

EASTERN HIMALAYA

Quarterly newsletter of the ATREE Eastern Himalaya / Northeast Regional Office

Khanchendzonga landscape from the Singalila National park, P.C- Dr. Avantika

Data Platforms, Knowledge Commons, and Information Systems: Potential for ATREE Eastern Himalaya

In an era where data drives crucial decisions, research, and conservation efforts, particularly within this complex and vital region, the role of data platforms, knowledge commons, and information systems is paramount. At Ashoka Trust for Research in Ecology and the Environment (ATREE) Eastern Himalaya, leveraging these tools is not merely about enhancing our own work; it is about creating a vital data resource for researchers, policymakers, and concerned members of the public. By facilitating access to the latest data from the region, we can significantly reduce redundant research efforts, foster collaboration, and ultimately strengthen conservation and sustainable development initiatives. This article explores the relevance, potential applications, and transformative power of these systems for the Eastern Himalaya.

Understanding the Concepts

1. **Data Platforms:** Organized digital spaces for data collection, storage, and analysis. They enable researchers, conservationists, and policymakers to easily share and use information.
2. **Knowledge Commons:** Community-run repositories for open knowledge sharing. They ensure valuable information is accessible and built upon by all.
3. **Information Systems:** Tools that streamline data management and enable informed decisions. They efficiently organize and process complex information.

While distinct, data platforms, knowledge commons, and information systems are deeply interconnected. Data platforms provide a structured environment for storing and managing data, forming the foundation. Information systems then act as the operational layer, enabling efficient processing and analysis of that data. Knowledge commons, on the other hand, represent the social and governance layer, dictating how the data and knowledge are shared and utilized within a community. Essentially, data platforms provide the 'what' (data), information systems provide the 'how' (processing), and knowledge commons provide the 'why' and 'who' (sharing and governance).



Current Initiatives: Building the Foundation and Engaging Communities

At ATREE Eastern Himalaya, we are already actively engaged in building and utilizing data platforms and information systems to advance our mission. Our Mountain Biodiversity Database and Information System, developed through a project funded by the National Mission on Himalayan Studies (NMHS), serves as a crucial repository. This system compiles primary biodiversity data generated from our projects and provides a comprehensive bibliography of research papers and articles from the region. This resource not only supports our own research but also offers valuable insights to the wider scientific community.

Furthermore, we've created the website for Big Butterfly Month, a platform that aggregates and disseminates information on butterflies from across India, promoting citizen science and public engagement. This initiative underscores our commitment to making biodiversity data accessible to a broader audience.

A key component of our outreach strategy is our extensive citizen science program. We have been organizing workshops across the Eastern Himalaya to introduce people to biodiversity documentation, fostering a deeper connection with the natural world. To date, we have organized over 100 events, engaging more than 5,000 participants. These events are not only instrumental in generating valuable biodiversity distribution data but also serve as a crucial platform for introducing individuals to the fascinating world of biodiversity, connecting them with experts from around the globe.

Looking ahead, we are actively developing site-based portals for farmers, aiming to provide localized information and support for sustainable agricultural practices. Additionally, we are working on an information system focused on key biodiversity elements of the region, which will further enhance our capacity to monitor and understand the Eastern Himalaya's rich natural heritage. These ongoing and planned initiatives demonstrate our commitment to leveraging data platforms and information systems for effective conservation and sustainable development in the region.

In conclusion, the strategic implementation of data platforms, knowledge commons, and robust information systems holds immense potential for ATREE Eastern Himalaya. By leveraging these tools, we can not only enhance our research and conservation efforts but also empower local communities, foster collaboration, and contribute to a deeper understanding of the region's unique biodiversity. As we continue to build upon our existing initiatives and explore new avenues for data-driven conservation, we are confident that these technologies will play a pivotal role in safeguarding the Eastern Himalaya's natural heritage for generations to come.

Rohit George
rohit.george@atree.org

Site-specific portal development for Sikkim and Darjeeling Himalaya

ATREE, with support from the Rainmatter Foundation, has made significant progress in developing a dedicated site-specific digital portal for the Sikkim and Darjeeling Himalayan region. This initiative is designed to address four key themes that are essential for enhancing the agricultural landscape in the region. The portal aims to promote resilient agriculture practices, offer solutions to mitigate crop depredation by wildlife, facilitate access to government schemes and projects, and improve connectivity to both local and distant markets for agricultural products.

