

Eastern Himalayas

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Gilding the lily and friending the fern

When I first visited Bomdo village it seemed like a random hotchpotch of currently cultivated and regenerating shifting agriculture fields, palm, citrus and bamboo plantations, and wet rice fields. That was four years ago. Today, I understand it as a well-defined landscape with almost every patch, in fact every tree and stream, owned and managed by an individual or family or clan. Such is the intricacy of the landscape around an Adi village in the Upper Siang district in Arunachal Pradesh.

Bomdo is located close to the Siang, and the river skirts the village owing to the terrain. In late April, eight species of cuckoos call constantly, often two or three calls overlapping, like cuckoo clocks that need no rewinding. This time of year, the shifting cultivation landscape around the village features tiny patches of lilies flowering at the boundaries of individually owned patches. This is a sign for the Adi to sow rice. But the importance of this bloom goes beyond ornamenting the farm or signalling rice planting time.



Crinum amoenum, used to mark boundaries of shifting agriculture fields .

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The landscape around Bomdo village.

Crinum amoenum is used by the Adi to demarcate individual plots within a larger shifting cultivation mosaic. The plant is fire-hardy, slow-growing and propagates through tubers. It is locally called *riksu sodok*, meaning 'boundary ground orchid', and is used to resolve boundary issues between shifting cultivators. The size of individual plant tubers indicates when it was planted and how old the patch is, or who it belongs to. In the past, the Kebang (traditional Adi institution) has resolved patch ownership issues based on the location and age of this plant in the field.

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The Adi also seldom clear another plant from their shifting cultivation patches. It is locally called *asi gebinyé*, 'the one that brings water'.

Helminthostachys zeylanica has been reported as a medicinal plant from other sites. The fronds are reported to cure acute back pain caused by sciatica, and are also used as a laxative, intoxicant and painkiller; the rhizomes are used in treating dysentery, sciatica and malaria. However, the Adi retain the plant as they believe it improves agricultural production by retaining soil moisture and are oblivious to the medicinal uses of the plant!

This year, the rains in Upper Siang district were relatively poor and the Bomdo villagers were concerned for their crops. Then, a group of villagers went deep into the forest to cut a particular plant, locally called *alu layan*, that is believed to cause rain. For almost a month after that it rained continuously!

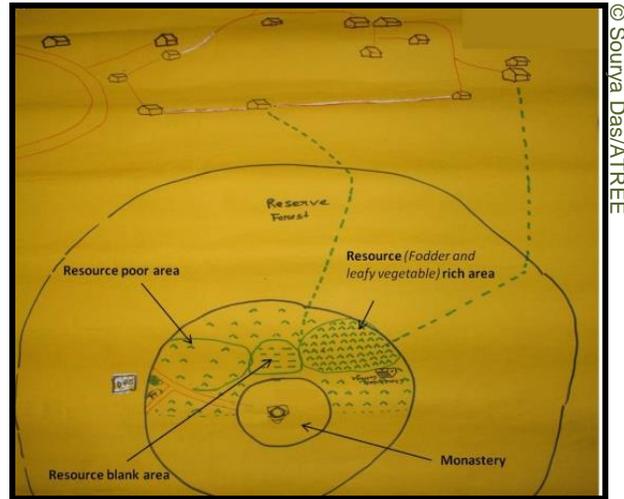
To me, this worldview of a remote farming community, within which different plants are used based on the community's knowledge or belief systems tailored to the local needs, is very interesting. I hope to document many more such uses and adaptations as a part of my doctoral studies here on the patterns and processes of vegetation recovery following shifting cultivation.

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Resource mapping in West Sikkim

A participatory resource mapping exercise was organized with communities living around the forests managed by the Pemayangtse monastery in West Sikkim. This is a part of the ecological and social assessments being carried out under the project titled 'Integrated approaches to adaptive resilience based management of forests for supporting agro-ecosystems in the Sikkim-Darjeeling Himalayas'. The objective of the exercise was to identify forest resources that communities depended on and benefited from.



Forest resource map prepared by the people of Dokothang village.

Key informants included monks, forest department officials, older members of the community and people representatives. Five villages depend on the monastery forests for various provisioning services: Priyathang, Dokothang, Bhaluthang, Bedung and Tiguthang. Of these, Priyathang and Dokothang were selected to be studied under this project. Focus group discussions were held mostly with the male members of these communities.

The people of Priyathang and Dokothang identified major ecosystem services that they derive from the monastery forests. Priyathang is situated within the monastery compound and adjacent to the forest; Dokothang village is a 20 minute walk away. People of Priyathang village collect fuel wood, leafy vegetables and fodder throughout the year. People of Dokothang mainly collect fodder and some amount of leafy vegetables from the northern part of the monastery forest. They only come to the monastery forest during winter (October – February) due to scarcity of fodder in reserve forests and their private forests. Priyathang and Dokothang villagers identified the resource rich, resource poor and resource blank areas of the forest. They also spoke of rules that prohibit cutting of trees and collection of leaves.

The exercise will now be repeated with women from the community to get a clearer picture of forest resource use. The plant diversity of resource rich and resource poor areas will also be studied.

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Regional Conference on World Natural Heritage Sites

UNESCO New Delhi Office, in association with the Ministry of Environment and Forests, Government of India, organized a two-day Regional Conference on 'Conservation and Management of World Natural Heritage Sites: Sharing Experiences and Best Practices from South Asia' at India Habitat Centre, New Delhi on 17-18 September, 2013. The conference was held under the aegis of the World Heritage Biodiversity Programme - India (WHBPI) which was implemented as an UNESCO initiative in four World Natural Heritage Sites in India, namely Kaziranga, Manas, Keoladeo and Nanda Devi National Parks during 2008 – 2013. ATREE was the implementing agency for Kaziranga and Manas in Assam.

