



25 Years of Achievements on Biodiversity Conservation in Nepal



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LANDSCAPE CONSERVATION APPROACH AND BIODIVERSITY CONSERVATION IN NEPAL

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The Convention on Biological Diversity (CBD) emphasizes and advocates for “landscape and ecosystem approach” for conservation, that implies coordination and collaboration among actors responsible for various land use management, irrespective of their jurisdictional and administrative boundaries. While Sustainable Development Goals (SDG, goal 15) of the United Nations, stress on biodiversity, forests, rangelands and deserts, ensuring the conservation, restoration and inter alia, sustainable use of terrestrial ecosystems, Nepal reiterates its commitment towards SDGs and Aichi target under CBD while reflecting those commitments through National Biodiversity Strategy and Action Plan (NBSAP). Nepal has achieved significant positive results in its conservation efforts, through a number of conducive policies and institutional arrangements, ensuring community engagement and benefit sharing, shifting from top down measures to “landscape level approach” in nature and species conservation, developing corridors and bottlenecks to connect large protected area network. However, the inter-ministerial collaboration, both horizontal and vertical, remains still an issue to achieve greater impact of landscape level conservation. With recent state restructuring process, the challenge may remain more, as this needs strong coordination among all three levels of government system in the country, irrespective of their jurisdictional and administrative boundaries.

Understanding Landscape conservation approach

The “Landscape conservation approach” is an evolving process, and discussed in recent years, particularly in 1990s. However, the concept evolved from the basic principles Carl Troll’s ‘landscape ecology’ in 1939. The concept has two basic dimensions, a) species do not know physical boundary but they have right to exist and proliferate, and b) need to consider both human and physical geography at scale. This is the basic reason, where global contemporary discussions and scientific understanding to manage living organisms and species beyond their “protected” boundaries. This resulted the landscape level conservation approach, considering biodiversity conservation, both at species and ecosystem level, beyond the defined habitat such as protected areas. However, the landscape conservation approach is still evolving, and do not have a well-defined definition, and varied in different context.

Biodiversity status in Nepal

Sandwiched between Tibetan plateau and Gangetic plains, Nepal offers many niche climate with its very high altitudinal variation within short geographical distance. This specific location harbors rich faunal and floral diversity in the country. Within very few kilometers of aerial distance, one can enjoy subtropical Sal forest to upper temperate Rhododendron, supporting habitat of Rhino to

Red panda, respectively. In less than 0.1% of global land area, Nepal is home to 9.3% (852) of global bird species. Floral diversity in the country represents 2.3% (465) of lichens, 5.1% of bryophytes (853) and 2.7% of angiosperms (5,856) of global population. More than 181 mammal species (4.5% of global species) and 2.6 % of moths and butterflies are recorded in the country. We are still exploring new species. Our scientists recently found new species under Asteraceae family in western Himalaya and named as *Saussurea ramchaudharyi*.

Nepal's journey: From Species, Localized efforts to Transboundary Landscape Conservation

Global efforts on biodiversity conservation is considered formally initiated in the United states when Yellowstone national park was declared in 1872, which is also considered as world's first protected area aiming to conserve faunal species in their designated habitat. Nepal follows this path after 100 years when it declared (Royal) Chitwan National Park (CNP), the first protected area in the country, aiming to conserve mega species like Rhino and Tiger. Although, declaration of CNP can be discussed as formal attempt to biodiversity conservation, Nepal initiated such efforts before the date, such as *Gaida gasti* (Rhino patrol). Nepal's first national code, Muluki Ain 1852/53, also provisioned for conservation efforts such maintaining forest cover in water source, protection of water catchment areas, though, these provisions were not directly towards biodiversity conservation, as such. Until 1990s, Nepal's biodiversity conservation efforts were particularly based on the principles of specific habitat conservation within the specified boundaries. Declaration of Annapurna Conservation Area (ACA) in 1986 was based on holistic conservation while ensuring community participation to conservation. The ACAP model is well in line with present landscape approach, considering

human landscape together with the ecological processes.

Nepal has already started to explore conservation beyond the protected areas system before the UN Convention on Biological Diversity in Rio, 1992, learning from rapid habitat degradation, and fragmentation. While Nepal signed CBD, this has been instrumental to adopt landscape approach, considering human landscape in biodiversity conservation. Immediately after Nepal signed CBD, integrating human landscape in ecosystem was attempted in Nepal's Makalu Barun National Park and Conservation Area (MBNPCA). The conservation area was later declared as buffer zone, making consistence and in line with buffer zone management regulation. The concept of buffer zones around the protected areas, ensuring community participation, and also ensuring benefits to these communities from the protected areas was fully internalized by the state law and policies. The buffer zone management regulation significantly contributed in biodiversity conservation, and conservation of mega and keystone species. The corridors and bottlenecks management, connecting protected area system was introduced in Terai Arc Landscape (TAL), encircling 11 protected areas in Nepal and India. Combination of buffer zone concept, and later corridors and bottlenecks is towards adopting landscape approach to conservation in early 2000s. Increase in population of mega species like Rhino in Chitwan, Tiger in various protected areas of Terai, are significant achievements from the implementation of this approach, while also benefiting to communities.

Despite about 24% of Nepal's area under protected area system, which is far more than global average of 10%, this may not be adequate to address threat to biodiversity. Besides, establishing and managing such large scale protected areas is expensive in



countries like Nepal. Important dimension is human landscapes, and landscape required for human welfare such as waterscape, agriculture landscape, if not considered, part and parcel of overall management approach, is not effective to sustainability of these resources. The reason, Nepal shifted to landscape approach to address these challenges, as also envisioned in its National Biodiversity Strategy 2002, later succeeded by National Biodiversity Strategy and Action Plan 2014. These sectoral policies, together with National development plans, also emphasized the need of landscape approach to conservation for human welfare. Under the directions of these plans, and policies, Nepal has already declared large area under landscape management. The Kailash Sacred Landscape, Kanchanjunga landscape, Terai Arc Landscape, Chitwan-Annapurna Landscape, Sacred Himalayan Landscape are already declared. The Western Mountain Landscape is under consideration. With these functional landscapes, Nepal's policy to enhance transboundary cooperation among adjoining countries, such as China and India in Kailash sacred landscape, India and Bhutan in Kanchanjunga landscape, and India in Terai Arc landscape, not only helps to strengthen capacity of stakeholders, but instrumental in bilateral cooperation in combating illegal trade, and wildlife crime. Recently, Government of Nepal has accessed the Nagoya protocol on access and benefit sharing (ABS) under the CBD. At the meantime, Nepal is developing ABS bill, if comes into force as parliamentary

Act, will be an important milestone in landscape approach to conserve genetic and biodiversity resource while ensuring benefits to local communities.

Conclusion

Landscape level approach provides ample opportunities, not only in conserving Nepal's valuable biodiversity resources, but also opens for bilateral cooperation with neighboring countries to combat wildlife crime, and illegal trade. Strong collaboration among various institutions, both vertical and horizontal, is prerequisite. As envisioned in Nepal's biodiversity strategy and action plan, holistic approach within identified landscape would optimize resources use, and thus contribute to sustainability. Nepal has already entered into decentralized federal structure, which also provides opportunities to effective participation of local governments and communities. However, benefit sharing of these resources would be an issue. In order to achieve Nepal's commitment to Aichi target, and also sustainable development goals, landscape would be an appropriate approach and effective development solutions to address conservation and development challenges of the country. Strengthening bilateral relationship, and transboundary cooperation between the neighboring countries, not only helps strengthening capacity of Nepali stakeholders and implementing agencies, but also suffice for collective global commitments.