई. परियोजना के तहत नेपाल व भारत के मध्य व्यापार एवं पर्यटन हेतु भविष्य में संभावनाओं को बढ़ाने हेतु क्रॉस-बॉर्डर पर्यटन कार्यक्रम का आयोजन हुआ। इस कार्यक्रम का उद्देश्य भारत एवं नेपाल के प्राकृतिक एवं सांस्कृतिक आयामों को पर्यटन से जोड़कर भविष्य की संभावनाओं को तलाशने का था। इस पहल द्वारा दोनों देशों के मध्य व्यापार, पर्यटन एवं सांस्कृतिक विचारों का आदान प्रदान हुआ। जो क्षेत्रीय विकास एवं स्थानीय समुदायों के क्षमता-विकास में सहायक होगा। साथ ही, दोनों देशों के प्रतिनिधियों ने उत्तराखण्ड राज्य के धार्मिक पर्यटन-चार धाम एवं नेपाल के साहसिक टूरिज्म को आपस में जोड़ने पर बल दिया।

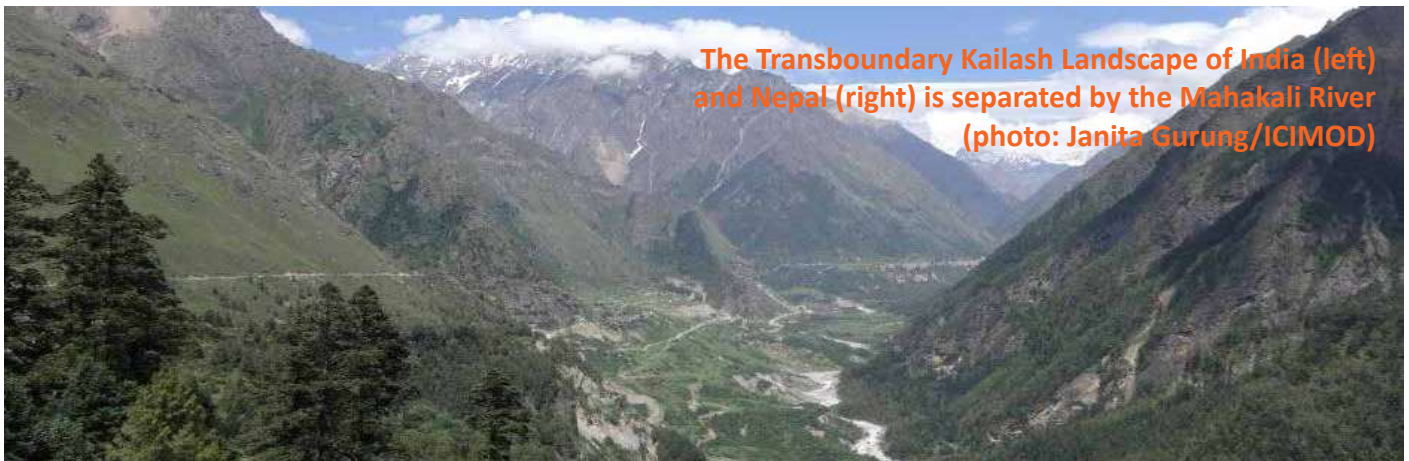
Tourism of both Uttarakhand-India and Sudurpaschim-Nepal is linked with shared values of nature-culture and prosperity. The prosperity narrative, in particular, is important for both governments in order to reduce poverty through increased jobs and income. Furthermore, the impact of tourism on foreign exchange earnings and expansion of other sectors along the value chain, such as agriculture, handicrafts and transportation, makes it a powerful medium to reduce poverty and increase prosperity. In both Uttarakhand and Sudurpaschim Nepal, tourism is hence considered a priority sector to bring about accelerated economic growth.

In order to harness the common natural and cultural heritage, economic linkages and future prospects in trade and tourism, the KSLCDI in collaboration with PHD Chamber of Commerce and Industry (PHDCCI)-Uttarakhand Chapter organized a cross-border dialogue between Uttarakhand-

India and Sudurpaschim-Nepal in Dehradun, Uttarakhand on September 9, 2019. Delegates from India represented the Uttarakhand Tourism Development Board and PHDCCI, while Nepal was represented by the Ministry of Industry, Tourism, Forest and Environment (MoITFE) of Sudurpaschim Province and Nepal Tourism Board (NTB).

Delegates from both countries engaged in a healthy and open discussion to inform each other about the status of tourism in their respective states and the potential for co-developing and promoting cross-border tourism products. The strengths and competitive advantage of tourism products of each country were recognized, with Nepal leading in the field of adventure tourism and Uttarakhand in religious and heritage tourism. Both parties stressed on the need to develop common and complementary tourism products across the border. The Nepal delegates prioritized the development of transboundary tourism corridors focusing on niche products such as Mahabharata Circuit, Pashupatinath to Kedarnath and Char Dham. The Indian delegates stressed the need to develop 'exotic' tourism circuits focusing on culture, religion (Shiva Circuits), culinary, nature (rhododendron) and adventure-based tourism (including rafting, trekking and biking).

To enable cross-border tourism product development and promotion, delegates realized the need to address bottlenecks linked with connectivity, capacity building, marketing and regional collaboration. Research, development and knowledge management were also recognized as priority topics for cross-border tourism development.



The Transboundary Kailash Landscape of India (left) and Nepal (right) is separated by the Mahakali River (photo: Janita Gurung/ICIMOD)



## Kailash Confluence – (2019) - Reviving Connections for a Sustainable Future

वर्ष 2019 में “कैलाश समांगम” का आयोजन नेपाल के भू-क्षेत्र में हुआ, इसका उद्देश्य सांस्कृतिक, पारंपरिक नृत्य-कला, वेशभूषा आदि के प्रदर्शन द्वारा पर्यटन को बढ़ावा देने हेतु भविष्य की संभावनाओं को तलाशना था। प्राचीन काल से ही क्षेत्रीय “रंग-समुदाय” अपनी सांस्कृतिक एवं पारंपरिक कलाओं को विभिन्न मंचों द्वारा प्रदर्शित करता आया है तथा विश्व-विख्यात है। साथ ही, इस “कैलाश समांगम” द्वारा समुदाय विशेष की पारंपरिक एवं सांस्कृतिक विरासत को विश्व पटल पर लाना एवं सामाजिक दायरे में बढ़ोत्तरी हेतु प्रयास करना था।



Rung Community  
Participants from India  
(Photo: Jitendra  
Bajracharya/ICIMOD)

Cultural Program at  
the Kailash Confluence  
Event (Photo: Jitendra  
Bajracharya/ICIMOD)



The first iteration of ‘Kailash Confluence’, a cross-border festival for Humla District, Nepal and Pulan County, China, was held in September 2018. Held in the district’s stunning Limi Valley, it contributed to reviving the cross-border connect between the two places. The Kailash Confluence featured traditional music and dance from the different communities within Namkha Rural Municipality. This year, the event was also participated by members of the Rung community from Dharchula (India) and Darchula (Nepal). The Rung community share a history of trans-Himalayan trade with the highland communities of Humla and Pulan County, with a number of families continuing to engage in transboundary trade in the region. In 2019, the Kailash Confluence was held in Yalbang, the administrative centre of Namkha Rural Municipality in Humla District, Nepal within the Kailash Sacred Landscape. Organized by Namkha Rural Municipality, with support from Nepal Tourism Board, the Association of Kailash Tour Operation in Nepal and KSLCDI, the event aimed to celebrate the region’s shared culture, history and economy while fostering transboundary trade and tourism in the region.

## Workshop on Leveraging the World Heritage Convention for Transboundary Conservation in the Hindu Kush Himalaya

The transboundary landscapes are subsets of larger trans-Himalayan transects, where ICIMOD and its partners gather scientific information and strengthen interventions to promote conservation and management of landscapes with ecological and socio-cultural significance. ICIMOD has identified six transboundary landscapes (Hindu Kush Karakoram Pamir, Kailash, Everest, Khangchendzonga, Far Eastern Himalaya and Cherrapunjee-Chittagong), with the aim to enhance socio-ecological resilience to environmental change. A workshop was organized at Kathmandu, Nepal from 30–31 May, 2019 to better understand the status of World Heritage Site (WHS) in the HKH with special reference to the transboundary landscapes, identify the gaps and discuss the way forward for nominating potential of WHS in the region. The specific objectives of the workshop were to (i) Develop a better understanding of the WHS nomination process, (ii) Identify gaps on the current status of WHS in the HKH, (iii) Explore potential WHS with global significance and outstanding universal values in the HKH region with special reference to existing landscape initiatives: Landscape Initiative for HI-LIFE, HKPL, KSL, KL, and (iv) Prepare a roadmap for nominating potential WHS in the HKH. As a result of the deliberations held, a roadmap with two pathways was developed as the way forward: Wild Heritage pathway and ICIMOD path. Proposed activities for Wild Heritage pathway included the workshop proceedings, draft status and potential WHS, and presentation of case studies from the HKH at global forums such as the World Parks Congress and the CBD. A report on the status of current WHS, gap analysis and identification of potential WHS was one of the key outputs in the roadmap. ICIMOD pathway included country consultations and agreement for nomination of transboundary landscapes and nomination process. A report on the current status of WHS, protected area coverage, gap analysis, and identification of potential WHS in transboundary landscapes of the HKH were also identified as important milestones.



## Prakriti Ahwaan - (2019) - A Community Cross-Border Forum to Conserve Biodiversity in the Kailash Sacred Landscape

“प्रकृति आह्वान” 2019 के तहत सीमापारीय भू-क्षेत्र में जैव विविधता संरक्षण हेतु मन्थन इस उद्देश्य से किया गया कि सीमापार के प्रतिनिधि प्रतिभागी एक दूसरे से अपने अनुभवों का आदान प्रदान करें। इस मन्थन में भू-क्षेत्र के चिन्हित स्थानों पर प्राथमिकता के आधार पर जैव विविधता प्रबन्धन हेतु कार्य बिन्दुओं पर सहमति बनी।

Nature recognizes no political boundaries. The Indian and Nepali region on either sides of the Mahakali River - a geographical entity separating the two countries in the west – share similar cultures and ecosystems. Moreover, many issues relating to resource management are also similar in the two countries – unsustainable harvesting of high-value medicinal plants, human-wildlife conflicts and illegal trade of medicinal plants and wildlife species, among others. In 2018, the KSLCDI brought together communities and local government representatives from Nepal and India in the headquarters of Darchula District, Nepal, to reflect on issues relating to transboundary biodiversity management. Special emphasis was placed on the sustainable management of the high-value yartsa gunbu, commonly known as the ‘caterpillar fungus.’ Participants then agreed to implement a number of actions that included managing waste, controlling fuelwood extraction, curbing wildlife poaching, and

banning livestock grazing during the collection season, and practicing rotational harvesting and inclusive yartsa gunbu collection and management.

