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Sustainable Forest Rehabilitation and Management for the Conservation of Trans-boundary Ecological Security in Montane Mainland Southeast Asia– Pilot Demonstration Project of Myanmar

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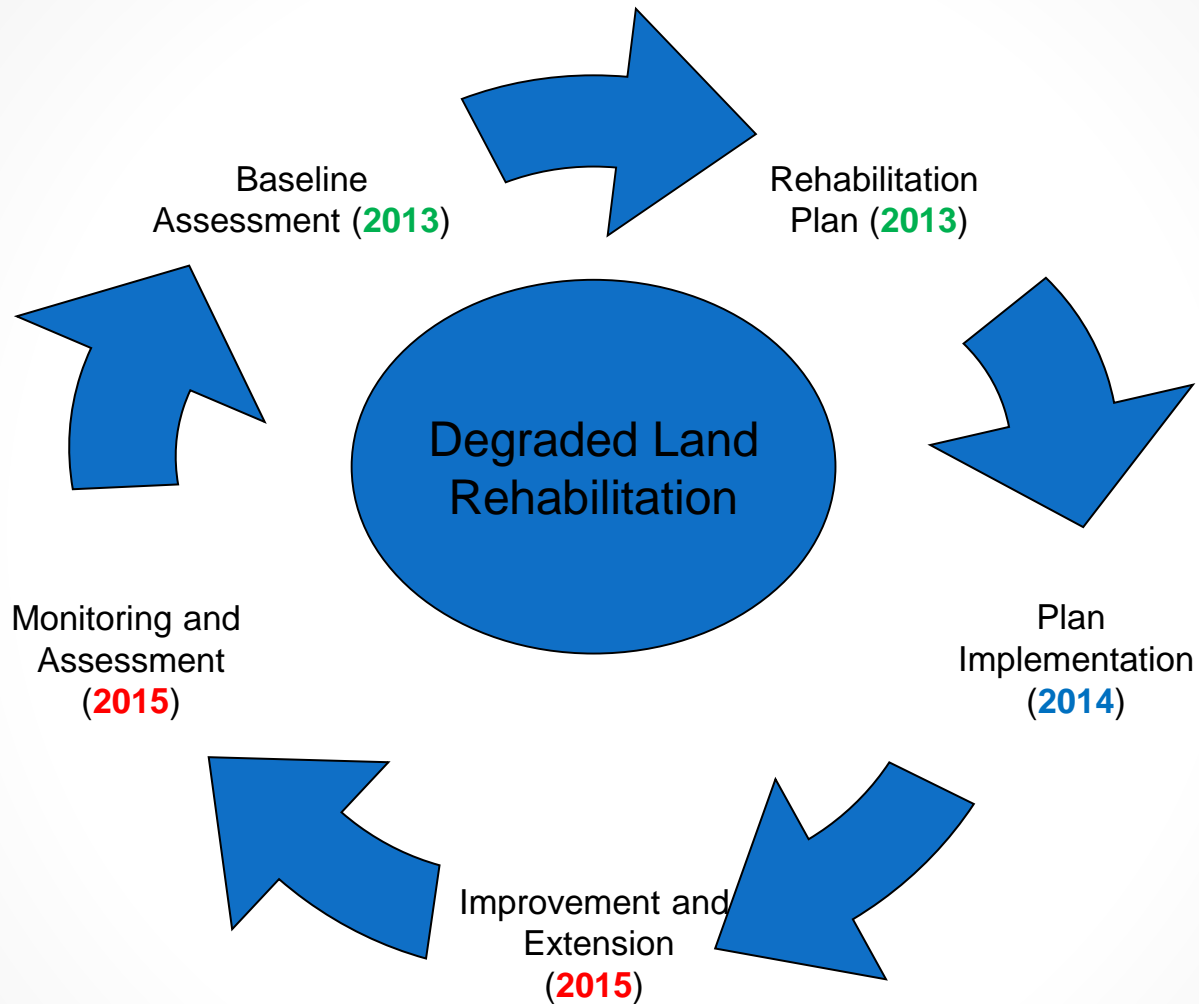
Nay Pyi Taw

