

Mawphlang Community PES Contract with CFI



We the members of the Community Forest Management Committee of Wahlyngkien Sunei & Wahlyngkien Ramklang Villages under Hima Mawphlang Lyngdohship, East Khasi Hills District, which constitute a part of a Pilot Project of Community Forestry International, and represented by Local Working Committee, realize that our forests are in a state of severe degradation due to fire, grazing, unsustainable collection of firewood, unregulated quarrying, etc. We therefore adopt the following resolutions for restoration of our forest landscape on the assumption that Government of India or any other donor agency will come forward to help us by providing the fund for taking care of the opportunity costs of protection and also for the support activities.

- 1) Fire Control:** Fire is the most destructive factor to our forests, occurring mainly during the dry months when the forest floor is covered with a thick layer of flammable material. It is therefore resolved that members will identify the causes of the annual fires and undertake the following measures:
- Create and maintain fire lines to prevent fires from entering the forests from the adjacent villages
 - Negotiate with cooperative agreements with neighboring villages to prevent fire from spreading.
 - Appoint firewatchers from forest dependent families during the fire season.
 - If fire breaks out, all able-bodied members of the community will put out such fire.
 - Post signboards banning smoking and match boxes within forest areas.
 - Strictly enforce local customary laws prohibiting setting of fire to the forests.
- 2) Control of Grazing by Cattle:** It is realized that unregulated grazing by cattle and goats in forest areas is a major cause of forest degradation. In order to protect regenerating plants in the forests, it is imperative that grazing of cattle within the forest areas be prohibited. In order to achieve this, It is resolved that:
- Village cattle will only be allowed to graze in areas outside community-conserved forests.
 - Cattle if reared, should be of superior breed and stall-fed with cattle feed procured from outside
 - Inferior breeds will be replaced by more profitable livestock, such as pen-raised pigs and poultry
- 3) Control of Unsustainable Harvesting of Firewood:** It is realized that unsustainable harvesting of firewood from the forest is another major cause for its rapid depletion.
- Cutting of green trees for firewood is banned
 - All sale of firewood outside is prohibited.
 - Alternative sources of energy such as coal briquettes and other eco-friendly and affordable fuel and efficient, smokeless stoves will be explored and adopted
 - No felling of tress for commercial purposes will be permitted.
- 4) Control of Quarrying:** Stone quarrying in the steeper areas of the project site has resulted in accelerated soil erosion and deposition of debris in the streams and reservoirs in the lower reaches. This has resulted in silting and drying up of such streams with the rapid depletion of fish, amphibians and other live form population.
- No quarrying will be permitted within the watershed containing the Mawphlang Sacred Grove and Community Forest areas by order of the Lyngdoh.



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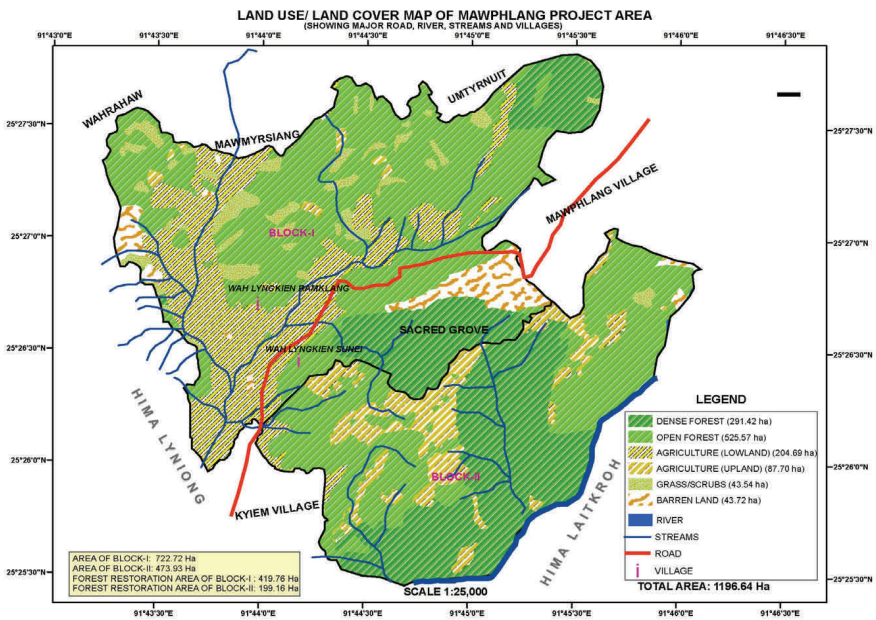
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Payment for Environmental Services: A Case Study from Meghalaya, NE India

