Rainforestation: an Innovative Strategy in Forest Restoration

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Outline

- History of Rainforestation
- Rainforestation Concept
  - Planting Design
  - Native Tree Species used in RF
- Rainforestation Farming
- Rainforestation and Climate Change Mitigation
- Rainforestation Initiatives
- Challenges

Reforestation vs. Forest Restoration

- **Reforestation** is the natural or intentional restocking of existing forest and woodlands that have been depleted, usually through deforestation.

- **Forest restoration** is a complex task, complicated by diverse ecological and social conditions, that challenges our understanding of forest ecosystems.

Most reforestation efforts in the Philippines focus on the development of forestry and agro-forestry system using tree species which are introduced because they are selected for their fast growth and easy germination. The species composition of the original forest that once covered the land prior to logging are rarely taken into account.

Milan and Margraf, 1996

Natural Forest

Plantation Forest

Farmers continue to cut down trees to give way for more agricultural lands and for economic reasons foremost.

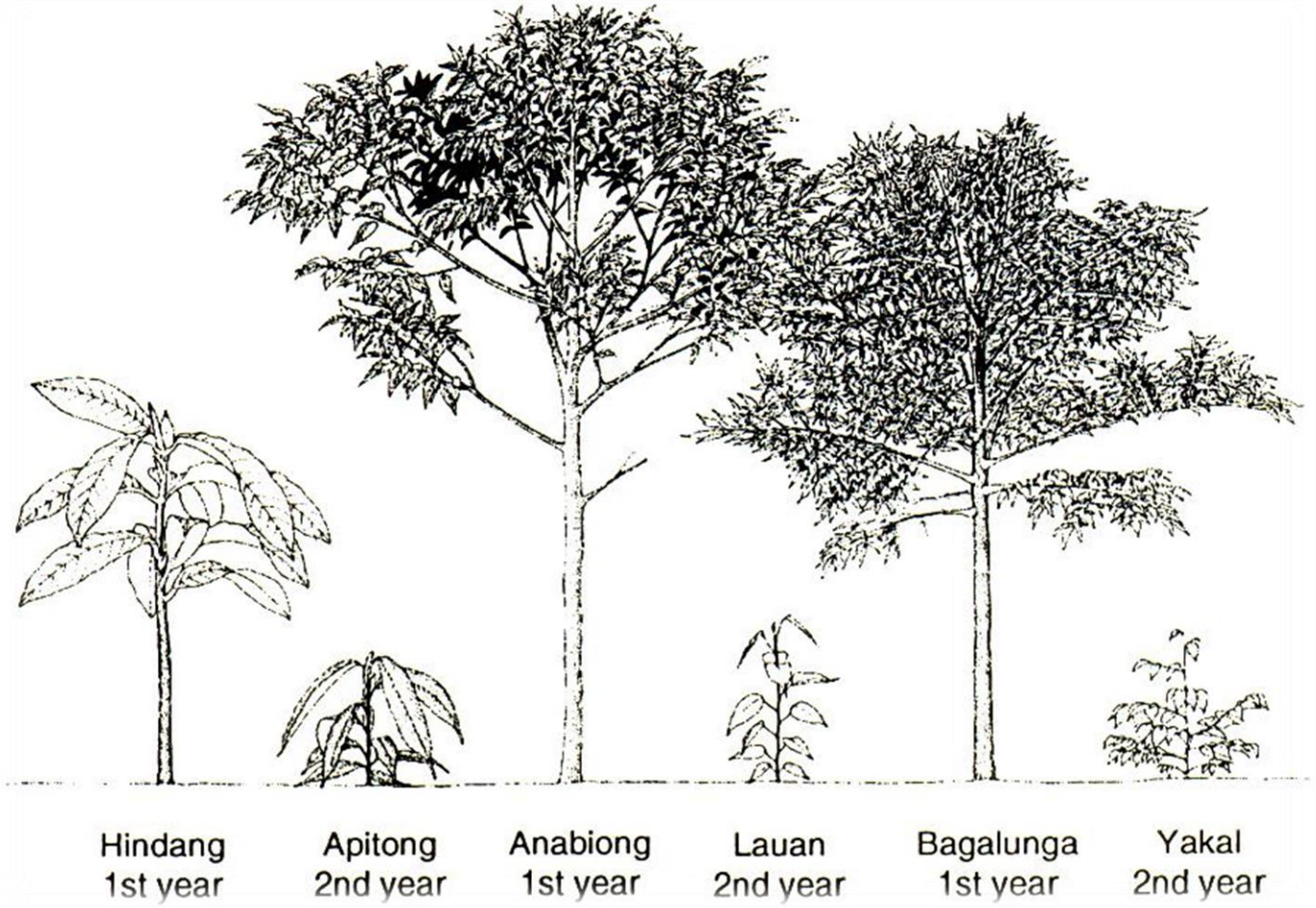
Rainforestation is the use of native tree species.