To inform and refine the portal's development, the project team conducted 35 Focus Group Discussions (FGDs) and more than 50 Key Informant Interviews (KIIs) between November 2024 and February 2025. The key sites are Darjeeling-Sittong Valley and Rimbick, Kalimpong-Panbu, West Sikkim-Soreng and Geyzing District, North Sikkim-Dzongu Valley. These engagements provided valuable insights from local stakeholders, ensuring the platform aligns with the region's unique challenges and opportunities.

The development of this portal is essential due to the distinct agricultural challenges faced by the Himalayan region. The region's unique terrain, unpredictable weather patterns, and vulnerability to climate change demand resilient agricultural practices to ensure food security and sustainable farming. Additionally, frequent crop depredation by wildlife is a significant concern, threatening the livelihood of local farmers. Access to government schemes and projects is often limited by communication barriers and lack of centralized information, making it difficult for farmers to leverage available resources effectively. Lastly, the region's geographical remoteness restricts market connectivity, limiting farmers' ability to sell their products beyond local boundaries.

The digital portal aims to address these interconnected challenges by providing vital resources, information, and market linkages in one accessible platform, ultimately improving agricultural resilience and economic opportunities for the region's farming communities. The project is designed to empower local farmers, herders, and stakeholders with actionable knowledge to improve livelihoods and conservation efforts.



Latitude: 27.250358
Longitude: 88.283681
Elevation: 1385.94+10 m
Accuracy: 4.6 m
Time: 09-01-2025 13:17
Note: Middle Sarjadokrioo 2

Sangadorjee FGD

Srijana Sharma
srijana.sharma@atree.org

Springs of Gangtok

Gangtok, the capital of Sikkim, is a city known for its green landscapes, rich biodiversity, and declining water sources. Among these, natural springs locally known as *dharas*, play a crucial role in providing water to local communities, supporting agriculture, and sustaining urban greenery. They are fed by rainfall and the slow movement of water through rocks and soil. In Gangtok, springs provide water for drinking, household use, and irrigation. Many communities depend on these springs, especially in areas where piped water supply is limited. Despite their importance, many springs in Gangtok are under threat due to rapid urbanization and deforestation.

At the Ashoka Trust for Research in Ecology and the Environment (ATREE), we are mapping and assessing springs across 19 wards in Gangtok. We have recorded 44 springs, with Burtuk Ward having the highest number (18%) and Tathangchen the second highest (11%). Our study shows that 91% of the springs are used for drinking, while 9% are used for washing. In terms of water availability, 27% of the springs were intermittent, meaning they flow only during certain seasons, while 73% were perennial, providing water throughout the year.

Through this mapping, we are also collecting data on the discharge rate of the springs and their importance to local communities. We are assessing the environmental conditions of these springs and mapping the surrounding agricultural and forested areas, and documenting key biodiversity indicators. Based on our findings, we aim to work with the Gangtok Municipal Corporation in conserving these springs.



Hans Dhara, DPH and Barbotay gaon dhara. P.C- Niharika Bindal

Niharika Bindal, Intern
niharikabindal8@gmail.com

Turning invasive plants into livelihood opportunities: A sustainable initiative in the Indian Himalaya

The Himalayan region faces a pressing ecological and economic challenge due to the proliferation of Invasive Alien Plant Species (IAPS), which disrupt native ecosystems and threaten local livelihoods. To address this, the project "Value-Added Products from Invasive Plant Species for Improving Livelihoods of Marginalized Communities in Indian Himalaya," supported by the Department of Biotechnology under the Himalayan Bioresource Mission (March 2022 - March 2025), integrates ecological research with sustainable livelihood generation through invasive-based products in the Darjeeling and Kalimpong districts.