As a follow-up of this event, the second transboundary forum was conducted in Pithoragarh, India from 14 to 16 December 2019 under the title ‘Prakriti Ahwaan’ (translating to ‘Nature Calling’ in Hindi and Nepali). Representatives of the communities and governments from the cross-border areas of India and Nepal shared their experiences and lessons learned from implementing the 2018 agreed-upon actions within their respective communities. In addition, pressing issues relating to nature-based livelihoods and biodiversity management – human-wildlife conflicts and wildlife crime, gender inclusive natural resource management and livestock grazing, particularly in high-altitude rangelands – were discussed and strategies collectively identified to address them.

The forum concluded with drawing out action points under priority areas for biodiversity management in the landscape. The participants appreciated this platform to share transboundary issues on biodiversity conservation and recommended for the outcomes of such discussions to be taken up during the official cross-border meetings held at the district level.



Participants of Prakriti Ahwaan Event in Pithoragarh (Photo: ICIMOD)



## Mainstreaming the Landscape Approach for Biodiversity Conservation and Improved Livelihoods and Ecosystem Health

कैलाश भू-क्षेत्र में विघटित व बंजर भूमि के पुर्नस्थापन हेतु पांच गाँवों में जन-जागरण व पौधरोपण तथा नर्सरी तकनीकी में क्षमता विकास हेतु अनेक कार्यक्रम आयोजित किये गये। साथ ही कुल 188 लोगों को प्रशिक्षित किया गया।

GBP-NIHE organized various meetings and awareness programmes during 2019 in order to sensitize diverse groups

of stakeholders for restoration of degraded lands through plantation of multi-purpose species in selected sites of KSL. Total nine such training workshops across 5 villages in Pithoragarh district were organized. Also, a total of 188 people were provided with the knowledge of nursery raising, plantation and wasteland restoration techniques (Table 1).

S.N.	Date	Village	Block	Meeting purpose	Total participation (M=Male; F=Female)
1	15/06/2019	Naikina	Pithoragarh	<ul style="list-style-type: none"> <li>Sensitization workshop</li> <li>Need assessment</li> </ul>	16 (M-04; F-12)
2	18/06/2019	Naikina	Pithoragarh	<ul style="list-style-type: none"> <li>Sensitization workshop</li> <li>Need assessment</li> </ul>	27 (M-11; F-16)
3	19/06/2019	Digitoli	Pithoragarh	<ul style="list-style-type: none"> <li>Training on the plantation techniques and plantation activities</li> </ul>	32 (M-12; F-20)
4	23/07/2019	Naikina	Pithoragarh	<ul style="list-style-type: none"> <li>Training on the plantation techniques and plantation activities</li> </ul>	30 (M-15; F-15)
5	24/07/2019	Baans	Pithoragarh	<ul style="list-style-type: none"> <li>Sensitization workshop</li> <li>Need assessment</li> </ul>	12 (M-10; F-2)
6	08/08/2019	Pali	Gangolihat	<ul style="list-style-type: none"> <li>Sensitization workshop</li> <li>Need assessment</li> </ul>	25 (M-23; F-2)
7	08/08/2019	Chitgal	Gangolihat	<ul style="list-style-type: none"> <li>Sensitization workshop</li> <li>Need assessment</li> </ul>	12 (M-11; F-1)
8	09/08/2019	Digitoli	Pithoragarh	<ul style="list-style-type: none"> <li>Training on the nursery techniques and plantation activities</li> </ul>	4 (Male-4)
9	28/08/2019	Naikina	Pithoragarh	<ul style="list-style-type: none"> <li>Training on the nursery techniques and plantation activities</li> </ul>	30 (M-12; F-18)





## Field Orientation Workshop and On-Site Training for Promotion of Medicinal Plant Cultivation in Chaudas Valley

चौदांस घाटी में सामुदायिक आजीविका वृद्धि हेतु औषधीय पादपों के संरक्षण, संवर्धन हेतु प्रशिक्षण एवं पौध वितरण का कार्यक्रम प्रारम्भ हुआ। जिसमें किसानों को औषधीय पादपों के उत्पादन हेतु तकनीकी जानकारी प्रदान करने के साथ-साथ विक्रय हेतु विभिन्न सरकारी/गैरसरकारी योजनाओं से अवगत कराया गया। इसके अलावा विविध कार्यशालाओं के माध्यम से स्थानीय विविध हितधारकों को जैवविविधता के संरक्षण, औषधीय पौधों की खेती को बढ़ावा देने आदि संवेदनशील विविध विषयों पर जानकारी और सहयोग प्रदान किया गया। जिसके परिणामस्वरूप क्षेत्रीय सामुदायिक आजीविका में वृद्धि एवं आत्मनिर्भरता बढ़ेगी एवं हिमालयी जैव विविधता, प्राकृतिक संसाधनों के संरक्षण एवं संवर्धन हेतु समुदाय विशेष की भागीदारी सुनिश्चित होगी।

A field workshop conducted in Chaudas valley, Pithoragarh district to generate awareness and sensitize village people towards the conservation and cultivation of threatened medicinal plants. A total of 50 farmers from 6 villages namely Niyang, Sosa, Palankari, Pasti, Jaykot, Himkhola showed their interest in cultivation of *Allium stracheyi*, *Hedychium spicatum*, *Valeriana jatamansi* and *Cinnamomum tamala*. Institute distributed quality planting material of *Allium stracheyi*, *Hedychium spicatum*, *Picrorhiza kurroa* and *Valeriana jatamansi*. *Cinnamomum tamala* was planted in Pangla and Jaykot villages at lower elevation (900-1200 m). Thus, 2.5 ha land was brought under cultivation of medicinal plants of conservation importance through this activity.



On-Site Training and Workshops for Promotion of Medicinal Plant Cultivation in Chaudas Valley



## Voluntary Certification Scheme for Medicinal Plant Produce (VCSMPP)



Collaboration with Quality Council of India under Voluntary Certification Scheme for Medicinal Plant Produce (VCSMPP)

Towards certifying the medicinal plants produce, a training programme was jointly organized with Quality Council of India, New Delhi on Voluntary Certification Scheme for Medicinal Plant Produce at GBPNiHE, Almora (August 22, 2019). The aim of the workshop was to include farmers of the Chaudas valley (KSL region) under VCSMPP so that they get benefit while selling their produce. The following major points were discussed during the training: (i) certification of progressive farmers and authorizing their cultivated quality plant materials, (ii) promotion of medicinal plants sector in the Chaudas area to connect them with Central/State schemes, (iii) development of market linkages for selling of cultivated produce, (iv) combating the challenges regarding the quality, safety and efficacy of medicinal plants produce, and (v) sensitization of the diverse stakeholder groups through exposure visits and conducting training programs.

## Celebration of IDB-2019

जैव-विविधता दिवस (दिनांक 22 मई 2019) पर चौदांस घाटी (जिला-पिथौरागढ़) के विभिन्न छात्र-छात्राओं एवं किसानों को औषधीय पादपों की महत्वता एवं संरक्षण हेतु विभिन्न विधियों की जानकारी प्रदान की गयी। सभी प्रतिभागियों को औषधीय पादपों के संरक्षण मॉडल श्री नारायण आश्रम में भ्रमण कराया गया एवं विविध औषधीय प्रजातियों जैसे एलियम स्ट्रैची (जम्बू), एंजेलिका ग्लौका (चोरु), हेडिकियम स्पाईकेटम (वन हल्दी), ससुरिया कोस्टस (कूट) एवं वेलेरियाना जटामांसी (तगर) के संरक्षण हेतु किये जा रहे प्रयासों की जानकारी प्रदान की गयी। इसके अतिरिक्त प्रतिभागियों हेतु अनेक प्रतियोगिताओं का आयोजन किया गया।

Centre for Biodiversity Conservation and Management of the GBPNiHE celebrated International Day for Biological Diversity (IDB-2019) under the theme "Our Biodiversity, Our Food, Our Health" at Sri Narayan Ashram (SNA), Chaudas Valley, Pithoragarh. Total 52 diverse stakeholders (19 farmers, 31 students and 2 teachers) from GIC Pangu, GIC Makham Kailash and different villages of Chaudas area (i.e., Jaykot, Pangu, Sosa, Niyang, Pasti, Chalmachilanso, Dharpangu) participated in this programme. The aim of the programme was to create awareness among participants

towards mountain biodiversity and its supporting values for sustaining life. Various activities for the school students and farmers were carried out and exposure visit to demonstration and learning centre at medicinal plant gardens maintained at SNA was organized.



Celebration of IDB-2019 in Chaudas Valley

## Plantation of *Cinnamomum tamala* in Chaudas Valley

*Cinnamomum tamala* (Family Lauraceae; Common name Tejpat, Indian bay leaf; Trade name Tamalpatra) is an evergreen, moderate size monoecious tree species. The species is therapeutically and economically important and mostly found in shady moist habitats. Seedlings (3000 no.) of this species produced in the Surya-Kunj at GBPNiHE Almora were transferred to Pangla, Jaykot, Ghasku of Chaudas Valley (Pithoragarh) for large scale plantations. A total of 57 farmers planted *Cinnamomum tamala* in their agriculture land and degraded land of Van Panchayats (VPs).



Restoration of Degraded Land through Plantation of *Cinnamomum tamala* in Chaudas Valley

## Himalayan Biodiversity: A Decadal Journey of Transboundary Conservation and Development Initiatives – Lessons from the Hindu Kush Himalaya

### Side Event during Himalaya Matters in a Changing World

“हिमालया मैटरस इन चेन्जिंग वरल्ड” कान्फैरन्स के दौरान आई.सी.आई.एम.ओ.डी. काठमाण्डू द्वारा एक विशेष सत्र का आयोजन किया गया। सत्र के दौरान सीमापारीय संरक्षण व विकास पहल के तहत विगत दस वर्षों में मिली सीख पर मन्थन हुआ। इसके अन्तर्गत नेपाल व भारत के प्रतिनिधियों द्वारा विभिन्न कार्यों का उल्लेख व जानकारी साझा की गयी।

During the international conference on ‘Himalaya Matters in a Changing World’ organized by GBPNiHE in Almora, India (9-11 December 2019), ICIMOD Nepal held above special side event on December 10, 2019. The event was organized to share experiences on challenges and opportunities, and to explore areas for improvement on transboundary landscapes across the region. More than 35 participants



actively participated in the event. Partners from KSL, KL and HI-LIFE countries of India and Nepal attended the event. They included researchers, policy makers and practitioners across the region. Progress, challenges and opportunities in each of the three landscapes were presented. Partners from the three landscapes also shared their success stories as well as the challenges and opportunities they experienced while implementing the respective programs in the field. The conservation of flagship species, sharing and transfer of technologies and knowledge and regional cooperation on ecosystems management and livelihoods are some of the priority topics for the transboundary landscapes program.

