

Makhan Community PES Contract with CFI

The Liangmei Naga Community of Makhan Village, Senapati District Manipur, agree to protect and restore their forests by taking the following measures:

- Strict enforcement of customary rules and regulations concerning conservation of forests.
- Collection of only dead, fallen trees/twigs for use as firewood with in the village.
- Ban on logging for timber, both for sale and local use.
- Ban on *jhum* and tree felling upstream of water sources, stream banks and steep hill slopes.
- Ban on sale of firewood and the leasing of forest land for cattle raring.
- Ban on fire setting, smoking, and grazing inside forest areas.
- Ban on hunting in the forest
- Villagers agree to collectively fight forest fire in case of any incidence of wild forest fire.
- Reduce dependence on *jhum* by augmenting agricultural production through irrigation.
- Increasing follow periods of the *jhum* lands through intensive farming practices in current *jhum* fields.

CFI agrees to contract with the Local Working Committee of Makhan for a period of three years, effective January 2007, to restore degraded community forests. CFI will work with the community to develop monitoring indicators and will provide funds to the villagers based on the opportunity cost of the forest areas to be protected with payment on June 30, 2008 and December 31, 2009. The PES Contract includes support for:

- Payments for Environmental Services to the Lower Working Committee and Micro-Finance Groups
- Constructing 15 kms. of fire breaks
- Hiring T3 firewatchers in during the dry season of 2007 and 2008
- Posting sign boards banning smoking, fire setting, grazing, and logging in the forest.
- Providing support for bio-briquettes, fuel-efficient smokeless stoves, and cooking gas.
- Rehabilitating and expanding irrigation facilities
- Provide Technical Training in bookkeeping and financial management, agriculture, animal husbandry, resource management planning and monitoring



Eight Self-Help Groups in Makhan now manage their own bank accounts and micro-finance activities, allowing them to accumulate capital and initiate small enterprise.



The 350 hectare Community Conservation Area on Makhan Ridge possesses endangered Hoolock gibbons, leopards, and hornbills in its old growth forest.

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Payment for Environmental Services: A Case Study from Makhan, Manipur, NE India

Community Forestry International



MacArthur

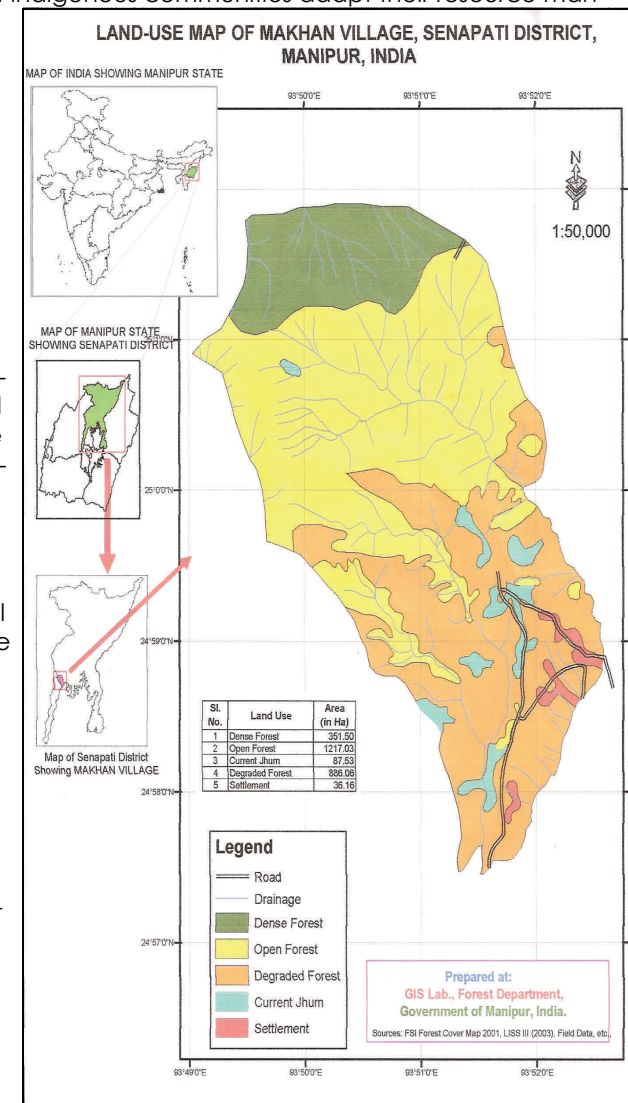
Introduction to CFI's Strategy

CFI's strategy in Northeast India is designed to empower indigenous communities and build the capacity of traditional institutions to conserve and productively manage their natural resources. Over 200 ethno-linguistic tribal communities inhabit India's northeastern hills and mountains. The region's indigenous communities possess a diversity of resource management experience and systems, however, these traditional institutions and their customary regulations have been strained by the rapidly expanding market economy and by social and political changes. CFI seeks to assist indigenous communities adapt their resource management systems to better address growing pressures on natural forest habitat.