The project began with a rigorous scientific approach to identifying and prioritizing IAPS suitable for value addition. A review of 15 academic publications led to the identification of 117 invasive species in the region. Preliminary field surveys were carried out in 36 villages (25



Dye sample from *Eupatorium sp.*, P.C- Yougesh Tamang

in Darjeeling and 11 in Kalimpong), spanning elevations between 900 to 2400 meters. Using a systematic quadrat sampling method 1 km transects with 10x10m quadrats placed every 250 meters interval in every plot. A total of 514 plots were surveyed (334 in Kalimpong and 180 in Darjeeling). Data collection was digitized through Open Data Kit (ODK) forms, and 47 invasive species were documented from the field. Five priority species were selected based on their abundance, ecological threat, traditional knowledge, and suitability for product development: *Lantana camara* (used for bio-briquettes), *Eupatorium sp.*, *Chromolaena odorata*, *Ageratum conyzoides*, and *Mikania micrantha* (primarily for natural dye production), with *Eupatorium sp.* and *Ageratum sp.* also used for herbal soaps. These species offered a promising starting point to convert a harmful presence into a community-driven solution. To build local capacity and support product development, a series of skill-building initiatives were launched in five villages- two in Darjeeling and three in Kalimpong. A total of eight hands-on product development training were conducted on Briquette making, Dye extraction, and Soap making, also three refresher training, and three inception meetings were conducted, engaging 91 women members of 62 Self-Help Groups (SHGs). Participants were trained in the preparation of eco-friendly products from IAPS, enabling them to access alternative livelihood options. The sessions included three briquette-making workshops (using *Lantana camara* and *Eupatorium adenophorum*), two natural dye extraction workshops (focusing on *Eupatorium*, *Chromolaena*, *Ageratum*, and *Lantana*), and three herbal soap-making sessions. Refresher training helped deepen practical understanding and refine production quality.

The project aims to ensure the long-term sustainability of these efforts, where three enterprise groups were established and named as Women Entrepreneurs Organization and registered them under the village Gram Panchayat. These groups received hands-on training in entrepreneurship, with a focus on building rural-to-urban market linkages. Support was extended in branding, design, packaging, and the development of bilingual informational fliers in Nepali and English to raise awareness about the innovative products and their environmental benefits. The women entrepreneurs mastered the use of invasive plants to create value-added products such as briquettes, herbal soaps, and natural dyes.

Through participation in local festivals and agricultural fairs, the enterprises earned over INR 28,000 in their first year of sales. A Cross Exchange Visit was organized on 26–27 March 2025 at Sittong village, Kurseong Block to further strengthen collaboration. WEOs from all three project site villages came together for two days of interactive learning, field demonstrations, and peer exchange.

The event emphasized knowledge sharing on production techniques, quality enhancement, and market strategies. This initiative demonstrates a powerful model for conservation-driven development where women-led enterprises combat biodiversity loss while boosting rural incomes. It highlights the potential of community-based action in transforming environmental issues into sustainable livelihood solutions, setting the stage for long-term impact and replicability across mountain regions.



Briquette from *Lantana camara* . P.C- Yougesh Tamang

Yougesh Tamang and Tara Chettri

yougesh.tamang@atree.org/tara.chettri@atree.org

14th World Pangolin Day in Buxa Tiger Reserve

14th World Pangolin Day was celebrated on 17th February, at Parshwanath Smriti Vidyapith High School, Dikshin Shibkata, Alipurduar. This event was organized by ATREE Eastern Himalaya funded by the West Bengal Biodiversity Board, aiming to raise awareness among the youth about Pangolin conservation, particularly in Buxa Tiger Reserve. This year's theme for the 14th World Pangolin Day was "Legacy of Youth in Pangolin Conservation". The event brought together students, teachers, researchers, and forest officials, fostering discussion on the ecological importance of Pangolins and the urgent need for their protection as this species is on the brink of extinction. The program involved a total of 12 students from class 9 and 11 and divided into 3 groups of four. The event was filled with interactive sessions, creative activities, and meaningful dialogues, engaging participants in pangolin conservation efforts. Participants shared their personal experiences of encounters with pangolins, fostering a deeper connection to the species.



Group photo. P.C-Mingma Tamang



Activities with students on the event. P.C-Mingma Tamang

They also visually represented their collective commitment to Pangolin conservation through drawing and action plans, illustrating innovative ideas for protection efforts. Participants also presented their conservation strategies, engaging in a thought-provoking discussion with forest officials, who evaluated the feasibility and impact of their ideas. A brief talk was delivered on pangolins, their conservation importance, and the need for their conservation in Buxa Tiger Reserve by the chief guest. The interactive sessions, creative engagements, and insightful discussion strengthened their understanding of pangolin protection. The event not only raised awareness but also instilled a sense of responsibility among participants, making it a meaningful step towards pangolin conservation.