Transboundary landscapes, one of the flagship programmes of ICIMOD, has been in operation since 2008 with the conceptualization of six transboundary landscapes considering the ‘Ecosystem Approach’ advocated by Convention on Biological Diversity (CBD). The transboundary landscapes programme aims to enhance socio-ecological resilience to environmental changes in the Hindu Kush Himalaya. Four transboundary landscapes are currently in operation (from west to east) - Hindu Kush-Karakoram-Pamir, Kailash, Khangchendzonga, and the Far-Eastern Himalaya. These landscape initiatives have been in operation for over a decade and have undergone different phases from planning to various stages of implementation.





## Transboundary Landscapes Program: Outlook and Synergy-Building for 2020 and Beyond - Regional Workshop

ICIMOD organized a regional workshop on 'Transboundary landscapes program: Outlook and synergy-building for 2020 and beyond' in Chitwan, Nepal, from 26-27 December 2019. For the first time since the implementation of the TBL Program, the event brought together key implementing partners from eight countries representing all five initiatives within the region: Hindukush Karakoram-Pamir Landscape, Kailash Sacred Landscape, Khangchendzonga Landscape, the Far-Eastern Himalaya Landscape and REDD+ Himalaya. During the workshop, the progress of each initiative was shared, along with the challenges and opportunities for implementation. The respective work plans for 2020 were finalized for each initiative. The outlook for 2020-2022 was also presented to the participants resulting in a consensus to bring regional dimensions and greater inter-disciplinarity within the programs.

The workshop was held at Chitwan National Park – Nepal's first national park which has experienced numerous successes and challenges in implementing conservation and development programs. The park is also adjacent to India's Valmiki Tiger Reserve, which provided the event with an opportunity to learn about Chitwan's experiences in transboundary conservation initiatives. This was achieved through sharing of experiences by representatives from the Park and their partner organizations, particularly the National Trust for Nature Conservation, along with field visits within the Park and its buffer zone.

Participants of TBL Outlook workshop in Chitwan, Nepal (Photo: ICIMOD)



Participants from China, India and Pakistan at the TBL Outlook workshop in Chitwan (Photo: ICIMOD)

## EVENTS AND ACTIVITIES Khangchendzonga Landscape

### Skill and Capacity Building on Homestay Steering and Management

कंचनजंगा लैंडस्केप में कार्यान्वित परियोजना के तहत तीनों देशों भारत, नेपाल एवं भूटान के मध्य क्षेत्रीय विकास, कौशल-क्षमता निर्माण, आजीविका वृद्धि हेतु प्रयत्न जारी हैं। इसी क्रम में तीनों देशों द्वारा चयनित गौरखा समुदाय एवं युवा-वर्ग को ईको-टूरिज्म से जोड़ने हेतु होमस्टे संचालन, गाईड का प्रशिक्षण, ईको-टूरिज्म के ऊपर जानकारी एवं प्रशिक्षण प्रदान किया गया। साथ ही, प्रशिक्षण कार्यक्रम के दौरान प्रतिभागीयों को अपनी सांस्कृतिक एवं पारंपरिक कलाओं, सांस्कृतिक धरोहरों के इतिहास आदि के ऊपर जानकारी प्रदान की गयी तथा विभिन्न जानकारियों को आगुन्तकों को समझाने हेतु प्रशिक्षण प्रदान किया गया।

Homestay management has always been a major focus area under the activities of KLCDI-India programme. To combat the decrease in the livelihood options in the pilot sites, developing ecotourism as a viable livelihood option was thought out. Thus, training on Homestay Management

### Skill and Capacity Building on Eco-tourist Guide

The recent scale and level of tourism development in the KL requires a stronger integrated approach with high local stakes. Community-based ecotourism provides an enabling platform that encourages greater community share and ownership with conservation hand-in-hand. The very critical success factor of community-based ecotourism (CBET) particularly, in the landscape invites advocacy from different stakeholders ranging from quasi-governmental and non-profit organizations to public-private sector and academic interests.

The skill development programme on “Eco-tourist Guide” for supporting and sustaining ecotourism in

and Steering was organized in Lingdem, Dzongu in which participants were identified stakeholders from the three pilot sites and Nepal and Bhutan. Participants included the homestay operators, ecotourism service providers like guides and self-motivated community people operating homestays. This training was collaboratively organized by the GBPNHE, Sikkim Regional Centre, Gangtok, Sikkim with partner organizations namely Mutanchi Lom Aal Shezum (MLAS), Dzongu; The Mountain Institute (TMI)-India, Gangtok; Himalayan Nature and Adventure Foundation (HNAF), Siliguri; Khangchendzonga Conservation Committee (KCC), Yuksam; Ecotourism Cell, Forest Environment and Wildlife Management Department (FEWMD), Songbing Tourism Development and Management Committee (STDMC), Lingdem-Lingthem GPU, Dzongu and ICIMOD Nepal under KLCDI-India programme supported by ICIMOD Nepal. A total of 51 participants consisting of 29 male and 22 female participated in the training programme. Various topics related to homestay steering, community-based ecotourism, maintenance and registration of homestays, sanitization, bed making, guest reception, host-guest interaction, etc were covered adequately by invited resource persons and experts.



Ecotourism Expert Mr. Renzino Lepcha during the Training Programme

the three pilot sites of KL-India was organized from 27-31 January 2019 in synergy with National Mission on Himalayan Studies (NMHS), Govt. of India sponsored project titled “Promotion of Sustainable Community Based Tourism in the KL: Linking Livelihoods with Nature Conservation” at Dzongu, pilot site of KL-India. The eco-guide experts from KCC, Mr. Chungda Sherpa and Mr. Chewang Bhutia, partner institutions (MLAS, Dzongu; TMI-India, Gangtok, and HNAF, Siliguri) and Ecotourism Cell, FEWMD, Govt. of Sikkim in collaboration with GBPNHE, Sikkim Regional Centre actively contributed to fulfill the training objectives (i) to promote community based ecotourism and strengthen local youth skills on





Participants during the Eco-tourist Guide Training Programme

eco-guiding for livelihood enhancement, (ii) to train and sensitize local youths towards environmental management and socio-cultural linkages for responsible tourism, and (iii) to promote stronger public-private partnerships for development of ecotourism (homestays, guides, etc). A total of 22 participants including 18 male and 3 female were trained on eco-guide for strengthening ecotourism services in three pilot sites of KL-India.

## Songbing Cultural Festival-2019: Showcasing & Promoting Lepcha Culture and Tradition

वर्ष 2019 में लेपचा समुदाय द्वारा “सौबिङ्ग पारंपरिक मेले” का आयोजन सिक्किम में किया गया। यह मेला लेपचा समुदाय को उनके सांस्कृतिक एवं पारंपरिक धरोहरों के प्रदर्शन का मौका देता है। लेपचा समुदाय द्वारा कार्यक्रम के दौरान पारंपरिक नृत्य-कौशल, खान-पान, वेश-भूषा, कृषि-उत्पादन, हस्तशिल्प आदि धरोहरों का प्रदर्शन किया गया। यह समुदाय प्राचीन काल से ही अपने पारंपरिक कलाओं एवं संस्कृति के लिए विश्व विख्यात है। इस मेले में शामिल होने हेतु बड़ी संख्या में देश-विदेशों से पर्यटक आते हैं जिस कारण यह मेला ईको-टूरिज्म, क्षेत्रीय-विकास एवं सामुदायिक आजीविका वृद्धि में महत्वपूर्ण योगदान देता आ रहा है।

“Songbing Cultural Festival” was initiated by GBPNIHE, SRC in the year 2017 under KLCDI-India programme in collaboration with the local partner Mutanchi Lom Aal Shezum (MLAS) and a local committee formed through KLCDI-India (i.e., Songbing Tourism Development and Management Committee). This festival is unique in terms of its process and purpose leading to promotion of ancient Lepcha culture and tradition through linking and promoting it with ecotourism. The festival offered a variety of traditional foods and beverages, local agricultural products, local handicrafts, cultural programmes and traditional games, etc to the visitors and tourists. The visitors and tourists experienced the “hot water bath” in the natural hot spring, which is situated in the village. Also, the visitors enjoyed the wilderness in the short trek upto Songbing cave.

Dr. R. S. Rawal, Director, GBPNIHE

and Mr. O.T. Lepcha, Advisor to Human Resource Development Department, Govt. of Sikkim inaugurated the Tourist Information Sign Board and attended the Songbing Culture Fest - 2019 as special guests. In addition, Dr. H. K. Badola, Advisor Hon'ble Chief Minister, Govt. of Sikkim, Dr. Rajesh Joshi, Head Sikkim Regional Centre of GBPNIHE, Dr. Anu Lama from ICIMOD and other participants, media persons and local people participated in the festival. During the cultural events, dissemination materials (Flyers/Folders/Dockets) of KLCDI-India were also released such as “Bamboo Crafts, Strengthening and Opportunity in Dzongu”, and “Khu-ree: a Traditional Lepcha Cousin-ingredients and Recipe”.

Top Left: Address by Director, GBPNIHE to the Community Peoples, Right: Lepcha, the Primitive Tribe of Sikkim in Traditional Attire, Bottom Left: Khuree: A Traditional Lepcha Cuisine, Right: Lepcha Folk Dance





## Training on Commercial Bamboo Craft-Making

With an aim to maintain and develop an interest in making bamboo crafts among the local people and to uplift the livelihood and skills of local bamboo craftsmen and artisans, a training on commercial bamboo crafts under KLCDI-India was organized by GBPNiHE, SRC in collaboration with local partner organization MLAS, Dzongu (October 8-14, 2018). A total of six beneficiaries (craftsmen and artisans) who had knowledge about traditional bamboo crafts making were identified along with other interested participants. Training on making of commercial bamboo products viz. Bulb cover, Coffee pack, LED light cover and Pen stand was given for the participants by resource person Ms Nimkit Lepcha, a professionally trained bamboo-based artisan. The locally



Participants learning the art of marketable bamboo craft

available bamboo species *Dendrocalamus hamiltonii* and *Ruh* (cane) were used to make these artifacts. These bamboo products have huge demand in the market and trained artisans are needed in order to fulfill the demands.

