

International Workshop on Forest Rehabilitation in the Asia-Pacific Region

**Looking back and looking ahead after 10 years of APFNet forest
rehabilitation support**

Report on APFNet project “Multi-function forest restoration and management of degraded forest areas in Cambodia”

Economy: Cambodia

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1. Summary

The project sites were located in two community forests, O Soam in Kampong Thom province and Tbneng Lech in Siem Reap province. The project objectives were to establish rehabilitation demonstration plots, rehabilitate community forests, establish two community nurseries and provide trainings to local communities. The outcomes of the main project activities are construction of two community nurseries, training of local communities on seedling production and forest rehabilitation, establishment of four demonstration plots in each community forest, and rehabilitation of 50 ha of community forest. Community representatives have gained technical knowledge and skills on seedling production and forest rehabilitation and were able to put their new knowledge and skills to good use and carry out forest rehabilitation activities after completion of the project. The boundaries of O Soam Community Forest were clearly demarcated on the ground and the Community Forest Management Plan was signed with the provincial Forestry Administration, allowing both community forest groups to use and care for forest resources in a sustainable way for 15 years. In short, the project has created three enabling conditions for local communities to maintain their forest rehabilitation efforts: secure land tenure; knowledge and ability through training and technical support; and sound, sustainable seedling production. One weakness of the project was inadequate project formulation which resulted in unclear problem analysis and objectives.

2. Background information

Cambodia is a Southeast Asian nation. It has a population of about 16 million. The landscape is characterized by low-lying plains in the central part of the country and hills and mountains in the north, northeast and southwest. The central plains region extending from the northwest to the southeast of the country along the Tonle Sap Great Lake and the Mekong Delta is the most populated area in Cambodia. About 80% of the Cambodian population lives in rural areas. Cambodia's two largest industries are textiles and tourism, while agricultural activities remain the main source of income and livelihood for many people living in rural areas.

By 2016 the government had placed some 471, 000 ha of natural forests, many of which were degraded, under the management of local communities living near the forests in the form of community forest (CF) (FA, 2017). There are currently 580 CFs, which are under the jurisdiction of the Forestry Administration (FA).

Prey Kbal Toeuk or Tbneng Lech CF is located in Tbneng commune, Banteay Srey district, Siem Reap province, about 40 km northeast of Siem Reap town. The CF covers a total area of 210 ha. A CF Management Committee consisting of 11 members, representing 144 participating families (386 persons), has been responsible for the management of the CF. The CF was officially recognized by the Ministry of Agriculture, Forestry and Fisheries in 2007; and in 2009 an agreement with the provincial FA was signed. Under this agreement, the local community has the right to manage and sustainably use the forest for 15 years. The term can be renewed pending the performance of the Management Committee.

O Soam CF is located in Prasat Balang district, Kampong Thom province. It is about 30 km north of Kampong Thom town. The CF has a total area of 307 ha and is run by seven Management Committee members with 215 participating families of more than 700 persons. An agreement with the provincial FA was signed in early 2015, immediately after project completion.

In the 1970s, both CFs were covered with climax forest with the majority of evergreen forest found in Tbeng Lech and deciduous forest in O Soam. The forests had experienced minimal disturbance through traditional uses by local communities. In the 1990s, the forest areas were cleared to grow agricultural crops. The establishment of CFs was initiated in the early 2000s. Since the CFs occupy former agricultural land, most of the trees have naturally regenerated from roots, stump suckers and soil seed banks. Therefore, the species composition of the forests has been significantly modified from the original structure, with small numbers of low-value timber species currently present. The forest products that can be collected are fuelwood, poles, mushrooms, honey and medicinal plants used in traditional medicine. The forests are home to some wildlife, such as wild boar, small deer and birds.

3. Brief description of the forest rehabilitation challenges that the project addressed

The forests are characterized by secondary forest regrowth, with dry evergreen forest in Tbeng Lech and deciduous forest in O Soam. There is a lack of natural regeneration of high-value timber (HVT) species in both CFs because mature trees have been removed. On top of that, some parts of O Soam CF had been occupied by local villagers for farming activities.

The vision of both communities is that of *“A restored forest containing big trees of high-value timber species, non-timber forest products and rich biodiversity that support construction needs, home consumption, income generation and ecotourism industry.”* In order to achieve this vision, the forests must be protected and rehabilitated. However, the gap between the current condition of the forests and the vision is quite big considering the task of rehabilitating large areas of degraded forest and the communities’ limited knowledge and resource base.