Priyanka Rai

priyanka.raai@atree.org



Tonglu Group Photo. P.C-Aditya Pradhan

Birding Guide Training in Latpanchar and Maneybhanjyang, Darjeeling Himalaya

ATREE, with support from the Oriental Bird Club, UK, and Rufford Foundation, UK, organised two capacity-building workshops to promote bird tourism in Darjeeling. The first workshop was held on 28th–29th January 2025 in Latpanchar, engaging 17 local community members of which 14 participants completed the training. The second took place on 11th–12th February 2025 in Maneybhanjyang, training 15 local community members in

collaboration with Tonglu Range, Darjeeling Forest Division. Both workshops aimed to train local community members in bird identification, guiding techniques, and conservation awareness, equipping them to support bird tourism and act as ambassadors for bird conservation. The training combined theoretical and practical sessions, covering topics such as bird and butterfly identification, the biogeography of Darjeeling, endemic birds of the Eastern Himalaya, and the diversity of important bird groups. Field sessions complemented classroom learning, providing hands-on experience in bird and butterfly identification and observation. Participants recorded 32 bird species and 6 butterfly species in Latpanchar, while those in Maneybhanjyang identified 34 bird species using the Merlin Bird ID app and eBird. These observations were uploaded to citizen science platforms like eBird and iNaturalist, integrating participants into ongoing conservation efforts. The workshops promoted a greater understanding of avian biodiversity while building local capacity to create livelihood opportunities.

Aditya Pradhan

aditya.pradhan@atree.org

ATREE Eastern Himalaya Launches AMP-Himalaya Project with Inception Meetings in Sittong III and Yangmakum

The Ashoka Trust for Research in Ecology and the Environment (ATREE) Eastern Himalaya recently organized inception meetings in two Gram Panchayats—Sittong III and Yangmakum as part of the Action for Mountains and Peoples Himalaya (AMP-Himalaya) project. These meetings aimed to introduce the project's objectives and engage local communities in discussions on biodiversity conservation, climate resilience, and sustainable livelihoods.

In Sittong III Gram Panchayat, meetings were conducted in 6th Mile Aingtaar, Chambi Gaon, and Kangdung Village, while in Yangmakum Gram Panchayat, they were held in Yang Village, Panbu Village, and Kambal Village. Attendance varied between 36 and 44 participants per session, demonstrating strong community interest and involvement.

The AMP-Himalaya project emphasizes key areas such as biodiversity monitoring, resilient livelihoods, place-based education, capacity building, landscape restoration, and energy efficiency. These focus areas aim to foster comprehensive conservation efforts and promote sustainable development in the Eastern Himalayas.

The inception meetings provided a platform for local stakeholders to exchange insights, express concerns, and align with the project's objectives. Moving forward, ATREE will work closely with communities to implement targeted interventions, ensuring that conservation efforts are effective, inclusive, and sustainable.



Presentation by Tshering D. Bhutia . P.C-Aditya Tamang

Tshering Dorjee Bhutia
tshering.bhutia@atree.org

Yak herders consultation meeting at Lachung

A consultation meeting was organized by ATREE at Dzumsa Hall, Singring Lachung, for the project “Conservation of the Snow Leopard and associated biodiversity elements, augmenting local livelihoods in key sites of North Sikkim,” funded by the Eicher Foundation. A total of 17 participants from the yak herders group attended the meeting and actively engaged in the discussions. The stakeholders provided feedback on managing human-wildlife interactions, mainly focusing on addressing predation by Snow Leopards and feral dogs. The discussion also centered on understanding the need for effective mitigation strategies and suggesting ways to improve yak herder livelihoods, including diversifying income sources and enhancing market access for yak-based products from the yak herders’ perspective.



Mapping out yak station. PC-Pema Yangden Lepcha

Through Participatory Rural Appraisal (PRA) activities, we mapped seasonal migration patterns, yak station locations, and areas of high predation intensity. This helped us identify specific locations most vulnerable to wildlife threats, which will guide our pilot mitigation interventions. During the activity, it was also emphasized that the impact of transboundary movement restrictions on traditional herding routes has contributed to the decline of yak herding practices.

Key concerns raised by yak herders included the growing population of feral dogs, increased predation by tigers, and the spread of livestock diseases linked to introduced species. They also pointed out the economic challenges yak herders face, such as limited market access, high labor costs, and declining profitability. There is a need for government support, including compensation for predation losses, improved veterinary services, and stronger policies to sustain traditional yak herding practices. One major recommendation from the meeting was to promote interbreeding between yaks from Tibet, Ladakh, or Bhutan to enhance genetic diversity, a practice that was once common in the past decade. Additionally, stakeholders mentioned the need for exposure visits, training programs, and capacity-building for younger generations to ensure the continuity of yak herding traditions.