April, 2015

Objectives of the project

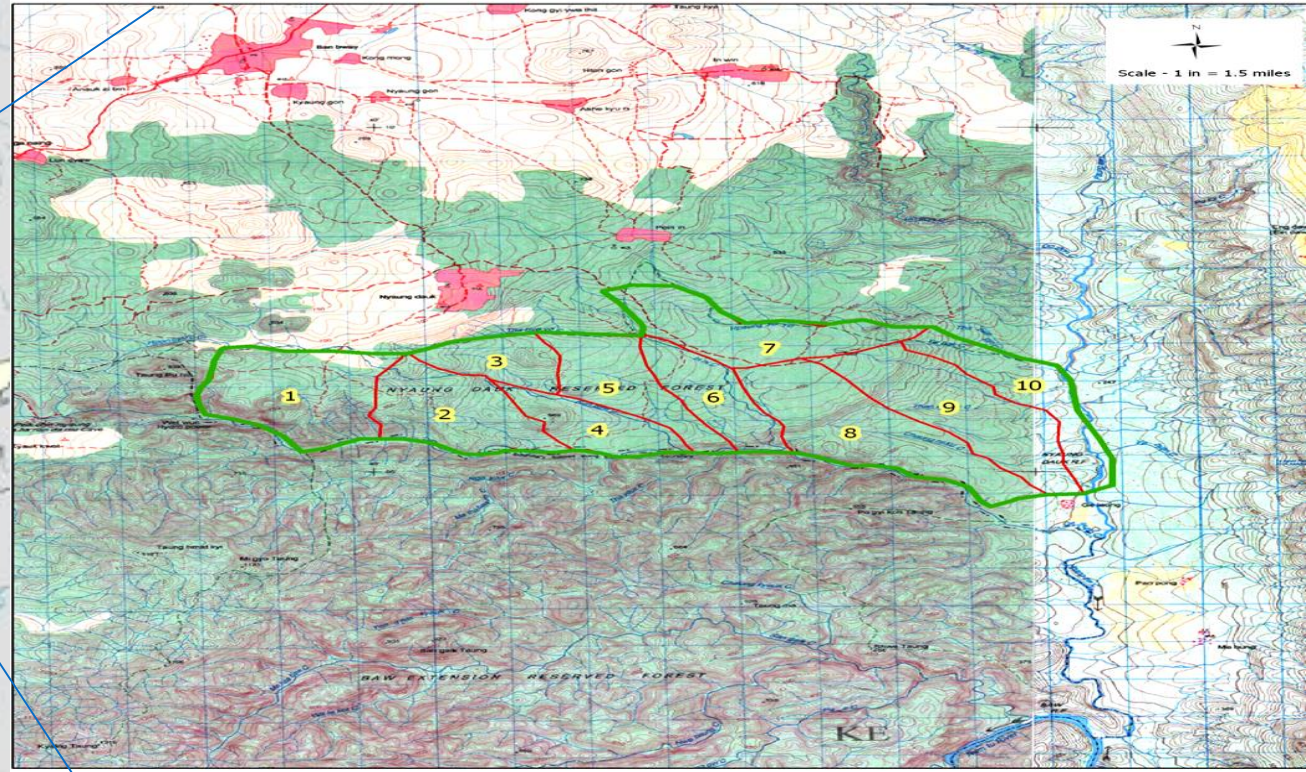
- Identify and adapt the **best practice for forest rehabilitation** in the target areas and around the MMSEA
- Experiment and demonstrate **good practice for forest rehabilitation**, especially use of **locally preferred, rare and endangered native tree species** as well as **local knowledge**
- **Develop capacity** in sustainable forest rehabilitation and reach out to farmers and policy makers
- Integrate project lessons and network with other initiatives for a **regional strategy** on sustainable forest rehabilitation

Methodology of the project



Selected project site

MMSEA Pilot Demonstration Project Site



Legend

-  Nyaung Dauk Reserved Forest
-  Compartment

Nyaung Dauk Reserve Forest area and
Nyaung Dauk village,
Nyaung Cho Township, Shan State

Village profile

Total household : 220

Total populaion :800

Ethnic : Danu (Shan)