Prior to the project intervention, the provincial FA in collaboration with several local and international NGOs provided assistance to both CFs on various aspects of forest management, such as the formulation of CF management plan, boundary demarcation, and training on management, livelihood development, leadership and fire prevention. In 2000 the provincial FA, with technical and financial support from FAO, made efforts to rehabilitate the forest in Tbeng Lech by thinning a one-hectare stand and under planting with some HVT species. However, no further forest rehabilitation had been done since due to the lack of seedlings and knowledge and skills in forest rehabilitation.

4. Overall objective and specific objectives

In accordance with the communities’ vision, the goal of the project was to “rehabilitate the degraded forest in Tbeng Lech and O Soam community forests in Siem Reap and Kampong Thom provinces, respectively, to a status well stocked with HVT and NTFPs and for the project sites to become a recognized national model for community forest rehabilitation.”

The project objectives were to: (i) establish four 1-ha forest rehabilitation demonstration plots in each CF and a 50-ha rehabilitation area, and (ii) set up a tree nursery in each community and provide training to CF members on seedling production and forest rehabilitation.

5. Project implementation

In the first year, the project focused on building community nurseries, one at each site. The nurseries were equipped with facilities, such as a nursery beds with cover sheds, a well and solar-powered water pump, and office cum storage space furnished with chairs, tables and cabinets. Some necessary equipment and tools, such as spades, hoes, machetes and trolleys, were also made available. Each nursery has the capacity to produce at least 6,000 seedlings per year. These two pilot communities are among the first few forestry communities in Cambodia to have their own tree nursery.

Immediately after nursery construction, training courses on seedling production and nursery management were organized at both sites. The courses covered a range of topics from seed collection, seed processing and seed pretreatment to potting mix preparation, seed germination and seedling transplanting. Participants were exposed to small, practical research activities on seed pretreatment and potting mix testing. This was to enable them to deal with new seeds and make effective use of locally available materials for potting mixes. In total, four training courses (two at each site) were organized with a total number of 89 participants of whom 40 were women. Representatives from CFs near O Soam were also invited to attend the training course.

Four one-ha forest rehabilitation demonstration plots were established at each site. Initial meetings were held with community representatives to discuss and explain the step-by-step methodologies to be adopted, including site selection, identification and marking of trees to be retained, and identification of tree species to be planted in the gaps. CF members identified and marked with red paint the trees they wanted to keep; those without markings were removed. However, checks were made by the project team before the thinning operation to avoid the opening of too big a gap. Only about 50% of the forest canopy was opened up.

In addition to the demonstration plots, a total area of 50 ha (30 ha in O Soam and 20 ha in Tbeng Lech) was rehabilitated with priority species, the majority of which are HVT trees, identified by CF members. Enrichment planting was identified as the appropriate method of forest rehabilitation in the two sites considering site conditions, species composition and soil conditions.

Three groups of seedlings were planted: HVT trees, such as *Dalbergia cochinchinensis*, *Dipterocarpus alatus*, *Hopea odorata* and *Pterocarpus macrocarpus* (long-term species); bamboos and rattan (medium-term species); and agricultural crops planted in the form of agroforestry system (short-term species). In total, 22,600 seedlings were planted in both CFs.

Knowledge was disseminated and made available in a variety of forms, such as TV broadcasts on several channels, print and online publications, pictorial posters, seminar and workshop presentations, university lectures, and visits to the project sites. For example, Tbeng Lech and O Soam CFs hosted a number of visits from CF representatives across Cambodia and received delegations from other countries participating in FA-organized training courses and workshops. In addition, researchers and scientists from Japan and Korea have set up research sites in Tbeng Lech CF.

A case study on community forestry for sustainable management and livelihoods in O Soam CF was published in the *Cambodia Development Review* in 2014. The authors highlighted some important sources of income that can be generated from the forest, such as honey and fish. They also conducted a

SWOT (strengths, weaknesses, opportunities and threats) analysis for O Soam CF and drew up a set of recommendations which emphasized the need to build local communities' forest management and entrepreneurial capacities.