## Skill and Capacity Building on Extraction and Weaving of Nettle Fiber

स्वदेशी पारंपरिक शिल्प कला के संरक्षण एवं आजीविका वृद्धि हेतु क्षमता निर्माण कार्यशाला का दोंगजू (उत्तरी सिक्किम) में आयोजन किया गया। जिसमें बॉस हारा निर्मित काष्ठकला का प्रदर्शन, नैटल फाइबर को संग्रहित करने आदि का प्रशिक्षण स्थानीय महिलाओं को प्रदान किया गया।



Under the KLCDI programme, a skill development training programme was organized for value addition in local products for local women's group on handloom weavers by using local natural resources by conservation

of indigenous traditional art and craft to support livelihood through promoting the local products on tourism. This training programme was organized in two phases, at Lingdem Dzongu and facilitated by local partner organization Mutanchi Lom Aal Sezum (MLAs). The first phase training was organized for 15 members of women's

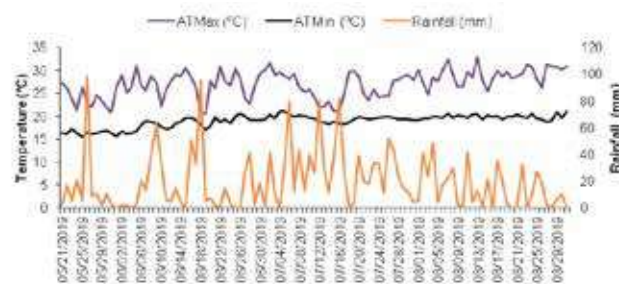


self-help groups (SHG) of Lingdem, Laven, Ruklu and Kayem villages of Dzongu pilot site (12 December 2018). The resource persons from Nom Panang village women SHG, imparted training on selection and cutting of stem of wild nettle, extraction the outer bark part, drying and storage methods of raw material. The second phase of training was organized for selected 15 SHG members on the weaving of nettle fiber and manufacturing of various marketable products (10-16 March, 2019). During the closing ceremony all the skilled members of the SHG perceived that the training would help them to start production of nettle fiber to meet the demand of such products and showcase and promote the local products and attract tourism industry in Dzongu.

## Automatic Weather Station Installation at Laven, Dzongu Pilot Site

उत्तरी सिक्किम के जाँगू अध्ययन क्षेत्र में एक स्वचालित मौसम वेधशाला स्थापित की गई। उपरोक्त वेधशाला द्वारा भविष्य में जलवायु परिवर्तन के सम्बन्ध में जानकारी जुटाने में सहायता मिलेगी।

An automatic weather station (AWS) was installed in the study site Dzongu, North Sikkim on the roof of the Government Primary School, Laven. This AWS is equipped with the sensors to monitor rainfall, temperature, and relative humidity. Prior to this, an interaction meeting was conducted in which village/area representatives were briefed about the AWS, its importance at village as well as global level. After receiving the consent from the authorities and School Head Teacher the company engineer with the help of locals and in the presence of the President Zilla Panchayat, Miss. Nimkit Lepcha, Panchayat member Mrs. Sonam Lepcha and representatives of GBPNHIE, Sikkim Regional Centre and Local Partner organization Mutanchi Loam Aal Shezum (MLAS), Dzongu installed the AWS on the roof of the Government Primary School, Laven. This AWS is now continuously recording meteorological data that will help in future climate change projections.



Installation of AWS at Laven (Dzongu) and the initial data collected from the installed AWS

## Community Consultation for the Conservation of Snow Leopard: Synergy with Secure Himalaya Programme



The Sikkim Regional Centre of GBPNHIE in collaboration with ICIMOD, Kathmandu, Nepal are working collectively to “Prepare participatory integrated landscape-level management strategy and plans by defining extent of landscape (alpine & sub-alpine) and evaluating landscape-level existing strategies in SECURE Himalaya project landscapes in selected districts of Sikkim”. Collaboration with government, non-government, institutions and local communities is ensured to create an environmentally, socially and economically beneficial arrangement.

To execute this activity two community consultation meetings were organized for north and west districts of Sikkim (July 16, 2019 & July 18, 2019) to identify the scope of selected landscape for its conservation and management and to get inputs for the integrated management strategy and plan for the snow leopard habitats. SWOT analysis was performed to assess (i) livelihood security, (ii) conservation strategies and practices, (iii) sustainable use of resources, and (iv) ecosystem restoration. The trend analysis was done to study the patterns of key issues viz. (i) population of endangered mammal species (Red panda: *Ailurus fulgens* F. Cuvier; Snow leopard: *Panthera uncia* Schreber), (ii) population of Yak and Yak herders, and (iii) availability, use and trade of medicinal plants in the identified landscape based on the perceptions of diverse local communities.



## Baseline Survey of the Yak Rearing Areas of Lachen and Lachung, North Sikkim



उत्तरी सिक्किम के लाचेन व लाचूंग, क्षेत्र में याक पालन व तत्सम्बन्धी जीवन यापन को सम्भावनाओं के दस्तावेजीकरण हेतु एक परामर्शीय कार्यक्रम का आयोजन किया गया।

Consultations on Yak subsistence livelihood and challenges in KL-India were organized in the highland areas of North Sikkim (Lachung and Lachen) during 18-25

October 2019 in collaboration with Department of Animal Husbandry, Livestock, Fisheries and Veterinary Sciences, Govt. of Sikkim and supported by ICIMOD, Nepal to initiate Yak based activities in KL-India. The major aim of this activity was to document the baseline situation of Yak rearing communities (highland communities) residing in the Lachung and Lachen areas. Various PRA tools: (i) Resource map, (ii) Focus group discussions (FGDs), (iii) Situation analysis, (iv) Yak mobility map, (v) Seasonal calendar of crops, (vi) Historical timeline, (vii) Household survey, and (viii) Expedition and validation visits to the Yak rearing areas were performed to generate the Yak related baseline information.



## Reformed Gorkhey Ecotourism Committee (GEC)

कंचनजंगा भू-क्षेत्र में पर्यटन की अपार सम्भावनाओं को ध्यान में रखते हुए पर्यावरण पर्यटन के विकास हेतु विभिन्न गतिविधियों का आयोजन किया गया। जिसमें गोरखे गाँव को कंचनजंगा भू-क्षेत्र का स्वच्छतम गाँव बनाने का प्रयास, होमस्टे चलाने, ठोस अपशिष्ट का प्रबन्धन, जैवविविधता संरक्षण, आदि शामिल हैं।



KLCDI-India team conducted a meeting with community people on November 23, 2019 and they appreciated the support and efforts made by KLCDI-India team. During the interaction, community people including committee members suggested to give the responsibility to the educated youth in view of the negligence of Gorkhey Ecotourism Committee (GEC). With common consensus, the GEC was reframed and included educated youths

in the committee. After reframing, newly elected president of GEC Mr. Bhusan Chettri stated that the committee will holistically take the responsibilities and conduct regular meetings for planning and review of the activities. He also, ensured that the community would actively participate and coordinate the KLCDI-India programme for the holistic development of the region.



## HI-LIFE

### Training Programme: Building Community Capacity for Eco-tourism and Homestay Development

नमदाफा राष्ट्रीय उद्यान अरुणांचल प्रदेश में भविष्य हेतु ईको-टूरिज्म की अपार संभावनाओं के मद्देनजर L-मॉडल के पाँच होम-स्टे का निर्माण किया गया। हाई-लाईफ परियोजना द्वारा चयनित परिवारों को मॉडल होम-स्टे को पर्यावरण पर्यटन को बढ़ावा देने हेतु सौंपा गया। चयनित प्रतिभागियों को प्रशिक्षण कार्यक्रम द्वारा ईको-टूरिज्म के सभी पहलुओं जैसे अतिथ्य, होम-स्टे संचालन एवं प्रबंधन आदि विषय पर जानकारी प्रदान की गयी।

The HI-LIFE (India) landscape which also includes Namdapha National Park has huge potential for eco-tourism development. Along with very rich biodiversity of plants and wildlife in the area, there are some other special attractions like Pangsau Pass International festival,

World War II Cemetery, Lake of No Return, Nampong, etc. which add special value to the landscape as a tourism destination. Every year a large number of national as well as international tourists visit the Changlang district on different occasions. Therefore, looking on the available potential and future prospects, eco-tourism is being promoted in the HI-LIFE landscape as a potential alternate livelihood. Under HI-LIFE (India), a total of 5 homestays have been developed as 'model homestays' and handed over to the selected beneficiaries/families for operation. Capacity of the local people was built to promote sustainable ecotourism as an alternate livelihood by conducting a training-cum-exposure (24<sup>th</sup>-29<sup>th</sup> November 2019). A total of 14 beneficiaries were selected from Changlang district (HI-LIFE Study area) after survey and personal interviews. Among the selected participants there were 6 Female and 8 Male individuals who belongs to M'Pen II, Lama and Deban villages (Changlang district). The training was organized at Chuikhim village, Kalimpong district of West Bengal where there are operational homestays that are very successful. The training course was designed to cover all aspects of eco-tourism like hospitality, homestay operations, and management etc.



### Changing Faces of Pastoralism in Darma Valley, KSL-India

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Darma valley in Kailash Sacred Landscape is a fascinating diverse landscape broadly divisible into Talla (lower) and Upper (Malla) Darma. This valley is mainly drained by Darma Ganga or Eastern Dhauli. Lower Darma is the tract between village Dar and Bongling lying within temperate belt upto an altitude of 2400 m asl. This belt comprises precipitous slopes having extensive grassy slopes and a few patches of broadleaf forests dominated by oaks, rhododendron, maples, walnut and horse chestnut. Malla Darma begins at Urthing (2700 m asl) beyond which the vegetation gradually changes into sub-alpine forests, alpine scrub and extensive meadows. With increasing elevation the valley transforms into expansive alpine rangelands interspersed with birch and blue pine. Upper Darma is extremely picturesque and towards inner range it bifurcates into two major catchments via., Lissar Yangti and Dhauli Yangti. Right flank of upper Darma is marked by the presence of grandiose Panchachuli group of peaks which stand well over 7000m. Upper Darma is inhabited by Rung Shaukas who were agro-pastoralists. They have to adapt to their stark environment by adopting nuclear transhumance and migrate to lower areas during the harsh winter months. The valley's history is steeped in rich cultural and traditional milieu, being a major route for its transhumant inhabitants to trade with Tibetan nomads in the past.