The conference was attended by policy makers, park managers, academia, practitioners and other stakeholders. Representatives from World Natural Heritage Sites in Bangladesh, Bhutan, Nepal, Sri Lanka and India shared experiences and best practices on conservation and management from their respective sites.

ATREE Coordinator from the Guwahati Office, Niraj Kakati presented an overview of the key outcomes and learning from the WHBPI project in Assam, outlining specific early impacts of the activities and sharing thoughts on the lessons learned from implementing the project over five years.

ATREE Director, Dr. Ganesan Balachander was an invited member on the Panel Discussion on 'Strategy for Building Partnerships and Resource Mobilization' where he discussed ideas on tapping new constituencies and alternative sources for raising resources to support projects of this kind. It may be pertinent to mention that Dr. Balachander played a key role on behalf of the Ford Foundation as a primary donor during the inception of the WHBPI Project more than five years ago.

- Niraj Kakati,
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Livelihood assessment workshops in Ziro



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As a part of the project on 'Understanding Livelihoods of Tribal Communities Dependent on Natural Resources' two community level workshops were conducted in Ziro in August. The project is being implemented in Papum Pare and Lower Subansiri districts of Arunachal Pradesh and is supported by the Navajbai Ratan Tata Trust,.

Around 70 participants took part in the workshops, including panchayat members, teachers, government staff, and farmers. Most of the participants agreed that the key human capital was their collective expertise in rice-cum-fish culture with their unique network of irrigation channels, and their carefully managed pine forests and bamboo groves.

Traditional institutions are still an important component of community livelihoods and overall life, especially for the poor and in times of livelihood stress. However, the role of these institutions is being undermined with the advent of parallel institutions and new forms of governance. All the communities are completely dependent on the natural resources of the forests, most of which belong to them. Water availability for agriculture is of major concern and the issue of diversion of their water sources to cater to the growing demands of rapidly urbanizing Hapoli bazar came up repeatedly in group discussions.

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Workshops organized/ attended

Sarala Khaling, Sunita Pradhan and **Samuel Thomas** attended the Indian Mountain Initiative Sustainable Mountain Development Summit III Kohima Nagaland 25 to 27 September.

Barkha Subba attended the Amphibian Academy Workshop organized by Amphibian ARKS, Toledo Zoo and Amphibian Academy in Toledo, Ohio, 20-28 April.

Sarala Khaling attended a meeting of Critical Ecosystem Partnership Fund (CEPF) Regional Implementation Teams (RITs) and Coordination Units at Arlington, Virginia, 15-20 September.

Samuel Thomas attended the workshop on Five-year Participatory Assessment of CEPF Investment in the Western Ghats Hotspot, organized at Kotagiri, Tamil Nadu 4-5 July.

Samuel Thomas participated in the workshop on 'Medicinal Plants: Gift for Common Good' (living stories from the East and West) , Darjeeling Goodwill Center, 14 September.

Karuna Gurung and **Michelle Gurung** attended the Annual Work Seminar at ATREE, Bangalore, 5-8 August. Karuna presented a poster on 'Invasive Species Management: For Community Livelihood Enhancement in the Eastern Himalayas'. Michelle made a documentary presentation on 'Conservation and Livelihoods Programme in Darjeeling Hills - Interventions, Impact and Challenges'.

ATREE, along with H.I.G.L.E., Darjeeling Goodwill Centre, DLR Prerna and Makaibari co-organized a Slow Food "experiential" presentation on 2 July at Glenary's, Darjeeling. Slow Food International Director Anandi Soans spoke at the event.

Staff

Nilmani Rabha has joined as a Research Scholar on the Fondation Ensemble supported project that focuses on conservation of the white-bellied heron and its habitat in BTAD, Assam.

Vikram Pradhan has joined as JRF on the project 'Integrated approaches to adaptive resilience based management of forests for supporting agro-ecosystems in Sikkim-Darjeeling Himalayas'. Born and raised in Namchi, South Sikkim, Vikram completed his MSc in Forestry from Doon College of Agriculture Science and Technology, Dehradun. His thesis was on 'Human-wildlife conflict and its impact on fringe villages of Kitam Bird Sanctuary'.

Papers

Roshan P. Rai, **Sunita Pradhan** and M.S. Rai. Forests of Darjeeling : a need for intersectoral, participatory and trans-boundary management. Paper submitted at the Sustainable Mountain Development Summit III organized by the Indian Mountain Initiative at Kohima, 25-27 September.

Sarala Khaling, A. Rai, B. K. Chettri, C. Songate, D. T. Tamlong, N. Gurung and R. D'Souza. Agriculture- knowledge and the challenges therein- Case of Darjeeling district. Paper submitted for inclusion in lead paper on Mountain Agriculture at Sustainable Mountain Development Summit III organized by Indian Mountain Initiative at Kohima, 25-27 September.

Samuel Thomas, Roshan P. Rai, Lakpa Tamang, Ruben Pradhan and Raju Lama. Water issues from Darjeeling Hills. Paper submitted for inclusion in lead paper on Water at the Sustainable Mountain Development Summit III organized by Indian Mountain Initiative at Kohima, 25-27 September.

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 Himalayas and Assam, and works with a range of local partners in the other states of north east India.

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