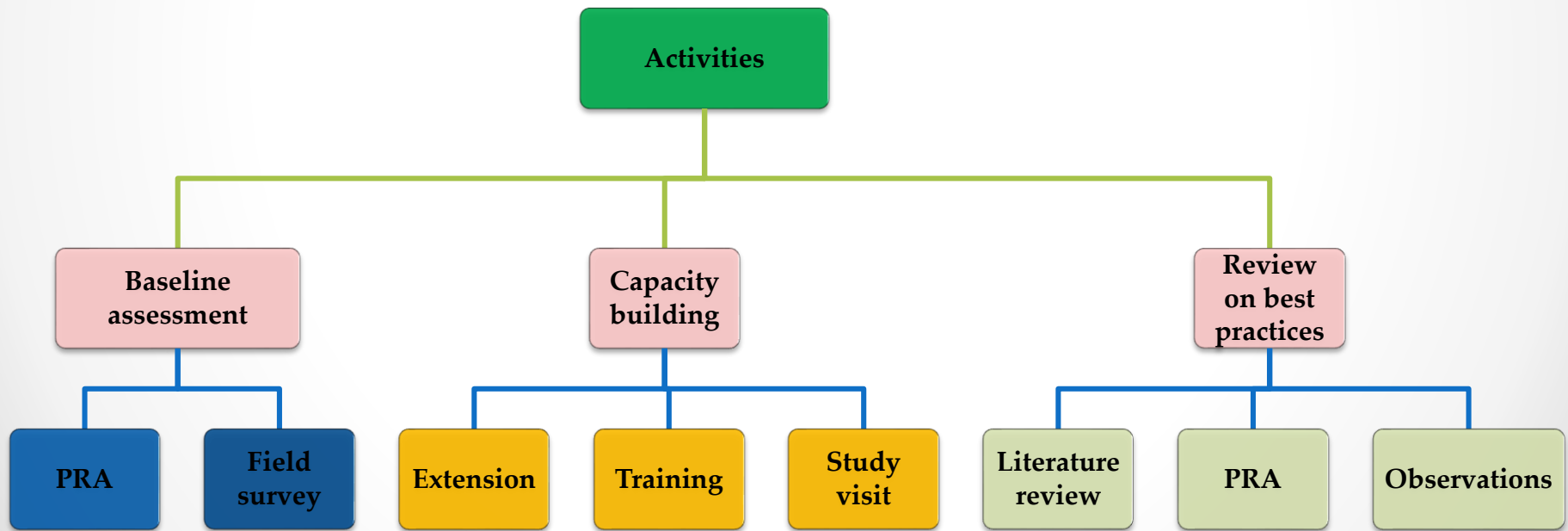


Main livelihood: Farming

Religious : Buddhist

Activities in 2013

Objective: review best practices of forest rehabilitation
the base line of forest resources
identification and nursery of locally preferred tree species
formulation of participatory plan for forest rehabilitation



Assessment of forest resources

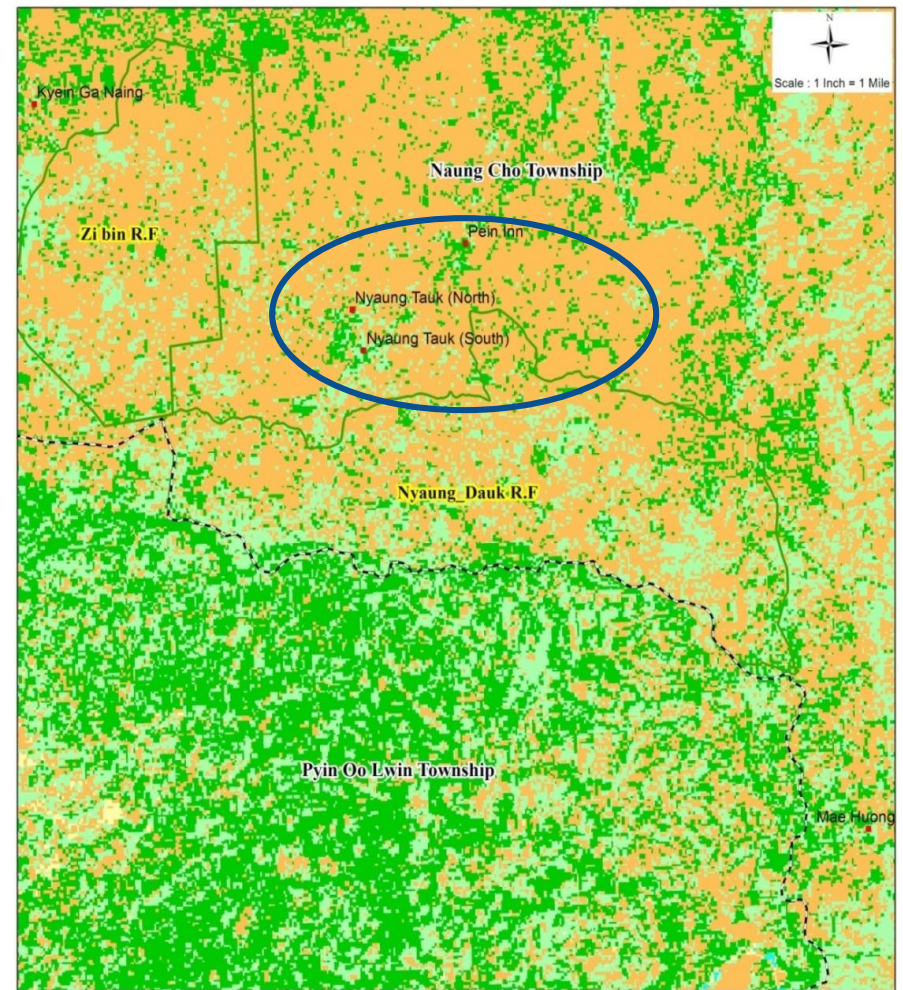
- Primarily endowed with moist upper mixed deciduous forest (MUMD)
- High productive forest composed with commercially important timber species