The terrain and climate ensure that farming is possible only

in the summer which is why pastoralism has been vital to local livelihoods. Herders undergo arduous journeys almost round the year; traveling hundreds of miles across central Himalayas from the Terai plains of Tanakpur in winters, all the way edge of Trans Himalaya at the end of Darma during summers in search of green pastures. But even these far-off and communities have been unable to escape the abrasive interjections of an erratically developing world. Towns in and around have been exposed to globalization and aspirations of people have changed remarkably. Moreover, the Sino-Indian war of '62 saw to it that border routes were closed off and traditional trading practices that formed the fabric for these societies came to a halt.

In recent decades, a thriving market for medicinal and aromatic plants (MAPs) has emerged and their illegal trade has boomed. The most notorious of which is of course Yartsagumbo or Keedajadi *Cordyceps sinensis* which fetches a very high price (over Rs. 120000/- per kg) and has radically changed the socio-economic dynamics in the area. The hard toil involved in sustenance based agro-pastoralist activities has observed them being gradually replaced by Keedajadi collection, which in itself is a risky affair as it's only found in the extreme upper reaches around alpine rangelands. This is clearly reflected in the sheep and goat populations that have plummeted over the last few decades by over 90% in case of some villages. The number of herding families from within the valley too has drastically declined with people opting to migrate out in search of employment.

At the present, herding is mostly done by pastoralists from outside such as Ranthi-Jumma (Dharchula), Johar valley (Munsyari) and Kangra (Himachal Pradesh) by paying royalties to the villagers for access to pastures. KSL, like most other Himalayan regions, is thus undergoing a rapid societal





transformation that has had a cascading impact on regional biodiversity. Pooling all of this together, it has become extremely relevant to assess recent trends in pastoralism and the current status of alpine rangelands.

Under KSL - Phase II, a reconnaissance survey was carried out during April-June amongst the villages in Darma and results affirmed the fact that pastoralism is on the decline. There has been a rise in trend of loaning out livestock to a few mass herders as opposed to self - rearing. Furthermore, livestock owners have been able to diversify their income sources through a mix of MAP-Keedajadi collection, homestays, tourism and/or having family members with stable jobs outside the valley. The major bugyals (alpine rangelands) lie past Sipu, the last village in the valley, and are currently accessed by about 15 mass herders annually (between May-October), of which 6 are from Darma and 9 from outside. The herd strengths range from 600 to 800 individuals and comprise of livestock owned by the valley inhabitants taken in custody for a particular fee.

As herders use established grazing routes and halting points, areas of high grazing intensities were identified and vegetation sampling across these spots was carried out during September-October. *Rosa webbiana* is the dominant thorny scrub in the upper valley (en route the major pastures), and is visually striking during autumn painting the valley a rustic copper red. East facing slopes in the valley have sprawling pastures on gentle slopes largely dominated by *Danthonia tussocks* and *Kobresia* sp. sedges interspersed with herbs such as *Teraxacum officinale*, *Gentianella moorcroftiana*, *Sibbaldia cuneata*, *Anemone rupicola*, *Fragaria* sp., *Thalictrum alpinum* and *Androsace globifera*. Camping sites are easily identifiable and abundant with *Rumex nepalensis*, which proliferates rapidly due to high concentrations of nitrogen in livestock droppings. *Bergenia stracheyi*, *Dactylorhiza hatagirea* and *Picrorhiza kurrooa* are some of the common MAPs of high monetary value and are used extensively in local medicine.

Spending an extensive amount of time in the valley

has helped garner a fresh perspective on issues plaguing the inhabitants. Traditional institutions have withered and establishment of grassroots organizations such as Van Panchayats and BMC have lacked conviction. Livelihood support policies such as dissemination of camping equipment to herders and compensation for loss of livestock in case of accident or attack by wildlife have been improperly implemented. Line departments such as State's Department of Animal Husbandry and State Forest Department have largely failed in being able to provide an adequate framework for management of pastures and/or address day-to-day grievances of the people. Baseline information from such a study could be used to design a coordinated conservation, management and harvest plan for the use of bugyals. Furthermore, systematic documentation of flora and in particular MAPs could be pivotal in designating conservation areas and in case of threatened varieties, species recovery programs.

With all this in mind, one wonders about the future of pastoralism in the valley. Like most social narratives, it is a complicated question that requires pensive deliberation. Trends reveal an increasing disinterest in continuing pastoral activities amongst the Shauka communities particularly from the upper valley who have mostly migrated out as different options of income become available to them more readily. At the same time, other communities such as the Gaddis from Himachal, Anwals from the lower valley and outside are unable to easily escape the struggles of their class and still continue to practice pastoralism with fervor. Hence, despite a decline, the overarching story still depicts pastoralism as an important livelihood that still needs attention.



## Systematic Monitoring of Maling Bamboo Experimental Plots in Neora Valley National Park

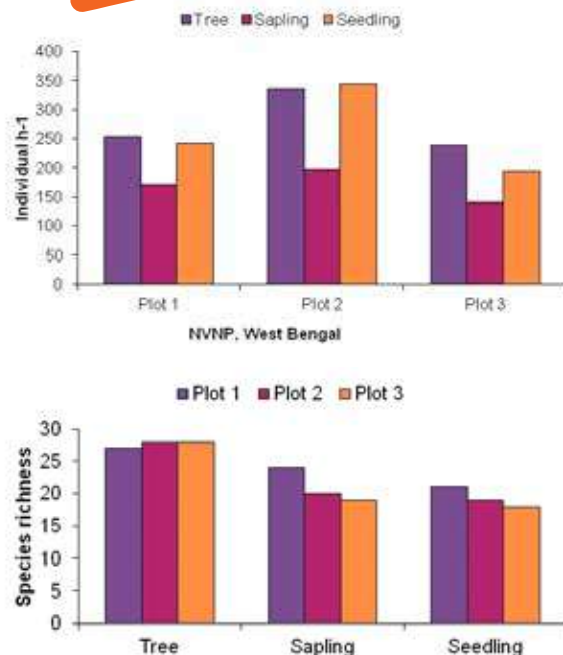
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The Neora Valley National Park (NVNP) is one of the key protected areas in the KL-India and transboundary in nature. Considered as one of the most pristine ecosystems, the NVNP is an important National Park due to wide altitudinal variations, intact primary forests and also being part of the ecological tri-junction with Sikkim and Western Bhutan. The NVNP, initially established with 88 km<sup>2</sup>, was further extended with an area of 159.78 km<sup>2</sup> in 2017. With a wide range of environmental gradients (183 m – 3,200 m), the park has diverse ecosystems and rich biodiversity. The lush and luxurious forests found in the NVNP is an important catchment for water supply to 50,000 people living in Kalimpong downstream. The NVNP is also an important habitat for *Red Panda*, Gaur, and even the Royal Bengal Tiger. However, periodic studies looking for seasonal and temporal changes on biodiversity crucial for management interventions of the park are yet to be established. Moreover, the increasing invasion by native Maling bamboo (*Yushania maling*), is arresting regeneration of the climax species and changing the ecosystem and biodiversity of the National Park. Directorate of Forests, North Wing, Government of West Bengal, has established experimental plots with different treatments in the Park for understanding the response and managing Maling Bamboo.

We studied regeneration pattern of three experimental plots (each of 1ha area) to observe status of planted seedlings (i) wild saplings (ii) nursery saplings planted, and to study the effect of such exercise on biodiversity of the NVNP-PA, with special reference to exotic invasive species and the baseline data was collected. Preliminary data shows the decline in the recruitment of the seedlings into the saplings in all three plots, although these plots have shown a fair regeneration status, the maximum tree, sapling and seedling density (336, 198, 344 ind ha<sup>-1</sup>) were recorded for plot 2 and minimum (238, 141, 194 ind ha<sup>-1</sup>) was recorded for Plot 3, respectively. Maximum tree species were recorded from plot 3 and plot 2 (24 species in each). The maximum basal area was recorded for Plot 2 tree (31.46 m<sup>2</sup>ha<sup>-1</sup>) and seedling layer (0.03 m<sup>2</sup>ha<sup>-1</sup>), however, in sapling layer the maximum basal area (0.65 m<sup>2</sup>ha<sup>-1</sup>) was recorded for plot 1. Soil analysis of these plots reveals that the range of moisture



Tree, Sapling and Seedling Density in Three Different Maling (Bamboo) Plots in NVNP; Fig. 3: Species Richness in Three Different Maling (Bamboo) Plots in NVNP



content (range 39.6-60.8%) was and the highest in plot 1. The bulk density ranged from 0.47-0.93 g/cm<sup>3</sup>, and the highest bulk density was recorded in plot 2. Similarly, the phosphorus content ranged between 0.05 and 0.10% in the sampled plots, and the maximum content of phosphorus was recorded from plot 3. To understand the consequences of the invasion of Maling Bamboo and decline in recruitment from seedlings to sapling there is a need to establish long-term monitoring plots and study the ecological changes in Maling Bamboo and Non-Maling Bamboo sites.



## Restoring Degraded Land Through Community Participation in the Kailash Sacred Landscape Part of India

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पवित्र कैलाश भू-क्षेत्र के भारतीय भू-भाग में वनों की अत्यंत विविधता मौजूद है, जो कि इस भू-भाग की जैव-विविधता की प्रचुरता, प्रतिनिधित्व व विशिष्टता को संजोए हुए हैं। पिछले कुछ दशकों में देखा गया है कि, कई प्राकृतिक व मानव-जनित कारकों के कारण कैलाश भू-क्षेत्र के वनों में ह्रास हुआ है व भू-क्षेत्र के वनों का एक बड़ा हिस्सा अवक्रमित हो चुका है, इन वन परितंत्रों की पारिस्थितिकीय सेवाओं के सतत् प्रवाह एवं पर्यावरणीय संतुलन हेतु इन अवक्रमित वनों का पुर्नस्थापन अत्यंत आवश्यक है। पुर्नस्थापन की महत्ता को देखते हुए पर्यावरण संस्थान ने कैलाश भू-क्षेत्र के भारतीय भू-भाग में चिन्हित किये गए गावों में 'राष्ट्रीय हिमालयी अध्ययन मिशन' के अन्तर्गत पुनर्स्थापन कार्य आरम्भ किया है। प्रारंभिक रूप में कैलाश भू-क्षेत्र के 3 गावों जजूट, नैकिना व दिगतोली में स्थानीय जनसमुदाय की भागीदारी द्वारा विविध बहुउद्योगी पादप प्रजातियों के 1200 पौधों का रोपण कर 3 हेक्टेयर अवक्रमित भूमि को पुर्नस्थापित करने का प्रयास किया गया है।

Forests stabilize the climate, support biodiversity and sustain communities by supplying a range of goods and services. The forests which are the sentinels of mountainous biodiversity face several threats in the form of over exploitation, unmanaged utilization, illegal trade, increased demand for fuel, fodder, timber, fiber, wild edibles, medicinal and aromatic plants, land use changes, forest fire, climate change etc. The above mentioned factors have resulted in degradation and depletion of forests and biodiversity resources. Restoration is likely to reverse the loss of biodiversity, improve ecosystem resilience, enhance the provision of ecosystem services, mitigate the effects of climate change, combat desertification and land degradation and improve human well-being. Therefore, it would be pertinent to undertake land restoration, which will be helpful for reducing the pressure on natural resources, play an important role in conservation of biodiversity and uplift the economic condition of people and provide ecosystem goods and services for well being of people. During recent decades considerable work has been done on restoration of forests/landscapes, but still much remains to be done.