Paradigm Shift in Forest Restoration

Rainforestation

- ✓ as an option for rural development and biodiversity conservation
- ✓ Issuance of DENR MC 2004-06
  - uses native/local trees of the area to be reforested (biodiversity)
  - gives importance on improvement of structural habitat to support wildlife (habitat restoration)
  - restores ecological integrity (watershed)

PLANTING DESIGN



Sun demanding local forest tree species recommended for RF on degraded limestone hills (in decreasing order of productivity).

Local Name	Scientific Name
Tindalo	*Afzelia rhomboidea*
Kalumpit	*Terminalia microcarpa*
Bitangol	*Calophyllum blancoi*
Anislag	*Securinega flexuosa*
Bagalunga	*Melia dubia*
Dao	*Dracontomelon dao*
Ipil	*Intsia bijuga*
Mntn. Agoho	*Casuarina nodiflora*
Kamagong	*Diospyros philippenensis*
Bahay	*Ormosia calavensis*
Molave	*Vitex parviflora*
Lingo-lingo	*Vitex turczaninowii*

Shade loving local forest tree species of Leyte recommended for RF on volcanic soils

Local Name	Scientific Name	Local Name	Scientific Name
Palosapis	*Anisoptera thurifera*	Guijo	*Shorea guiso*
Apitong	*Dipterocarpus grandiflorus*	Yakal-malibato	*Shorea malibato*
HairyApitong	*Dipterocarpus philippinensis*	Red lauan	*Shorea negrosensis*
Hagakhak	*Dipterocarpus warburgii*	Tangile	*Shorea polysperma*
Manggachapui	*Hopea acuminata*	Mayapis	*Shorea palosapis*
Dalingdingan	*Hopea foxworthyi*	Kamagong	*Diospyros philippensis*
Gisok-gisok	*Hopea philippinensis*	Talakatak	*Castanopsis philippinensis*
Yakal-kaliot	*Hopea malibato*	Ulaian	*Lithocarpus pruinosa*
Bagtikan	*Parashorea malaanonan*	Dungon	*Heritiera sylvatica*
White Lauan	*Shorea contorta*	Kulatingan	*Pterospermum obliquum*
Almon	*Shorea almon*	Balobo	*Diplodiscus paniculatus*

Rainforestation Supports Forest Biodiversity

Many soil organisms help potential decomposers such as Fungi and bacteria speed up decomposition of the soil waste in the environment. Their presence in the ecosystem play an important role. With a cool, moist soil condition in the Rainforestation Farm, their efficiency to decompose is enhanced.

Rainforestation enhances Forest Biodiversity

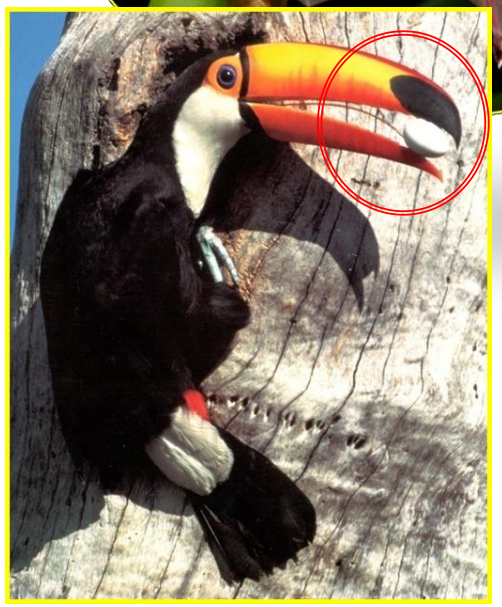
Many Philippine birds and insects depend on the forest ecosystem for survival.

The famous tarsier is found In Leyte especially in Rehabilitated areas

Frogs and other amphibians and reptiles are also part of the biodiversity whose existence depend on the forest ecosystem.

