

Indian Regional Association for Landscape Ecology

# PANORAMA

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## Landscape Approach and SDGs

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Global environmental concerns and public health issues have placed [Sustainable Development Goals](#) (SDGs) as an important instrument for well-being of nature and people. However, the complexity involved in executing and accomplishing the SDGs is a big challenge, specifically in developing countries like India where development aspirations confront the nature conservation and environmental stability. Ironically, nature is the source of development, but the lack of apparent democratic framework is a limitation to advance the SDGs. However, it has been realized and advocated that a unified approach would be the way forward. Experts and policy makers are increasingly coming together for landscape approach towards integrated planning and management. Accordingly, the call for developing a framework to bring synergy and minimum trade-off between development and conservation is loud and clear for practical solutions. The recent efforts by the state of Uttarakhand to consider [Gross Environment Product](#) (GEP) alongside Gross Domestic Product (GDP) as a measure to focus on natural capital is a welcome step, and hope this allows for consideration of environment health in development planning.

A review of scientific advancements in datasets derived from big data for monitoring the SDGs published by Allen et al., this month in Sustainability Science clearly highlights that the SDGs suffer from a lack of national data needed for effective monitoring and implementation. Almost half of the SDG indicators are not regularly produced, and available datasets are often out-of-date. Similarly, the United Nations [Systems of Environmental Economic Accounting](#) (SEEA), an internationally accepted framework for incorporating nature into national accounting systems, requires national standards for planning and execution. The acceptable national standards that would suit cross-walking of international standards are not readily available. Landscape approach, backed by strong landscape ecology and technology such as Remote Sensing and Spatial Analysis Tools, can address these gaps.

Resources and capacities development are critical for the concept to bring to action and tangible outcome. Several organizations and networks have taken up these tasks. The [Landscape Resilience Fund](#) (LRF), launched recently, is one such effort that relies on landscape approach. Fostering such opportunities, IRALE can develop strategies to work towards effective implementation of SDGs.

After all, environment health is public health and development in true sense.

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Ramesh Krishnamurthy

## Landscape Ecology and IRALE

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In the age of the anthropocene, landscape ecology becomes an increasingly needed research discipline through its outstanding potentials to look on systems, integrate manifold scientific and practice-oriented perspectives and to provide powerful tools for exploring sustainability futures. Biodiversity losses and the limited achievement of the UN Sustainable Development Goals as well as the significant failures in halting climate change are key global challenges that scrutinize intergenerational equity and chances for upcoming generations. Landscape ecology can inform about the best intervention opportunities in terms of scales, processes and structures in nature and help to identify those governance instruments that support the implementation of sustainable management practices, holistic planning and wise policies.

Nature as such does not know harsh borders and is thus subject to manifold needs for cross-boundary consensuses and actions. IRALE, with its regional context in South-East Asia, one of the fastest growing and most densely settled global areas, can play a key role, when it comes to science-based policies to manage biodiversity and resource provisioning hotspots, such as the Himalayan water towers, the vital hydrological veins in the region such as Brahmaputra, Ganges and Indus, the seashores and ocean from pollution, overexploitation, urbanization and devastation. Extremely rare species such as tigers or elephants attract international interest, while they pose at the same time challenging management questions to disentangle human-wildlife conflicts with local dwellers. Medical plants from the still undisturbed forests or higher mountain ranges need to be regarded not only as a field of current economic interests, but as a cultural and natural heritage for future generations. All those multi-faceted aspects show, where landscape ecology can contribute indispensably to societal decisions - where and how to prioritize resource exploitation and / or nature conservation. It was a great pleasure to assist to the development of IRALE that was started so successfully by Prof. Felix Kienast (IALE president from 2011 – 2015) and Dr. Ramesh Krishnamurthy from Wildlife Institute of India and to make use of this wonderful opportunity to meet many more Indian scientists, to actively collaborate on academic exchange opportunities, joint research initiatives and shared visions.

My hope and warm wish for IRALE to be a successful and sustainable development of a vibrant landscape ecology community that inspires now and in the future many scientists to join, remain and contribute. I am looking forward to learn more about this success, see joint events, a growing network and accents in how to shape our understanding what landscape ecology is and what it can do for people and nature!





## Prioritizing Traditional Knowledge for Managing Bio-cultural Landscapes

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CSIR- INSTITUTE OF HIMALAYAN BIORESOURCE TECHNOLOGY

The Himalaya, a global biodiversity hotspot, is also home to diverse tribal communities such as the Apatanis, Changpas, Gaddis, Mishmis, and many more that have their own unique culture. The Himalaya, therefore, should also be idealized as a rich bio-cultural landscape where the resident communities have been thriving for ages. Their demands for medicine, fuel, fodder, wild edibles, dye, fiber, tool, etc. are primarily met from the surrounding natural resources. Thus, these communities hold vast Traditional Knowledge (TK) on the use and conservation of natural resources. Also, their knowledge of landscape characteristics from where they source the natural resources is hugely unique. This knowledge has wider implications for science, society, and the environment.

Pursuing leads obtained through TK of local people has provided many important discoveries of the modern-day such as Papaverine, Quinine, Reserpine, etc. Similarly, the TK of communities on weather and climate is now argued to be a key input towards devising adaptive strategies in the face of global climate change. Understanding of climate perception of the Himalayan communities has been found to significantly correlate with the recorded meteorological data. This becomes all the more important in the Himalaya as they are highly sensitive to changing climate and at the same time lack weather monitoring stations.