- Logging practices until 1980s (both legally and illegally)
- Shifting cultivation, fuelwood collection and charcoal production by local people



Deforestation and forest degradation

Landuse & Landcover Map of Nyaung Dauk Forest Reserved Area (2013)



Legend

- Township Boundary
- Forest Reserved Boundary
- Town / Village
- Closed Forest
- Opened Forest
- Scrub
- Agricultural Land
- Water



primary forest → 10 tree species



secondary forest → 31 tree species

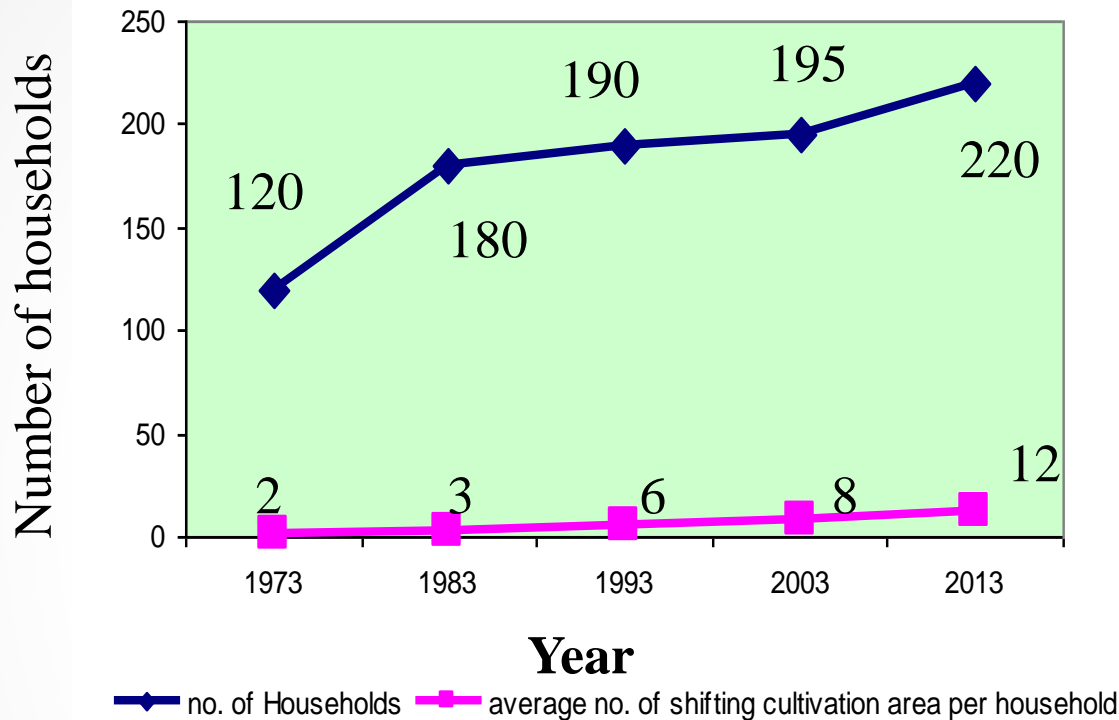


Medicinal plants → 9 species

Changes of priority of livelihood

20 years ago	10 years ago	At present
Cutting timber & Selling	Agriculture	Agriculture
Charcoal making (commercial)	Charcoal & fuelwood	Lime baking
Agriculture	Casual labour	Casual labour
Casual labour		Charcoal (subsistence)
		Fuelwood
		Making bricks