Upland communities, especially low income households, often see a decline in their income as stricter controls over forest access. CFI provides support to communities to build social and financial capital within households and village institutions, generate new small enterprises, and enable the community to transform agricultural and animal husbandry practices.

CFI structures its support as Payments for Environmental Services (PES) including: the conservation of rare flora and fauna, the capturing and storage of carbon as forest regenerate, and the better provision of water to lowland and downstream urban users. The Liangmei Nagas of Makhan village provide an excellent example of a Northeast Indian-community using their cultural institutions to design and implement improved resource management practices.

In collaboration with the Manipur Forest Department and the Weaker Sections Development Society (WSDS)



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History

Makhan watershed has been home to the Liangmei Clan of the Naga tribe for centuries. Makhan Naga warriors fought on the side of the Maharaja of Manipur when the Burmese conquered the area in the 18th century. Originally, the clan village was located on the top of Makhan ridge, but that village was abandoned by 1987. A second village, and the current site of Makhan, was established in 1949, at which time there was abundant forest for clearing swidden (*jhum*) fields, as well as for hunting and gathering. Established by four families, the new village has grown to 125 families with a population of over 900 persons over the past sixty years, placing extreme pressure on the forest. As a consequence, the fallow period has decreased from 15-30 years to 2-3 years, limiting forest and soil regeneration, and leaving much of the lower watershed covered by degraded scrub. Concerned by their declining agricultural yields, growing scarcity of fuelwood, and diminished water flows, the Nagas of Makhan entered into a dialogue with the CFI team and its partners. The emerging agreement reflected a mutual commitment to establish better strategies to sustainably manage their rich natural resources in order to conserve their extraordinary biodiversity, as well as to improve family incomes.

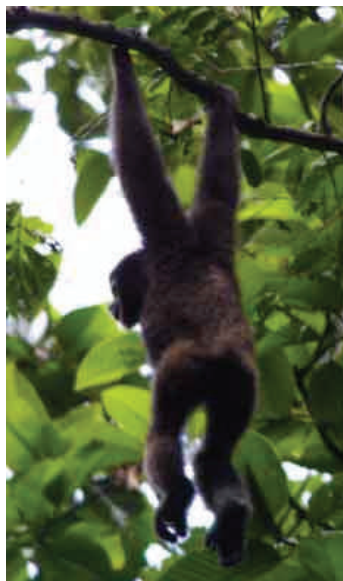
Problems & Challenges

While Makhan Village has legal authority over 2,400 hectares of forests and agricultural lands, it remains a poor community with 80 percent of families primarily dependent on swidden farming for their livelihoods. The Naga chief is the chairman of the Village Authority (VA) along with six elected members from the village. While the VA is responsible for overall governance issues and decides all matters regarding land, water, and forests, traditional controls have weakened in recent decades while land use intensity has increased. While the community owns vast areas of land, over three-quarters of their forest have been left barren or reduced to scrubland due to growing land pressures and the resulting shortened fallow cycle that does not allow time for forest recovery. In recent years, the community has also leased some of its forests to neighboring Nepali villages as pasture land. Unfortunately, burning to stimulate grass growth and over-grazing has further denuded the lower watershed. As the watershed vegetation has diminished, so too has water flow in the dry season.

The VA, as well as village families, are concerned about their poverty and lack of sustainable livelihood opportunities. One villager noted: **Before neighboring villages came to hunt, and were setting fires, smoking and cutting green trees in our forests. We have talked with them and given them written notice that we are protecting our forests.**

Context

Oaks, alders, chestnut, and cinnamon are a few of the trees that comprise the forests scattered across the hill-tops and stream banks of Makhan Village. A community conducted biodiversity inventory recorded 128 species of trees, shrubs, herbs, bamboos, canes, climbers, epiphytes, and grasses, of which 25 percent were rare or very rare. This diversity results from the multiple habitats and transition zones found between 1000 and 5000 feet elevation at the interface of the continents of South Asia and Southeast Asia. Many endangered animals listed in India's Wildlife Protection Act are still found in the area, especially in the old growth, dense forest. These include the Hoolock Gibbon, Goral, Pangolin, Leopard Cat as well as Jungle Fowl and Hornbills.