In view of the above the GBPNIE, under NMHS funded project initiated land restoration activities on the degraded land in the a few villages of Hat-Kalika and Chandak-Aulanghat

watersheds, Pithoragarh district. Participation of local stakeholders in the various steps of land restoration viz. site identification, involvement in restoration intervention planning and capacity building of the local communities were ensured. Collectively about 3 ha degraded land in three villages namely Digtoli, Jajut and Naikina has been undertaken for developing different kinds of restoration models. On the basis of need assessment and ecological conditions of the sites a total of 1200 saplings of different multi-purpose plant species viz. *Quercus leucotrichophora*, *Q. glauca*, *Cinnamomum tamala*, *Morus alba*, *Pittosporum eriocrpum*, *Bauhinia purpurea*, *Zanthoxylum armatum* were planted on the selected degraded sites. Soil physico-chemical properties were analyzed for each site before plantation. The communities were given training on how land should be prepared for plantation, how species should be selected based on the habitat conditions, what are the requirements of different species, at what time the digging of pits and plantation activities should be done, what should be the size and distance between pits etc. Monitoring of height, diameter and number of leaves of each planted sapling was carried out and the communities were trained on how periodic monitoring of growth of plants, removal/replacement of dead and diseased plants, weeding etc. should be done. It is envisaged that through such efforts we would contribute towards Aichi Biodiversity Target 14.



Various Steps Involved In Restoring a Degraded Land

## Promoting Organic Farming in Gorkhey-Samanden: Transboundary Village of Khangchendzonga Landscape-India

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Organic farming ensures economic viability and environmental sustainability offering healthy ecosystems, including biodiversity, biogeochemical cycles, and soil biological activity. Integrating organic farming in ecotourism development is an important component that offers livelihood diversification and economic development of the community viz-a-viz ecosystem management. An initiative is taken to promote organic farming in Gorkhey-Samanden village in KL- India under KLCDI- India programme.

Gorkhey-Samanden is a small forest village bordering Singalila National Park in West Bengal and Barsey Rhododendron Sanctuary in Sikkim. A total of 65 households reside in the village and mainly dependent upon agriculture for their livelihood, potato, peas, and maize being the major crops, while some are engaged in operating homestays during the tourist season as the village lie on the trekking route of Singalila National Park closer to Phalut. Phalut is the famous trijunction of the two Indian States-Sikkim and West Bengal with Nepal. On

the trek back from the park, Gorkhey-Samanden often becomes the resting place for the trekkers. At least a night halt is often taken in the homestays of the village. Thus the village has been recognized as potential ecotourism destination offering alternative livelihood option. In this village survey indicated that the farmers are using fewer amounts of inorganic fertilizers as compared to the organic manure. Hence, there is a possibility to encourage organic farming through skill and capacity building on organic farming practices such as vermi-composting, vermi-wash, bio-pesticides and bio-fertilizer use. Thus, promotion of organic farming was realized to ease the situation by increasing crop yield.

To promote organic farming in Gorkhey-Samanden village, GBPNHE, Sikkim Regional Centre, in collaboration with The Mountain Institute, India; Sikkim Kishan Society, Daramden and Directorate of Forests, West Bengal organized two-days training-cum-field demonstration event under KLCDI India programme on bio-composting and bio-pesticides technologies in which 38 farmers participated. Field demonstration-cum-training to the participants was imparted on vermi-compositing, bio-pesticide, vermi-wash and bio-fertilizers by the experts. Further, under this training programme, four low-cost vermi-composting pits and one low-cost vermi-wash stands were constructed in the farmer's field. Furthermore, using traditional knowledge and available bio/natural resources, ten liters of bio-pesticides as also prepared and its way of using was demonstrated in the farmer's field. The event reflected the process of training and demonstration on skill and capacity building for improving knowledge on organic farming. As an outcome of the training based on analysis of the pre-assessment forms, it was found that most of these topics were unknown for the participants and they did not have much information/ idea about them. The

post-training evaluation indicated that majority of the participants gained knowledge and confidence regarding, various methods and technique of organic farming. It is believed that the process and outcomes of the event would be a landmark for the transboundary landscape programme (KLCDI-India), especially for livelihood diversification and economic development objective and directly or indirectly will support ecosystem management and promote organic farming in the part of KL-India.



Field Demonstration of Vermi-Composting, Bio-Pesticide, Vermi-Wash and Bio-Fertilizer



## Clean Landscape Initiative in Gorkhey-Samanden Forest Village (Barsey-Singalila): A Dream for Next Mawlynnong?

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Gorkhey-Samanden is one of the famous tourist destinations of Darjeeling hills. Located at an altitude of 7545 feet, it is the remotest village present in close proximity to the Singalila National Park in the North and Barsey Wildlife Sanctuary in the East. Gorkhey-Samanden is bestowed with rich biodiversity and provides a wide range of ecosystem services of local and regional significance. Every year a large number of visitors arrive in Gorkhey-Samanden after completing trekking of Sandalkphu and Phalut (famous trekking peaks). Although this place is unharmed despite the superfluous human disturbances still there is ample opportunity to make this village one of the cleanest destinations in the regions. However, fewer amounts of wastes accumulate around this village namely newspaper, polythene, cartoons, bottles, toffee wrappers, tins, bins, etc., that remains unmanaged and unattended. Recently GBPNIHE SRC and TMI India, is applying some noble initiatives to safeguard the ecology of the area by implementing KLCDI-India project activities supported through ICIMOD, Nepal.

In this village two awareness and training programmes on solid waste management were organized in the past in (between 15-16 October 2017 and 3-4 June 2018) benefitting 90 people. Awareness campaign about plastic-free cleanliness drives, capacity building on plastic pollution management for women, orientation on clean nature and its significance for livelihood and orientation on importance of waste management for growing ecotourism were the various objectives undertaken during the training. During the occasion participants also cleaned the Singalila- Phalut trekking trail inside National Park area above Gorkhey-Samanden village (nearly 3 kms). In this, we received continuous support from the Gorkhey Ecotourism Committee (GEC) members.



Gorkhey-Samanden

Again a training conducted on 3-4 June, 2018 also made them understand that for judicious waste management, peoples' initiative is much more effective Gorkhey-Samanden is one of the famous tourist destinations of Darjeeling hills. Located at an altitude of 7545 feet, it is the remotest village present in close proximity to the Singalila National Park in the North and Barsey Wildlife Sanctuary in the East. Gorkhey-Samanden is bestowed with rich biodiversity and provides a wide range of ecosystem services of local and regional significance. Every year a large number of visitors arrive in Gorkhey-Samanden after completing trekking of Sandalkphu and Phalut (famous trekking peaks). Although this place is unharmed despite the superfluous human disturbances still there is ample opportunity to make this village one of the cleanest destinations in the regions. However, fewer amounts of wastes accumulate around this village namely newspaper, polythene, cartoons, bottles, toffee wrappers, tins, bins, etc., that remains unmanaged and unattended. Recently GBPNIHE SRC and TMI India, is applying some noble initiatives to safeguard the ecology of the area by implementing KLCDI-India project activities supported through ICIMOD, Nepal.

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Waste management training at Gorkhey-Samanden

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Again a training conducted on 3-4 June, 2018 also made them understand that for judicious waste management, peoples' initiative is much more effective than Government funded waste management projects. In order to curtail the wastes, demonstration on techniques of making crafts using waste papers (both papers and plastics) was imparted. Training experts briefed on how and what procedures can be adopted to make products from wastes namely the wrappers, tetrapacks, bottles, etc. Further, a mass awareness programme on waste management (under Clean India Mission) was also organized for third time at Gorkhey-Samanden on 7 March 2019 involving the

local people. In addition to this, KLCDI-India supported by local groups (GEC and Samanden women SHG) for constructing two village garbage disposal bins within the village.

As an outcome of a series of awareness campaigns and training conducted on solid waste management, local community of Gorkhey-Samanden have become conscious regarding village cleanliness and hygiene. Especially the members of SHG are cleaning the village footpaths and trails fortnightly. Because of campaign the village looks cleaner now. During the tourism week between 6-12 May 2019 we interacted with the tourists and they told that the village is more clean now than before. They also appreciated the village-based tourism initiatives and the kind of services provided to them during their stay in the wildlife homestay. Gradually, people's awareness on waste management is increasing through the implementation of project activities and consequent local support. Department of Forests is also playing a pivotal role to overcome the problem.