Dynamics of shifting cultivation

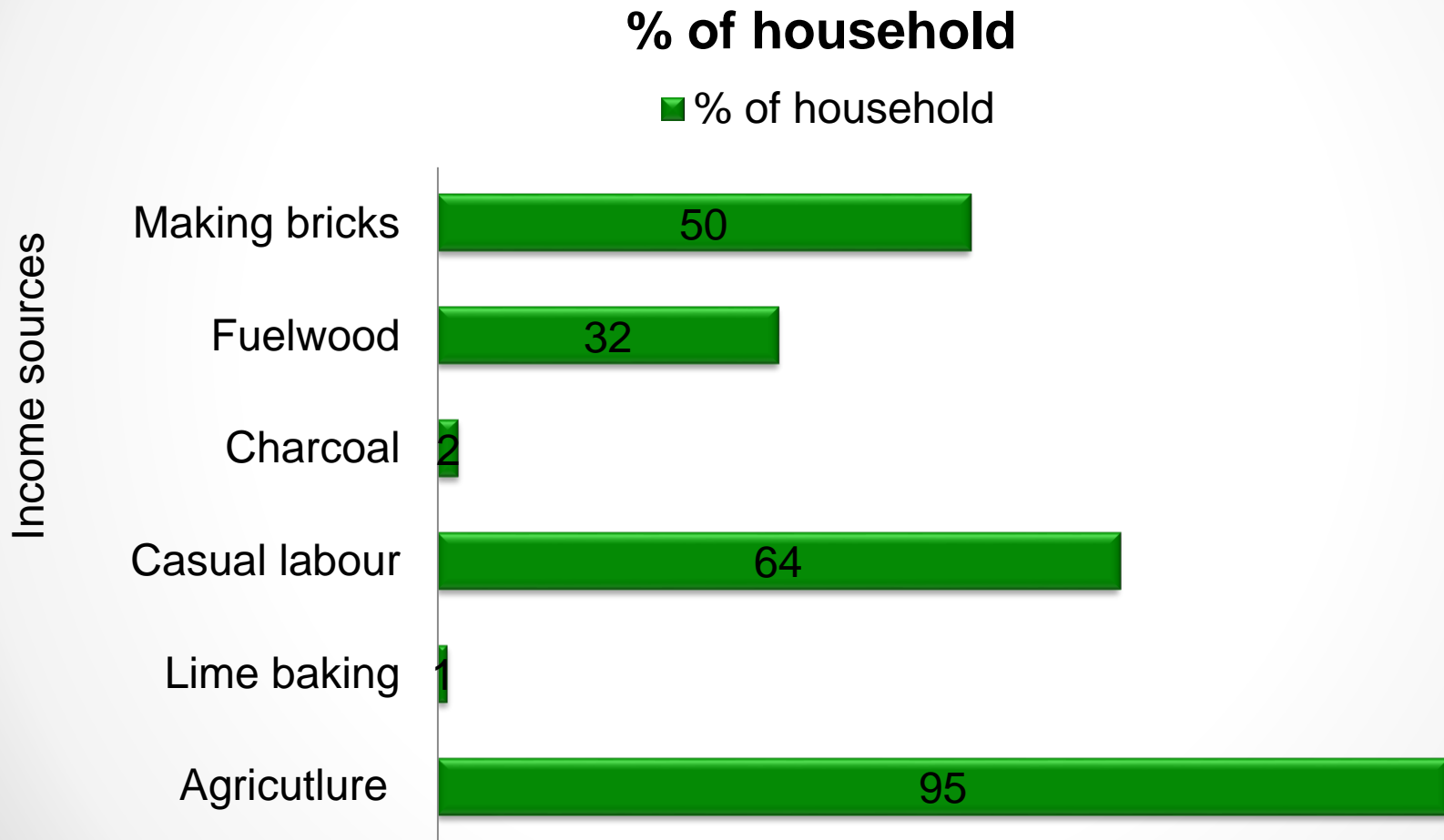


➤ Until 1983, crops were grown for home consumption.