Introduction to CFI's Strategy

CFI's strategy in Northeast India is designed to empower indigenous communities and build the capacity of their traditional institutions to conserve and productively manage their natural resources. This includes strengthening protection systems around sacred forests, especially those with high biodiversity, as well as restoring degraded forests and fallowed swidden farms. Assisting villagers to restore their watersheds is also designed to improve ground and service water availability by slowing run-off and facilitating infiltration.

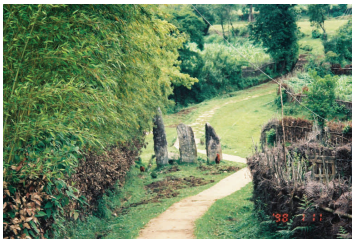
Upland communities often lose income as they end commercial fuelwood collection and small scale quarrying, restrict grazing, and allow marginal farmlands to return to natural forests. CFI assumes that communities require financial support to build capital within households and village institutions, generate new small enterprises, and transform agricultural systems, and animal husbandry practices. CFI anticipates that investments in upland natural resource management systems are well justified in terms of the collective value of the enhanced environmental services being generated that provide global benefits 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 case of Mawphlang Lyngdohship is an excellent example of how new resource management partnerships are creating a win-win for local communities and their cultural traditions, as well as for those interested in investing in a better global environment.



Community Forestry International



MacArthur



Introduction to CFI's Strategy	1
Case Study Map	1
History	2
Context	2
Problems & Challenges	2
Goals & Strategy	3
Social & Economic Benefits	3
Biodiversity Benefits	3
Hydrology Benefits	3
Carbon Benefits	3
Community PES Contract	4

History

The small Kingdom of Mawphlang is noted in British Colonial records as early as the 1820s. The 18 villages that comprise Mawphlang Lyngdohship are linked through their clan ties within the Khasi cultural community and share a common history in the area that probably dates back at least to the 15th century. According to Mawphlang's indigenous leaders, their Sacred Forest has been protected since the settlement of the area hundreds of years ago. It is also a sacred cultural location with large stone monoliths around which rituals are performed. Strict community rules ensure that no human interference is allowed within the Sacred Grove, banning any cutting, collection, fires, or settlement. Today, the Forest is managed by the traditional Lyngdoh and the clan heads of the area.



Context

Cyclonic air masses churning in the Bay of Bengal during the summer heat generate storms that slam into the Meghalaya Plateau that rises sharply from the flood plains of Bangladesh, creating torrential monsoon rains that make the East Khasi Hills one of the Earth's rainiest places. Located at 5,600 feet (1842 m.) on a gently rolling ridge top is the 75 hectare Mawphlang Sacred Grove. This wet temperate forest is a unique habitat with impressive biodiversity, including 400 tree species, unusual orchids, mushrooms, amphibians, and birds. Ancient stone megaliths dedicated to fallen warriors occur throughout the dense forest of oaks, rhododendrons, chestnuts, alder, and figs, with its prolific variety of epiphytic growth including aroids, piper, ferns, fern allies and orchids. The Sacred Grove of Mawphlang is one of the few still being managed according to traditional beliefs and customs, and where indigenous religious rituals are still performed. Managed by a religious chief (Lyngdoh) and his ministers, together with village headman and clan chiefs, responsibilities for forest protection, fire control, and ritual observances are shared by the local communities.



Problems & Challenges

While indigenous governance structures have continued to operate with reasonable effectiveness in the Khasi Hills, the landscape has changed dramatically. It is clear from the historical records that the East Khasi Hills have experienced heavy land use pressures for over 150 years. Limestone quarrying and coal mining have been expanding for over a century, while forest clearance has progressed rapidly as the population has grown. One 78 year old village man noted: **Our land was once covered with dark green hills and deep blue streams. We were once the rice bowl of the East Khasi Hills, but now the hills are barren and the streams run dry.**

The disappearance of extensive forest tracts, driven by an increasingly short swidden or *Jhum* fallow cycle, has resulted in the denudation of waste tracks of upland watershed. The privatization of community and clan forests has often led to their permanent clearance for agriculture. Problems stemming from deforestation have been compounded by widespread quarrying for stone, limestone, and other construction materials. Forest loss, soil erosion, and mining have all had significant impact on the hydrology of these critical watersheds. Due to the high demand for quality stones produced from quarries in the project area, the communities face significant lost income in closing these enterprises.