## Diversity Our Identity Our Heritage: Kailash Sacred Landscape-India

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पवित्र कैलाश भू क्षेत्र-भारत लगभग 7120 वर्ग कि.मी. क्षेत्रफल में फैला हुआ है, जोकि एक वृहद बहु-सांस्कृतिक और संवेदनशील भू-क्षेत्र का प्रतीक है। जैव भौगोलिक रूप में यह भारत के पश्चिमी हिमालयी प्रान्त में पड़ता है तथा यह भू-क्षेत्र पश्चिम, मध्य एवं ट्रान्स हिमालय के संगम पर स्थित है। जहाँ पर न कि केवल पादप व जन्तु की प्रचुर विविधता, वरन विविध मानव संस्कृतियों का भी संगम होता है। यह भू क्षेत्र अपने आध्यात्मिक, धार्मिक और प्राकृतिक महत्व के कारण विश्व समुदायों को आकर्षित करता रहा है।



Himalaya is one of the most beautiful and fascinating place on the earth. Its biodiversity and cultural richness are to be celebrated, and cherished. Nature and culture are intimately complementing each other in the Himalaya, particularly surrounding the sacred landscape of Mt. Kailash. The region comprises a highly diverse array of ecosystems, indigenous and endemic species, local cultures, and ethnic communities. Kailash Sacred Landscape within India (KSL-India) covers (7120 sq. km area) most of Pithoragarh district (96%) and relatively smaller portion of Bageshwar (4%) district in the state of Uttarakhand. Here, about 87% of population resides in rural areas, comprising of 1672 villages. Urban area is only 0.38%, which contributes 13% of the total population. About 75.8% population is spread in 23.74% area of the landscape. In general, agriculture and livestock rearing are the main occupations of >70% of inhabitants. The landscape is characterized by several sacred sites, high-altitude lakes, alpine meadows, snow cladded peaks and a network of religious sites across the landscape. A brief description of landscape diversity is as follows:

**Cultural diversity:** In KSL-India, various cultural groups have evolved in river valleys of Kali, Dhauri, Gori, Ramganga and Saryu. There are 7 major indigenous cultural zones (Byas, Darma, Johar, Askot, Seera, Sor, Gangoli) in the landscape and they differ in their cultural belief and local dialect.

**Diversity in fair and festivals:** KSL-India is the land of several fairs and festivals, where diversity of local festival prevails. Temples and confluences of the rivers are the



main areas to organise the fairs in the landscape. There are about 15 places where every year major fairs occur round the year. Some of the places viz., Kumour (Pithoragarh), Mostmanu (Chandak), Hat-Kalika (Gangolihat), Thal, Munsyari, Jhulaghat and Jauljibi conduct regular fairs. Jauljib trade fair is one of the trans-boundary fair



organised every year during November month at the confluence of Gori and Kali rivers.

**Temples/local deities:** Temples are important features in the KSL-India. These are not only a place of worship but also a meeting point for the people. There are more than 106 ancient temples and well-known local deities in the landscape. Some of the well-known temples are Thalkedar, Dhawaj, Haat-Kalika, Mostmanu, Kamakhya, Taleshwar, Malaynath, Kotgyari, Narayan Ashram, Chhiplakedar and Kalapani. Several fairs and festivals conducted across the years in the temples where diversity of local culture and traditions prevail.

**Sacred natural site (SNS):** KSL-India has about 139 small and large Sacred Natural Sites (SNS). These places play an important role in management of natural and cultural diversity. Villagers are protecting these sites for generations by offering them to local god and goddess. These forests are locally known as 'Dev van'. In these forests, any type of exploitation and weapons are not allowed. These places play an important role in conservation of natural and cultural diversity.

**Diversity in heritage and trekking routes:** Several non-material benefits people obtain from the landscape through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experiences, thereby taking account of the cultural values of the landscape. There are two old heritage routes (i) Talla-Sera to Jhulaghat (~70km long) and ii) Jhulaghat to Lipulekh (way to Kailash Mansarovar) (~140km) were used in the past. Currently, due to development of motorable road only small part of the Jhulaghat- Lipulekh heritage route is

trekked during Kailash Mansarovar and Adi-Kailash yatra. Other than the heritage routes there are more than 30 short and long trekking routes across the landscape.

**Diversity in adventure tourism:** KSL-India offers several areas of adventure activities viz., Mountaineering, Trekking, Glacier expedition, Rock climbing, River rafting, Paragliding, Forest walk etc. Some of the known places for rock climbing are Birthi, Bhatkot, Marh, Ghunsera, Majhpati and river rafting are Jauljibi, Jhulaghat, Pancheshwar, Rameshwar etc. These activities can be connected with the employment of local communities. However, proper maintenance of these places will be of high importance.

**Diversity in water resources (springs, rivers, lakes and glaciers):** KSL-India have over 900 springs (Naula/Dhara), five major rivers (Kali, Dhauli, Gori, Ramganga and Saryu), 8-10 small lakes, and more than 380 glaciers. The impact of environmental change can be clearly visualized in a few glaciers i.e. Milam and Panch Chuli.

**Agro-biodiversity:** KSL-India is rich in hill agriculture diversity. Here more than 97 crops (cereals-08, millets-06, pulses-15, oilseeds-11, vegetables-28, spices and condiments-10, fruits-19) are cultivated. Today the



need of the hour is to conserve and sensitize youth to conserve traditional agro-diversity and also promote it to be known as a "regional heritage" of the landscape.

**Bio-diversity:** About 52% land in the KSL-India is covered with forested area having some of the highly biodiversity rich sites. According to the Management Plan of Pithoragarh Forest Division (2011-22), in the landscape, there are 16 major forest types representing 2389 angiosperms, 13 gymnosperms, 193 birds, 09 amphibians, 19 reptiles, 90 fishes and 38 mammal

species. The landscape has about 15 biodiversity rich areas namely, Thalkedar, Shorlekh, Dhawaj, Chandikaghat, Gangolihat-Patal bhuwaneshwar, Sandev, Ghandhura, Kalamuni-Khaliya Top, Gori valley, Chiplakedar, Himkhola-Karangdang, Chiyalekh, Napalchunala, Chandika Ghat and Ralam.

**Diversity of threatened species:** KSL-India inhabits several threatened species. There are 18 angiosperms, 10 mammals, 7 birds and 14 fish species reported from the landscape under threatened categories. Over last few decades, environmental and human induced changes have increased pressure on their natural habitats. Under Kailash and NMHS initiative, accurate information about their population and distribution are continuously being generated and local people are also being sensitized to



protect these threatened species. The diversity of the landscape is directly linked to the agriculture, livelihood and biodiversity of upstream and downstream areas. Therefore, it is highly imperative to have a robust and continuous monitoring and management strategies for their conservation and sustenance.

## SUCCESS STORY

### Integrated Livelihood Model in Gorkhey-Samanden: A Transboundary village of KL-India

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सिक्किम राज्य का बारसी-सिंगलिया क्षेत्र अपनी भौगोलिक, सांस्कृतिक एवं सामाजिक (छेत्री, राय, तमंग, शेर्पा) विशेषताओं हेतु विश्व-विख्यात है। यह क्षेत्र अपने-आप में जैव-विविधता का एक महत्वपूर्ण उदाहरण पेश करता है। यहां विभिन्न प्रकार की बुँराश प्रजातियाँ, जंगली खाद्य-फल, विविध पशु-पक्षी, याक प्रजाति आदि उपस्थिति हैं। जो सम्पूर्ण क्षेत्र को रमणीक एवं रोमांचक बनाता है। साथ ही, भविष्य हेतु ईको-टूरिज्म, रोजगार, आदि की अपार संभावनाओं को भी प्रकट करता है। इसी क्रम में, सीमापारीय परियोजना

के तहत गोरखा संमदेन गाँव को एकीकृत आजीविका विकास मॉडल के प्रारूप में विकसित किया गया। यहां के स्थानीय समुदाय को विभिन्न प्रशिक्षण कार्यक्रमों के तहत जैविक खेती, होम-स्टे संचालन, जंगली खाद्य फलों का प्रसस्करण, पॉलीहाउस निर्माण, आदि की जानकारी एवं प्रशिक्षण प्रदान किया गया। साथ ही, उक्त सभी प्रशिक्षण कार्यक्रमों द्वारा समुदाय-विशेष की कौशल-क्षमता का निर्माण करते हुए आजीविका हेतु आत्मनिर्भर बनाया गया।

The Barsey-Singalila Site was selected as one of the important pilot sites under KLCDI-India with its significant features, such as (a) complex ecological, cultural and social assemblage (Chettri, Rai, Tamang and Sherpa); eco-climatic variations-subtropical to alpine/sub-alpine zones, (b) transboundary area connected with Nepal, and (c) close connectivity among Protected Areas (PAs), i.e. Barsey Rhododendron Sanctuary and Singalila National Park. Wherein, major villages/wards like Khopi-Ramitey, Lower Ribdi, Upper Ribdi, Lower Bhareng and Upper Bhareng come under the Ribdi and Bhareng GPU of West Sikkim and Gorkhey-Samanden and Raman falls under Darjeeling district of West Bengal state. Among the target villages, Gorkhey-Samanden village was identified for the implementation of the activities under KLCDI-India. The village snuggles in the valleys of the Himalayas with lesser facilities like transportation, electricity, healthcare, and



telecommunication. The community of the village is highly dependent on the agricultural practices followed by tourism activities. Due to its close connectivity with PAs and remoteness, the community people highly depend on natural resource utilization i.e., firewood, fodder, wild edible, etc. for livelihood purposes.

Focusing above in view, an integrated approach has been developed to promote the village as sustainable ecotourism and livelihood with nature conservation. Few priority initiatives like, ecotourism, off-season vegetable cultivation, organic farming and solid waste management have been implemented since implementation phase of the KLCDI-India Programme. An initiative to promote the organic farming in Gorkhey-Samanden village through many activities such as off-season vegetables; supported through polyhouse construction, organization of demonstration cum training events on polyhouse based farming; distribution of the seedlings of Yacon (*Smilanthus sonchifolius*) and Peach (*Prunus sp.*) and training on low-cost techniques on vermi-composting, bio-composting and bio-pesticides. Apart from this, community-based ecotourism has been promoted in Gorkhey-Samanden village through skill and capacity building and exposure visits on homestays steering and management, solid waste management, and eco-guides. For sustaining the livelihood and conservation, a local community group i.e., Gorkhey Ecotourism Committee (GEC) was formed to coordinate the activities and symbolize the synergy among other stakeholders. In continuation, for monitoring and reviewing implemented activities





in Gorkhey-Samanden, a team of KLCDI visited Gorkhey-Samanden village (24-26 November 2019) and interacted with the individual beneficiary and committee members (GEC) for further inputs and comments. In this village a total of 05 polyhouses (03 in 2017 and 2 in 2019) were distributed to farmers and it was observed that the farmers are growing vegetables inside the polyhouse (i.e. Green peas, tomato, green vegetables, chilly, cauliflowers, etc.). The concept of organic farming was introduced in 06 farmers' field as through demonstration and supported them for preparing vermi-composting, bio-composting, and bio-pesticides during 2018-2019. Now, all beneficiaries are engaged in producing vermi-compost in their farms and few farmers showed a willingness to practice organic farming. As the first kind of initiative, fruit saplings of yacon (more than 700) given to the village people of Gorkhey-Samanden (44 beneficiaries/households) during June 2017. After extensive training and support, beneficiaries (farmers) are regularly caring for the young saplings and receiving an encouraging outcome. Previous year, each farmer got on an average of 4 kg yield per plant of Yacon fruit and sold around 500kg @ Rs. 30.00 per kg to Kolkata market. Farmers repeated plantation of yacon in their fields using tuber and it is

expected to produce more than 2500 kg of yacon fruit. Around 1500 kg of yacon has been already sold out to SHOTEN Group, Gangtok. Some households have made wine using yacon rhizomes, which is being served to tourists.