Ironically, TK is fast declining in the Himalaya. There, now exists a gap between theoretical knowledge and practical use of the species. As evident, a lesser number of species are now being used by the communities and a decline in the number of TK holders has been reported. Also, variations in TK with age have been noted wherein the younger generation (< 40 years of age) is far less knowledgeable than the elder generation (>60 years). Similar trends have been noted with regards to the location of the communities. Villages located near the markets have been identified to be losing TK when compared to villages located in the hinterlands. Thus, market forces also have a role in guiding TK and associated landscapes.

It is high time that we prioritize and build upon the TK of the communities. This is of utmost importance especially in the Himalaya as they are not only bio-rich but also culturally diverse. This will not only help in designing suitable strategies and policies for landscape conservation in the Himalaya but also ensure the sustenance of the communities.

**"What we are doing to the forests of the World is a mirror reflection of what we are doing to ourselves and to one another"**

**–Mahatama Gandhi**





RAMESH KRISHNAMURTHY

## In Focus: The Himalayas

AMRITA NEELAKANTAN | NETWORK FOR CONSERVING CENTRAL INDIA

**Introduction:** The youngest fold mountain range on the planet that continue to grow is also the highest in the world. They create the formidable Himalayas biogeographic zone – shielding the Indian subcontinent from Siberian cold and rebounding monsoon showers back towards the oceans. The Himalayas span 2400 kilometres as a mountain arc and obviously a steep altitudinal gradient. This allows for a rich and thriving forested ecological landscape – from the alpine western Himalayas to the wet and incredibly biodiverse eastern Himalayas. The eastern Himalayas also are a biodiversity hotspot, recognized worldwide to be the homes of species found nowhere else on the planet.

**Biodiversity:** Each sub-section of the Himalayan biogeographic region deserves a deep dive into the biodiversity it harbours. Perhaps even within taxonomic groups there are encyclopaedic tomes to explore of nature's wonders. The Himalayan biogeographic region straddles a transition zone between the Palearctic and Indo-Malayan realms and consequently has species from both. It bears repeating that the biodiversity in the region is fundamentally driven by topographic complexity from east to west and north to south within the altitudinal and precipitation gradients. One of the largest family of flowering plants in the Himalaya hotspot regions are Orchids, with 750 species. While orchids, even at these high amounts of diversity seem plausible in a region so vast and so complex, it is even more surprising that vascular plants are found at some of the highest elevations in the Himalayas in a land of stone and snow – consider cushion plants (found at 6100 m) and a high-altitude scree plant in the mustard family, *Ermania himalayensis* (at 6300 m!). To talk about the bird diversity in the Himalayas would be sure to leave whole families and many endemics out in the newsletter. As professionals, who are directly working in and with natural systems, we often forget or overlook that what is commonplace to us is mind-boggling to those outside of the domain – for example, bar-headed geese that winter in the Indian subcontinent and to get here fly over(!) the highest mountains on the planet.



RAMESH KRISHNAMURTHY



Ramesh Krishnamurthy

**People and Nature:** The people of the Himalayas remain some of the most fierce stewards of nature and wildlife conservation. Tribes in the north-east Himalayan region have gone from hunters to enforcement officers. The Chipko-movement globally recognized for its grassroots influence on bottom-up management of natural resources began in the Himalayas. The pastoralists in the western Himalayas continue to walk the same paths that all the Himalayan ungulates and their predators have since humans first came to these parts of the world, solemnly documented by scavenging raptors cruising thermals. While the Himalayas are under severe threat from deforestation, industrial pollution and poaching, there still remains hope for people and wildlife to find their way forward, because like the Himalayas, the people of the Himalayas have stood strong, immutably proud in their care of the place they call home.

For a showcase of this special relationship, we provide the members of IRALE and IALE a feast of short films to check out from the following links:

- [The Firefox Guardian](#)
- [Wildlife Our Lifeblood](#)
- [The Jujurana's Kingdom](#)
- [Thung Thung Karmo – Black Necked Crane](#)
- [The Living Bridges of Meghalya](#)
- [Eastern Himalayas: Ancient Risks – Future Threats](#)



Ramesh Krishnamurthy



# 1st Annual Symposium of IRALE: Call for Registration and Abstract Submission

3-5 OCTOBER 2021  
SARISKA, RAJASTHAN

1st Annual Symposium of Indian Regional Association for Landscape Ecology (IRALE) would take place in Hybrid Format (Virtual and In-person).

Registration Open: 1st July 2021

Registration Close: 15th August 2021

More details will be on IRALE website soon!

## Members' Page

**Member of IRALE and IALE:** You can [register](https://www.irale.org/registration.php) to become a member of [Indian Regional Association for Landscape Ecology](https://www.irale.org/) (IRALE) at <https://www.irale.org/registration.php> and will then automatically become a member of the International Association of Landscape Ecology (IALE) (<https://landscape-ecology.org/>). Being a member of IRALE, one can avail the benefits/opportunities such as newsletters, access to landscape ecology journal, participation in conferences, resource materials and updates on recent developments in the science and application of landscape ecology.

**Functioning of Working Groups:** Several Working Groups (WG) have been formed and IRALE members, during registration, are required to specify three WGs with preference. The list of members' names against each WG will be updated on IRALE Website in due course of time. Based on the preference specified by each of the member who registered or updated, the bubble diagram below reflects the interest level for various WGs (all three preferences combined). These groups are dynamic, as more members join and express their interest in different WGs. Based on the first preference for each WG, the members form the core team. From the core teams, thematic champions and leaders shall drive the agenda and enable both mentorship and peer-to-peer learning. If interested, members are free to participate and contribute to more than three WGs.