While the East Khasi Hills ranks high among the world's heaviest rainfall areas, communities now experience extended droughts in the dry season where springs run dry and rivers shrink to trickles. The upper hill slopes of the major highway passing through the site is riddled with pockets of stone quarries being carried out mainly by the local communities (see photo). The upper ridges of these stone quarries are steadily advancing towards the Sacred Grove posing an immediate threat to its existence. The quarrying debris is dumped downhill causing mud-slides during the rainy season, generating heavy sedimentation in the ponds and streams that destroys all aquatic life including rare amphibians. Indigenous institutions like the *Lyngdoh*, the council of *Myntris*, and the community *Durbar* or parliament require support to address growing pressures on the land, forests and water resources as the rate of social, political, and economic change accelerates. These ancient organizations remain the best hope of sustaining Khasi natural resources and cultural systems.



Goals and Strategy: Mawphlang Lyngdohship, Meghalaya



Community Forestry International seeks to assist Mawphlang Lyngdohship 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 is helping Mawphlang to gain recognition by the local District Council as well as national and international attention as a Community Conservation Area (CCA). Many endemic, rare and endangered species of flora and fauna in Meghalaya are confined to a few areas where Sacred Groves exist, including Mawphlang. Meghalaya is a major hotspot of amphibian biodiversity with 18 identified species either threatened or red-listed for extinction, some of which are found in the ponds and streams located within and around the Sacred Grove. CFI project activities have helped the community identify a number of threats to the Sacred Grove and the surrounding watershed. The dangers posed to the case study area had been discussed with the communities during numerous awareness programs and meetings. The indigenous leadership of the communities residing in the project area signed a resolution to control seasonal fires, grazing by cattle, unsustainable firewood harvesting, and quarrying (See Community Resolution on page 4). CFI has agreed to provide financial of \$12,131 per year and technical support for a three year project period to the community resource management institution as Payments for Environmental Services.



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. The key elements in the strategy involve providing financial and training assistance to community households to:

- Build community Institutions including the Local Working Committee as an operational NRM management unit and a form Self-Help (microfinance) Groups for entrepreneurial activities.
- Establish financial accounts with local banks and operate saving and loan program
- Provide Jobs through constructing 5 km of fire line and 1000 hectares of forest restoration activities through LWC and SHGs
- Initiate commercial animal husbandry enterprises by exchanging low quality community cattle and goats for stall-fed pigs and chickens
- Adopt fuel-efficient, smokeless stoves

One Mawphlang women note that: **We have benefited also from the project, both in terms of training and employment. Most important for us has been the establishment of the Self Help Groups.**

Biodiversity Benefits

Community conservation activities will focus on protecting and expanding existing habitat for endemic and endangered orchids and other epiphytes, and amphibians. The current Sacred Grove of 75 hectares will be strictly conserved, while an additional 150 hectares will be add to the CCA. Biodiversity conservation payments will be based on \$20 per hectare for the high value core habitat area, and \$10 per hectare for the expansion forests totaling an annual Biodiversity Conservation PES of \$3000 per year.

Hydro Benefits

Restoring the hydrological functions of the Mawphlang watershed involves vegetative restoration as well as closure of surface quarrying and mining operations. Total area in the project area of the watershed is 1197 ha. A PES rate of \$2.50 per hectare was established to support watershed restoration activities. This will also help offset opportunity costs from the loss of quarrying income. Project activities are planned and implemented by the community, representing an annual Hydrological PES of \$2993.

Carbon Benefits

The Mawphlang Project estimates an annual carbon additionality of approximately 1 metric tons (mt) per hectare per year during the first three years for the Forest Restoration Areas. Under this scenario the 620 hectare restoration area should capture 620 mt annually with a value of \$10 per ton and with a yearly Carbon PES of \$6200 to the Local Working Committee responsible for restoration project management.