➤ Increased shifting cultivation area because of high demand of market, weak law enforcement, limited alternative options for livelihood

• ➤ Number of households depend on economic conditions

Percentage of household per income source



Lesser known crops and commercial crop



Existing land uses in Reserved Forest areas



Customary use rights



Fallow land

Existing land uses in Sedentary farm



Poor tree component

Wide farm boundary

Existing land uses of traditional practices



Forest conserved for
spring water resources



Sacred forest

Rehabilitation models and activities

- ❖ Community forest with Agroforestry
- ❖ Community forest with natural forest conservation
- ❖ Home garden improvement
- ❖ Understory cultivation of Yam in spring water resources
- ❖ Social fencing
- ❖ Alternative rural energy
- ❖ Training of farmers, women micro-finance group

Demonstration plots for Agroforestry

- It is about 8.41 ha
- Planted *Gmelina arborea*, *Cassia siamea* and *Dalbergia cultrata* along the boundary
- *Sterculia vesicular*, *Mango*, *groundnut*, rice and corn are intercropped.
- survival counting, weeding, fertilizing





User group of 9 HH: Peanut + Gmelina aborea +mango+Sterculia versicolor 24ft x 24 ft
Maize + Cassia siamea +Mango+Sterculia versicolor 12 ft x 12 ft

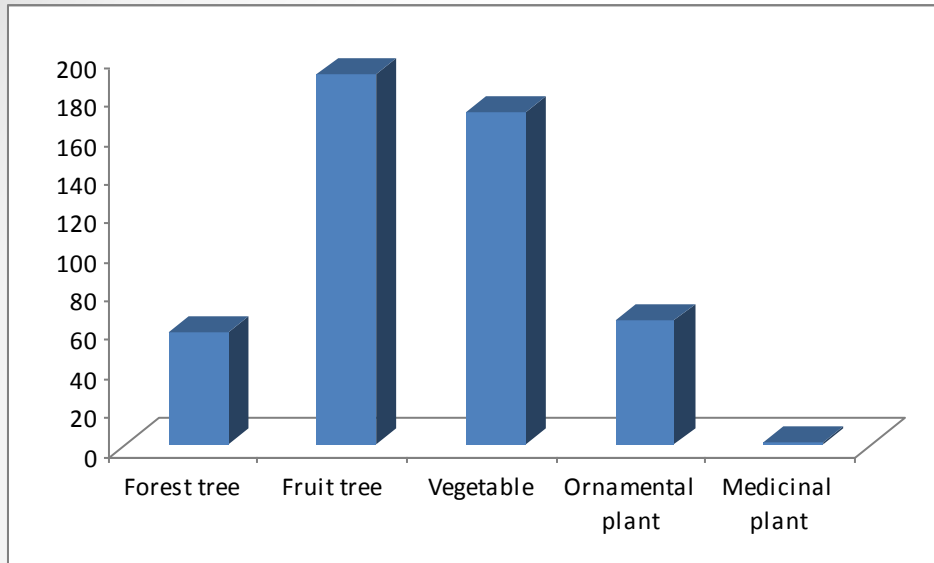


Demonstration plots conducting assisted natural regeneration activities

- It is about 15.89 ha
- Enrichment planting of Padauk (*Pterocarpus macrocarpus*), Pyinkado (*Xylia xylocarpa*), Thinwin (*Millettia pendula*) and Thamalan (*Delbergia Oliveri*)
- Gap planting of Teak
- Fire Protection
- Measuring the tree growth in assisted natural regeneration area and control areas



Homegarden improvement



- 40 % of households were randomly selected and surveyed the planted species (in figure)
- Local farmers are using homegarden products not only for self-consumption but also for subsistence income
- 350 mangoes *Mangifra indica*, 85 hybrid jack fruits, 72 lemon, 5 viss of Horlan flowers, 30 avocados and 20 danyin *Archidendron jiringa* were distributed



October 2014

March 2015

Spring water resources



- Understory cultivation of Yan under the woody trees
- Demonstration of soil erosion control because trees roots are exposed due to the heavy and frequent rain
- Boundary planting of trees to demarcate farm boundary and spring water resources



Conserving of farm trees

- Conservation of farm trees is one of the indigenous practices though the trees distribution is very isolated
- 20 aged and young farmers are randomly selected and interviewed
- farm trees provide shade for livestock, place to take lunch, fuelwood, boundary demarcation, forest products for future generations, edible flowers and fruits, timber in building hut and greening