Regarding ecotourism, total 05 homestays are fully and professionally functional in the village, which are now linked with the website ([www.tourismklindia.com](http://www.tourismklindia.com)) under KLCDI-India programme. Homestay owners mentioned that less number of international tourists visited the site in 2019 as compared to the last year 2018, while national tourists visited more in 2019 than 2018. Such decline of international tourists in the site is due to the increasing price of the permit by the Forest Department, West Bengal and miscommunication and mismanagement among community-based groups and stakeholders. However, the community people suggested reforming the Gorkhey Ecotourism Committee in which educated youth of the villager should be included for better and sustainable management and coordination of tourism in Gorkhey-Samanden village. Government support is leveraged for utilities and infrastructure (electricity, footpaths, community hall) in this village due to the KLCDI initiatives. We are implementing zero waste management in village by following 3Rs reduce, reuse and refuse of plastic waste and promoting village as cleanest ecotourism destination.







## चौदास घाटी में उच्च मूल्य के औषधीय पादपों का संवर्धन एवं कृषिकरण

अमित बहुखंडी, कुलदीप जोशी एवं आई.डी. भट्ट

गोविन्द बल्लभ पंत राष्ट्रीय हिमालयी पर्यावरण संस्थान, अल्मोड़ा

भारतीय हिमालयी क्षेत्र एक समृद्ध और उल्लेखनीय जैव विविधता वाला क्षेत्र है, जो हिमालयन ग्लोबल बायोडायवर्सिटी हॉटस्पॉट के एक बड़े हिस्से का प्रतिनिधित्व करता है। यह क्षेत्र लगभग 7.5 लाख वर्ग किलोमीटर क्षेत्र (लंबाई में 3000 किमी और चौड़ाई में 250-300 किमी और ऊंचाई में 300 से 8000 मीटर) तक फैला हुआ है। इस क्षेत्र की समृद्ध वनस्पतियों में लगभग 18,440 विभिन्न पादप प्रजातियां पायी जाती हैं। जिनका उपयोग स्थानीय निवासियों द्वारा दवा, जंगली खाद्य, ईंधन, लकड़ी, आदि के रूप में किया जाता रहा है। इसके अलावा, हिमालयी क्षेत्र से लगभग 1748 पादप प्रजातियों को उनके औषधीय गुणों के आधार पर पहचान मिली है। वर्तमान में औषधीय पौधों को प्राकृतिक सक्रिय जैव रासायनिक तत्वों का अच्छा स्रोत माना जाता है तथा विभिन्न रोगों के उपचार हेतु पारंपरिक और आधुनिक चिकित्सा प्रणाली में उपयोग किया रहा है। आज औषधीय पौधों की मांग हर्बल, कॉस्मेटिक, दवा उद्योगों द्वारा नई दवा खोज हेतु बढ़ती जा रही है। जिसके कारण हिमालयी क्षेत्रों से औषधीय प्रजातियों का व्यापार हेतु नियमित दोहन किया जा रहा है। वर्तमान में लगातार औषधीय प्रजातियों की बिना वैज्ञानिक तकनीक तथा

ज्ञान से कटाई, जानवरों द्वारा अनियमित चराई, उनके आवासों को नुकसान, जलवायु परिवर्तन और कई अन्य कारकों से विभिन्न औषधीय पौधों पर दबाव तथा विलुप्ति का संकट बढ़ गया है। साथ ही कई औषधीय प्रजातियों की जनसंख्या तथा उपलब्धता में गिरावट आई है तथा इनके संरक्षण हेतु पहल विकसित करना एक बड़ी चुनौती है। इसलिए औषधीय प्रजातियों की बड़े पैमाने पर किसानों द्वारा खेती कर इस संकट को कम किया जा सकता है। जिसके परिणामस्वरूप हिमालयी प्रजातियों का संरक्षण तथा स्थानीय किसानों की आजीविका में वृद्धि एवं आत्मनिर्भरता बढ़ेगी। अतः गोविन्द बल्लभ पंत राष्ट्रीय हिमालयी पर्यावरण संस्थान अल्मोड़ा द्वारा हिमालयी अध्ययन राष्ट्रीय मिशन के तहत चौदास घाटी, पिथौरागढ़ जिले के चयनित गाँवों में सहभागीता के माध्यम से विविध औषधीय प्रजातियों जैसे एलियम स्ट्रैची (जम्बू), एंजेलिका ग्लौका (चोरु), सिनामोम तमाला (तेजपात), हेडिकियम स्पाईकेटम (वन हल्दी), पिक्चुरिजा कुरुवा (कुटकी), ससुरिया कोस्टस (कूट) और वेलेरियाना जटामांसी (तगर) की वृहद खेती में प्रयास किये जा रहे हैं। इस परियोजना का उद्देश्य जैव विविधता संरक्षण, व्यापार हेतु औषधीय पौधों की खेती को बढ़ावा तथा प्रगतिशील किसानों की आर्थिक स्थिति में बदलाव हेतु कार्यान्वयन के लिए भागीदारी की पहल करना है। उक्त परियोजनाओं के तहत चौदास घाटी में विभिन्न कार्यशाला, औषधीय पादपों की व्यापारिक खेती तथा गुणवत्ता में सुधार हेतु प्रशिक्षण कार्यक्रम आदि जैसी बुनियादी संभावनाओं में आवश्यक सहयोग की दिशा में कार्य किया गया है। जिसके परिणामस्वरूप चौदास क्षेत्र के कुल 172 किसानों ने 124.5 नाली (2.5 हेक्टेयर) भूमि पर लक्षित प्रजातियों की खेती शुरू की है। घाटी के प्रगतिशील किसानों द्वारा उच्च हिमालयी औषधीय प्रजातियों जैसे जम्बू, चोरु, वन हल्दी, कुटकी, कूट और तगर की व्यापारिक खेती उच्च ऊंचाई वाले गांवों (नियांग, पस्ती, सोसा, पलंगारी) में तथा तेजपात और तगर की खेती कम ऊंचाई वाले गांवों (जयकोट, पंगला और गरकू) में की जा रही है। साथ ही, श्री नारायण आश्रम को औषधीय प्रजातियों के प्रदर्शन स्थल के रूप में तैयार जा रहा है जिसमें लगभग 15 से अधिक उच्च मूल्य वाले हिमालयी औषधीय प्रजातियाँ जैसे की एलियम स्ट्रैची (जम्बू), एंजेलिका ग्लौका (चोरु), एकोनिटम हेट्रोफिलम (अतीस), हेडिकियम स्पाईकेटम (वनहल्दी), ओरिगेनम वल्गारी (वनतुलसी), पिक्चुरिजा कुरुवा (कुटकी), पोर्टेला फुलगेन्स (बज्रदन्ती), पेरिस पॉलीफाइला (सत्तू), पियोनिया इमोडी (चंद्रा), पोलिगनटमे वर्टिसिलटम (मेदा), पोलिगनटमे सिरिफोलैम (महामेदा), फाइटोलैक्का एकिनोसा (हिमालयन पोकबेरी), ससुरिया कोस्टस (कूट), रोसकिया प्रोसेरा (काकोली) और वेलेरियाना जटामांसी (तगर) संरक्षित हैं। साथ ही, किसानों को उनकी आवश्यकताओं के अनुसार प्रदर्शन स्थल से समय समय पर कच्चा माल वितरित किया जाता है। संस्थान द्वारा प्रगतिशील किसानों को औषधीय पादपों की व्यापारिक खेती हेतु हर्बल रिसर्च डेवलपमेंट संस्थान (एचआरडीआई), गोपेश्वर में पंजीकृत तथा भविष्य में उत्पादित कच्चा माल खरीद हेतु विभिन्न सरकारी और गैर सरकारी एजेंसियों जैसे की सुरकुंडा जडी-बूटी समुह, बागेश्वर तथा हयूमैन इंडिया, श्रीनगर के साथ बायबैक व्यवस्था के तहत समझौता ज्ञापन हस्ताक्षरित किया गया है। इसके अलावा विविध कार्यशालाओं के माध्यम से स्थानीय विविध हितधारकों को जैव विविधता के संरक्षण, औषधीय पौधों की खेती को बढ़ावा देने आदि संवेदनशील विविध विषयों पर जानकारी और सहयोग समय-समय पर प्रदान किया जाता है। जिसके परिणाम स्वरूप क्षेत्र की सामुदायिक आजीविका में वृद्धि एवं आत्मनिर्भरता बढ़ेगी। अतः हिमालयी जैव विविधता, प्राकृतिक संसाधनों के संरक्षण एवं संवर्धन हेतु समुदाय विशेष की भागीदारी सुनिश्चित होनी चाहिए ताकि हिमालयी भू-क्षेत्रों में प्राकृतिक, सामाजिक एवं आर्थिक स्थितियों को मजबूती प्राप्त हो सके।



## संयोजक संस्थान

गोविन्द बल्लभ पन्त राष्ट्रीय हिमालयी पर्यावरण संस्थान की स्थापना सन 1988-89 में पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार के स्वायत्तशासी संस्थान के रूप में की गयी। यह संस्थान संपूर्ण भारतीय हिमालय क्षेत्र में वैज्ञानिक ज्ञान को बढ़ावा देने, एकीकृत प्रबंधन रणनीति बनाने व उनके प्राकृतिक संसाधनों के संरक्षण में प्रभाविता के प्रदर्शन और पर्यावरणीय दृष्टि से मजबूत प्रबंधन हेतु मुख्य संस्थान के रूप में चिन्हित है।

## Coordinating institute

G.B. Pant National Institute of Himalayan Environment was established in 1988-89 as an autonomous institute of Ministry of Environment Forest & Climate Change (MoEF & CC), Government of India. The institute has been identified as focal agency to advance scientific knowledge, evolve integrated management strategies, demonstrate their efficacy or conservation of natural resources, and ensure environmentally sound management in the entire Indian Himalayan region (IHR).



गोविन्द बल्लभ पन्त राष्ट्रीय हिमालयी पर्यावरण संस्थान

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### Guidance



Ministry of Environment, Forest and Climate Change  
Government of India

### Facilitation and funding



### Indian partners



भारतीय वन्यजीव संस्थान  
Wildlife Institute of India