The challenges that the Makhan community faces is to reduce pressure and facilitate the regeneration of the degraded forests that covers 75 percent of their watershed. This requires organizing long rotation swidden farming blocks at lower elevations and developing terraced, irrigated fields to reduce pressure and conserve the upper watershed forests. The community hopes to create alternative employment in commercial poultry and pig production, as well as from bamboo cultivation.



Goals and Strategy: Makhan Village, Manipur

Community Forestry International and its partners are assisting the Liangmei Nagas of Makhan Village in Manipur to conserve threatened biodiversity and restore degraded natural forests by creating a partnership that empowers customary institutions, while building their capacity to address growing pressures and threats. CFI and the villagers (under the auspices of the Local Working Committee and the Village Authority) have entered into a three-year contract to formalize and strictly protect their Community Conservation Area of 350 hectares on the ridge top, and to restore the degraded forest landscape in the middle of the watershed. A joint team framed the guidelines for the contract, identifying monitoring indicators and agreeing to funds to offset opportunity costs related to forest protection. The agreement required Makhan families to adopt a resolution (see page 4) involving conservation and forest restoration strategies. Correspondingly, CFI and its partners committed to providing technical support, training, and PES for silvicultural activities, forest protection, micro-finance, as well as agricultural transitions. The community requested the renovation of a small run-of-river irrigation canal to bring water to rainfed fields. This will allow farmers to secure two crops per year and intensify production by 30 percent. CFI and its partners, including the Manipur Forest Department and a local NGO, the Weaker Sections Development Society (WSDS), are also working with the Makhan community to demarcate forest boundaries, and register community forests and Community Conservation Areas (CCA) with the Senapati Autonomous District Council. Finally, CFI is facilitating new buyers for the biodiversity and carbon services provided by the Makhan CCA. In 2007, the project will assist the community to develop a long term natural resource management plan for the watershed.

Social & Economic Benefits

The project seeks to increase household incomes in the project areas in ways that reduce pressure on the natural resource base and provide incentives for conservation. During the year 2005, Participatory Rural Appraisal exercises were conducted to assess the condition of the resource base and understand community development priorities. The following activities were initiated in 2006 to generate social and economic benefits:

- Eight micro-finance groups formed with accounts opened at local banks
- Training provided in financial management and bookkeeping
- Training in agriculture, horticulture, health, veterinary practices
- Rehabilitated minor irrigation system
- Established commercial bamboo plantation
- Employment for firewatchers and fire break cutters from the village

One village woman remarked: **This project gave us the concept of saving and the ability to receive emergency loans of Rs. 1000 to Rs. 1500. Before, cultivation of the forest was random, now we are more aware of the need to protect the forest.**



Biodiversity Benefits

Community conservation activities will strengthen protection in the 350 hectare old growth forest located on the ridge top between 4,000 and 5,000 feet elevation. Inhabited by Hoolock Gibbons, leopards, hornbills and other endangered species, village youth will be responsible for patrolling and monitoring. The biodiversity conservation PES rate will be based on \$5 per hectare for the high value core habitat area totaling an annual Biodiversity Conservation PES of \$1750 per year.

Hydro Benefits

Declining and uneven spring and stream flow has motivated Makhan to improve watershed hydrology through regeneration of degraded forests. Forest protection, fires control, and enrichment planting, especially along stream banks and above springs are designed to improve water flow. Total degraded forest in the project area of the watershed include 2103 ha. A PES rate of \$0.10 per hectare was established to support watershed restoration activities, representing an annual Hydrological PES of \$210.

Carbon Benefits

The Makhan Project estimates an annual carbon additionality of approximately 0.5 metric tons (mt) per hectare per year during the first three years for the Forest Restoration Areas. Under this scenario the 1,000 hectare restoration area should capture 500 mt annually with a value of \$10 per ton and with a yearly Carbon PES of \$5,000 to the Local Working Committee responsible for restoration project management activities, and contributions to community micro-finance groups.