Farm Forestry (0.5 ha)



Tectona grandis
Cassia siamea



Demonstration of site requirements and techniques to prepare seedlings and planting materials



Giving Training to local farmers about nursery techniques



Number of participants 25 (Women micro-financed group, User Group member, Farmers)

Discussion points Nursery techniques
Community Forestry



Demonstration of soil improvement techniques in degraded areas for tree planting

- ❖ Document traditional practices of soil improvement
- ❖ Compost making using agro-waste
- ❖ Deliver 50 pieces of pamphlet about compost making
- ❖ Demonstrate vegetative conservation techniques in spring water resources
- ❖ Demonstrate techniques of land preparation before planting and mulching



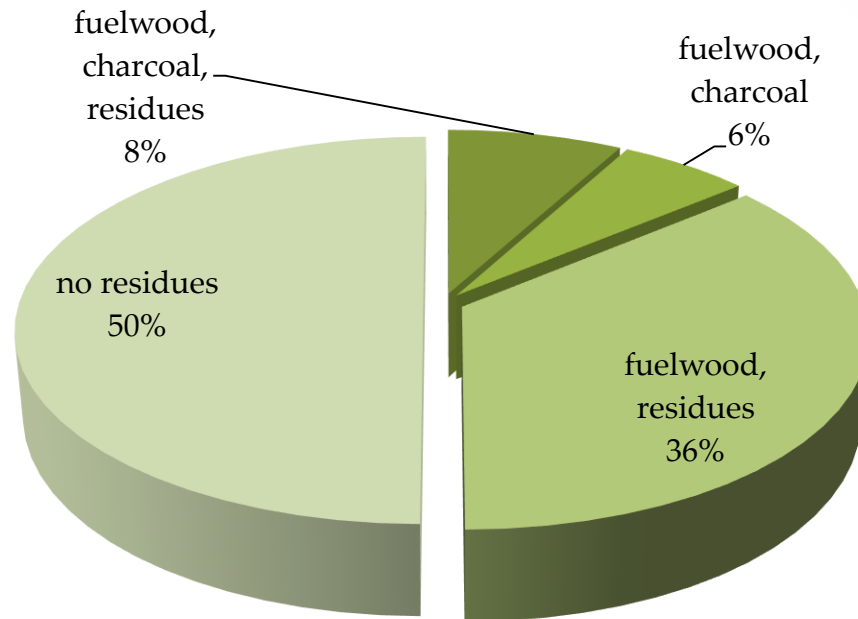
alternative rural energy



- The practice of burning agro-residues was widespread
- Extension activities about using A-stove which can be reduced 40 % fuelwood consumption compared to traditional way of cooking
- Distribution of A1- stove to every household
- Sharing bamboo charcoal making



Existing energy consumption pattern



Percentage of different types of fuelwood utilized by Nyaung Htauk Village (N=50)

Facilitation for social fencing of assisted natural regeneration

- Through consultation meeting with use group members, internal rules and regulations regarding access, utilization of forest products, management and exclusion of non-users are formulated
- Traditional unwritten rules for protection of traditional forest management were documented
- Participation of village head, local FD staff and community in protection of assisted natural regeneration plots was facilitated.
 - e.g. Head of the village tract send a letter to neighboring villages that cutting standing trees is prohibited as it is community forest areas



Training modules and techniques for forest rehabilitation

- Local farmers were demonstrated the techniques of bamboo seedlings from rhizome and laying.
- The procedures for making EM bokashi were distributed to local farmers in local language
- Hand outs related to nursery techniques and seeds are distributed



Process of demonstration including questions and answers by local farmers



Manual of bamboo management and planting techniques



Procedures for making EM bokashi

Site Visit of Monitoring and Evaluation Team



Site Visit of Deputy Minister of Ministry of Environmental Conservation and Forestry



Annual Project workshop and cross-site visit



Laos



China

Myanmar



Conclusions

- Endangered native tree species very slow growing when compare to preferred tree species
- Accessibility of rehabilitation site
- Awareness and incentives for forest conservation
- Contributes not only for forest rehabilitation but also for socio-economic benefits of the community
- Provides demonstration of agroforestry based community forests in farm land by providing secure land tenure
- Contributes to food security, nutrition through home garden improvement
- Knowledge sharing in the region

Thank you very much