

HIMALINES;

Legal frameworks for Conservation of Biodiversity and Ecosystem Services in the Himalayas



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BACKGROUND

HimaLines is a multi-disciplinary project involving law, ecology and social anthropology. By taking a cross-disciplinary approach the aim is to get a better understanding of the effects of different legal frameworks on maintaining biodiversity and ecosystem services in different ecological, economic and cultural settings in high-altitude forests of Nepal.



STUDY AREAS (i) Annapurna Conservation Area, (ii) Shivapuri Nagarjun National Park, (iii) Langtang National Park

NEPAL

- part of the Himalayan biodiversity hotspot
- one of the poorest countries in the world
- growing population
- increasing demands on ecosystem services
- low carbon economy country
- per capita carbon emissions < 0.11 metric tons CO₂ (182 Nepali citizens = 1 US citizen)
- ca 70 % of the population is forest dependent
- traditional land-use: transhumance, forestry, animal husbandry (forest leaf-fodder and litter), agriculture, collection of edible/medicinal/aromatic plants.
- forest in focus: warm temperate - mid elevation oak-laurel 2000 – 3000 masl.
- Climate change as a new threat to the high altitude ecosystems



Designation of national parks and other protected areas is a key legal instrument for protecting biodiversity. Development of a legal framework capable of safeguarding the surrounding unprotected matrix landscape is of great importance for sustainable use of biodiversity and forest resources in Nepal.

LAW

Obligations to protect the environment and the ecosystems follow from international treaties and for Nepal also from the draft for a new constitution.



Internal legislation and legal practice must be developed in order to meet the demands from international and constitutional law. Legal mechanisms giving the ecosystems necessary protection and in line with the needs of the population, customs and culture, need to be developed - built on scientific knowledge on ecosystems and biodiversity and on the effects of legal regulation, hereunder results from law & economics and behavioral economics. Comparing differences in regulation, management, biodiversity and forest structure of the different national parks and buffer zone areas, is a way to achieve such knowledge.



HimaLines will analyze:

- the regulations in National Parks and Buffer Zones and their impact on biodiversity and ecosystem services
- the distribution of land rights and title system in different areas and the impact for biodiversity
- the need for new regulation caused by climate change and change in livelihood and economy
- impact of traditional use of medical plants and of bio-prospecting for the biodiversity
- the effect of the legal framework in negotiating potential conflicts between the needs of local communities and conservation
- how differences in legal frameworks between National Parks, Conservation Areas, Buffer Zones and the surrounding land are reflected in local land-use practices, influencing biodiversity, forest structure and ecosystem functions

ECOLOGY

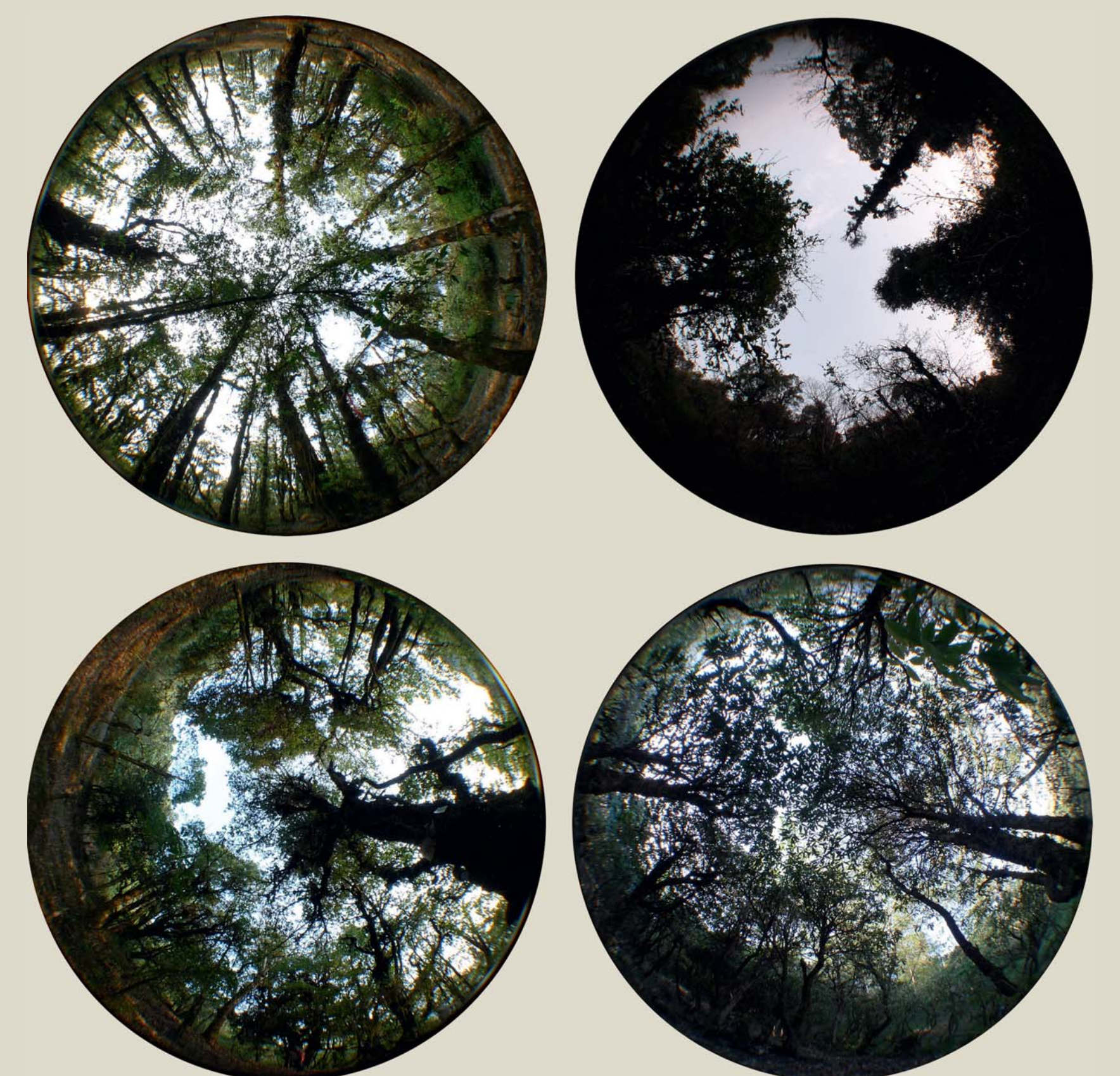
HimaLines investigates woody biodiversity, forest structure and regeneration, crown cover and carbon stock in forests with differing legal regimes (inside and outside protection).

Parameters

- species richness (woody sp)
- tree height
- DBH
- canopy cover (hemispherical photography)
- aspect (N, E, SW)
- elevation (2200/2500/2800 masl)
- soil chemistry
- distance to village
- history of use (semi structured interviews with villagers)

Different legal frameworks result in differing land-use practices and consequently differing biodiversity, carbon stock and regeneration capacity of the forest:

- (i) Woody biodiversity, affected by land-use, differs between protected and unprotected areas
- (ii) Forest structure/regeneration differs between protected and unprotected areas
- (iii) Carbon stocks differ depending on land-use regimes and aspect
- (iv) Forest under protection is less degraded than unprotected forest



CONSERVATION

Forest conservation issues have great public interest in Nepal as subsistence farming (integrated agro-forestry) is widespread. Evidence-based conservation is essential for lowering conflict levels and assuring that different stake-holders respect outcomes.



Collaborators

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