Pema Yangden Lepcha
pema.yangden@atree.org



Introducing our new team members



Mr. Ashwin Chhetri

Ashwin Chhetri has joined as a Database Associate for the AMP Project and will be based at the Gangtok Office. He hails from Bijanbari, Darjeeling, and holds an M.Sc. in Computer Science from Christ University, Bangalore. His interests include data-driven solutions, cloud technologies, and exploring innovative ways to improve digital systems.

Mr. Bishal Rai

Bishal Rai has joined as a Project Finance and Administrative Officer in the AMP–Himalaya Project. He will be based in the Regional Office, Gangtok, Sikkim. He is from Kalimpong District and holds a B.Com (Honours) from St. Xavier's College, Rajganj, and an M.Com from IGNOU. He brings over 7 years of experience in project finance and administration, having previously worked with CEL, Sikkim University. He has also collaborated on various publications with Sikkim Akademi; Gangtok, Pines Publication; Darjeeling, and the Sikkim High-Level Committee (12 left-out communities for tribal status). His interests include travelling, socio-economic activities, documentary filmmaking, and sports.



Mr. Repzum Lepcha

Repzum Lepcha has joined as a Field Assistant for the Resilient Himalaya: A Participatory Evidence-Based Approach to Landscape Restoration (RE-HIM) project project supported by Mastercard's Priceless Planet Coalition (PPC) program. He is from Bongten, Gyalshing District, Sikkim, and holds a Bachelor's degree in Political Science from Nar Bahadur Bhandari Government College, Tadong.



Ms. Niharika Bindal

Niharika Bindal has joined as a Research Intern for the project titled "Assessment of Biodiversity, Springs, and Agriculture Mosaics in the Urban Landscape of Gangtok, Sikkim, Eastern Himalayas." She holds an M.Tech in Environmental Engineering from SRM Institute of Science and Technology, Kattankulathur, Tamil Nadu. Her interests include sustainability and environmental impact, nature-based solutions for environmental management, biodiversity conservation, and ecosystem services.



Ms. Yashvi Dewan

Yashvi Dewan has joined as an intern under the Rufford-funded project aimed at promoting bird tourism in Darjeeling. She is from Singtam Tea Estate, Darjeeling, and holds a Master's degree in Zoology from Darjeeling Government College. During her time with ATREE, she will be engaging with local communities through interviews across the Darjeeling and Kalimpong districts of West Bengal.





1. Action for Mountains and Peoples-Himalaya funded by Rural India Supporting Trust (RIST), USA
2. From Forests to Farms: Utilizing Agroforestry to enhance resilience to climate change impacts and foster biodiversity in the Sikkim-Darjeeling Himalaya supported by National Mission on Himalayan Studies, Ministry of Forest, Environment and Climate Change (lead by Sikkim University)

- Bida, Y.B. and Rai, M. (2025). Photographic Record of Eurasian Otter (*Lutra lutra*) from Namdapha Tiger Reserve, Arunachal Pradesh, India. IUCN Otter Spec. Group Bull. 42 (1): 9 – 13
- Pradhan, A., Khaling, S., & Saha, G. K. (2025). Exploring foraging niche dynamics of woodpeckers in the non-protected forests of eastern Himalaya. *Ornithology Research*, 33(1), 1-19. <https://doi.org/10.1007/s43388-025-00227-2>
- Paul, M. M., Pradhan, S., Chettri, A., Khaling, S., & Vanak, A. T. (2025). Putting one health to the test: Operational challenges and critical reflections from the global South. *One Health*, 20, 100963

ATREE's mission is to promote socially just environmental conservation and sustainable development by generating rigorous interdisciplinary knowledge that engages actively with academia, policy makers, practitioners, activists, students and wider public audiences. ATREE's Northeast / Eastern Himalayas Programme has a direct presence in the Darjeeling and Sikkim Himalaya with a range of local partners in the other states of North East India.

Dr. Sailendra Dewan
(sailendra.dewan@atree.org)

Pema Yangden Lepcha
(pema.yangden@atree.org)