6. Project outcomes and achievements and feature stories

Nurseries were constructed, CF members were trained and forest rehabilitation was initiated towards achieving the communities' long-term vision: *"A restored forest containing big trees of high-value timber species, NTFPs and rich biodiversity that support construction needs, home consumption, income generation and ecotourism industry."*

The project has brought about significant improvements to the local environment. Tens of thousands of seedlings of multiple species including rattan, bamboo, fruit trees and particularly HVT trees, planted through enrichment planting, will enhance forest functions and productivity. The project also has created an opportunity for the pilot communities to generate income through selling poles and fuelwood harvested from silvicultural thinning before enrichment planting.

The boundaries of O Soam CF were clearly demarcated on the ground with local authority (commune and district levels) and provincial FA participation. In short, the CF is well recognized by relevant stakeholders. On top of that, the Community Forestry Management Agreement was signed with the provincial FA (in 2015) immediately after project completion. These factors combined have contributed to the elimination of illegal forest activities (such as land occupation and illegal cutting of trees).

The project outcome of greatest importance is the capability of local communities to produce seedlings and manage forest rehabilitation. Knowledge and skills on seed collection, seed pretreatment and potting mix preparation, and particularly the nurseries and associated facilities, did not exist at the two CFs before the project intervention. Importantly, the two CFs have become a hub of forest rehabilitation knowledge.

Local communities at the two project sites have become new partners of the provincial FA and NGOs as they can be reliable suppliers of seedlings and even trainers for other CFs. By having a tree nursery, local communities can generate additional income through selling seedlings. Since project completion in 2015, the nursery in Tbeng Lech has produced about 3,000 seedlings annually for distribution (to schools, pagoda and for planting in public areas), seedling sales, and planting in the community forest. Since 2016, the nursery in O Soam has sold or supplied about 3,000 seedlings annually for tree planting programs by the Central FA and other forestry communities in Kampong Thom province.

Forest rehabilitation has been carried out by both CFs since project completion. This is because the project created enabling conditions for the communities to rehabilitate their forests – nurseries and capacity building. Every year, Tbeng Lech manages to plant about 500 HVT seedlings in the forest, whereas O Soam plants about 1,600.

The two CFs have become models of community forest restoration. Every year, these CFs have attracted different visitors (CF members from across the country, students, local and international researchers) to their sites to learn and conduct research on forest rehabilitation. Positive spill-over effects are clearly

observed in O Soam CF. Forest rehabilitation practices have been repeated in several other CFs in the province. For example, O Angkup Thom, which shares boundaries with O Soam to the northeast, bought 1,000 seedlings of HVT species from O Soam for planting in the forest in 2016. In addition, a community forestry group in Tuol Kreul commune of the same district has built a community nursery after its committee members visited O Soam nursery. The mid-term evaluator stated in his report that: "The nursery in Kampong Thom is co-financed by the provincial Forestry Administration, aiming to create a training center for local community members in the province and beyond. This, to some degree, facilitates the reduplication of the project technical outputs."

7. Lessons learned

The project has created three enabling conditions for local communities to maintain their forest rehabilitation efforts: secure land tenure; knowledge, skills and abilities through training and support; and sound, sustainable seedling production. As indicated in the first section, some development partners had assisted both CFs in various aspects, including forest restoration, prior to the project intervention. However, local communities were unable to carry out forest rehabilitation activities after those supports stopped because these enabling conditions were not put in place.

It is observed that local communities have not made full use of the nurseries for seedling production as only about 50–60% of the nursery capacity has so far been used. Although O Soam has sold more seedlings than Tbeng Lech, both could have done better if they had an advertising strategy to attract more customers. Previous seedling sales have mainly been made through personal contact between CF heads or committee members and prospective buyers.

One of the weaknesses of the project can be traced to inadequate project formulation. A project evaluator stated in his report: "The above shortcomings by no means relate to the performance of the Project Team, but rather to the fact that the project was rather poorly designed and that it is difficult to verify if the problems were resolved if they were not properly identified in the first place." This happened because the project formulators had limited knowledge about project formulation. To avoid repeating this mistake in the future, it is recommended that APFNet assign a team of subject experts to work with or provide guidance to the Executive Agency in formulating the project proposal after acceptance of the concept note.

Reference

FA, 2017. Community Forestry Statistic in Cambodia. Forestry Administration (FA), Phnom Penh.