Native Trees vs. Exotic Trees

- The fast growing exotic trees have low wood quality; hence, high quality native trees still need to be harvested in their natural habitat.
- The exclusive use of exotic tree species in reforestation reduce forest biodiversity as pollinators and tree dependent wildlife will be lost.



Native Trees vs. Exotic Trees

- Mother trees become rare and seed material is even less available.

- Repeated clear cutting of fast growing exotics deplete soil nutrient fast, making the soil unproductive and reforestation difficult in the long run.

Native Trees vs. Exotic Trees

- Cultivation of monoculture exotic trees are prone to pests infestation hence distorting the landscape.

Effects of Rainforestation on site quality

1. Improvement of soil chemical properties;
2. Improvement of soil structure and water holding capacity;
3. Improvement of soil organic matter and soil color;
4. Improvement of nutrient status;
5. Improvement of biological activity; and
6. Improvement of microclimate

Goals

Replace the more destructive forms of slash-and-burn or *kaingin* practices

Goals

Enhance forest biodiversity

Goals

Form a buffer-zone around the primary forest

Goals

Help maintain the water cycle

Goals

Provide farmers with a stable and high income

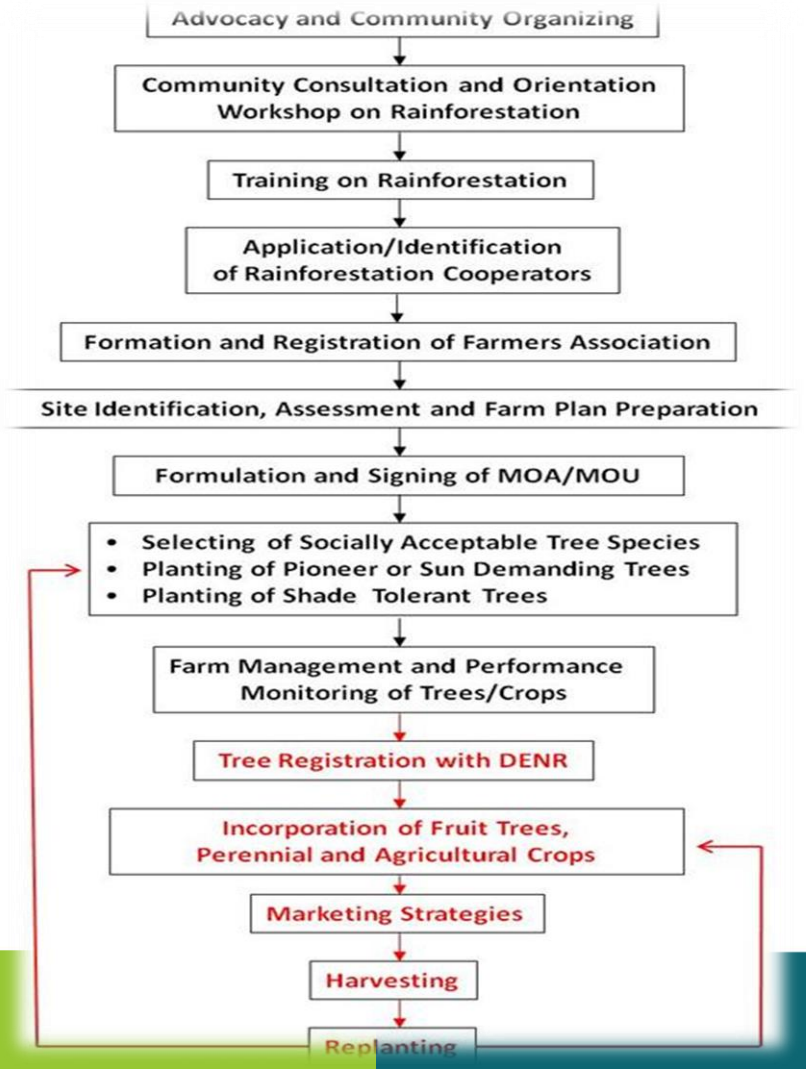
Rainforestation Farming

Rainforestation Farming is a sustainable farming system used as a strategy for forest restoration using native or indigenous tree species in combination with agricultural crops.

A farming system that closely resembles the structure of a natural Philippine rainforest ecosystems or home gardens that promotes the use of native or local trees commonly growing in the area.

It considers farming systems to support livelihood as an innovation.

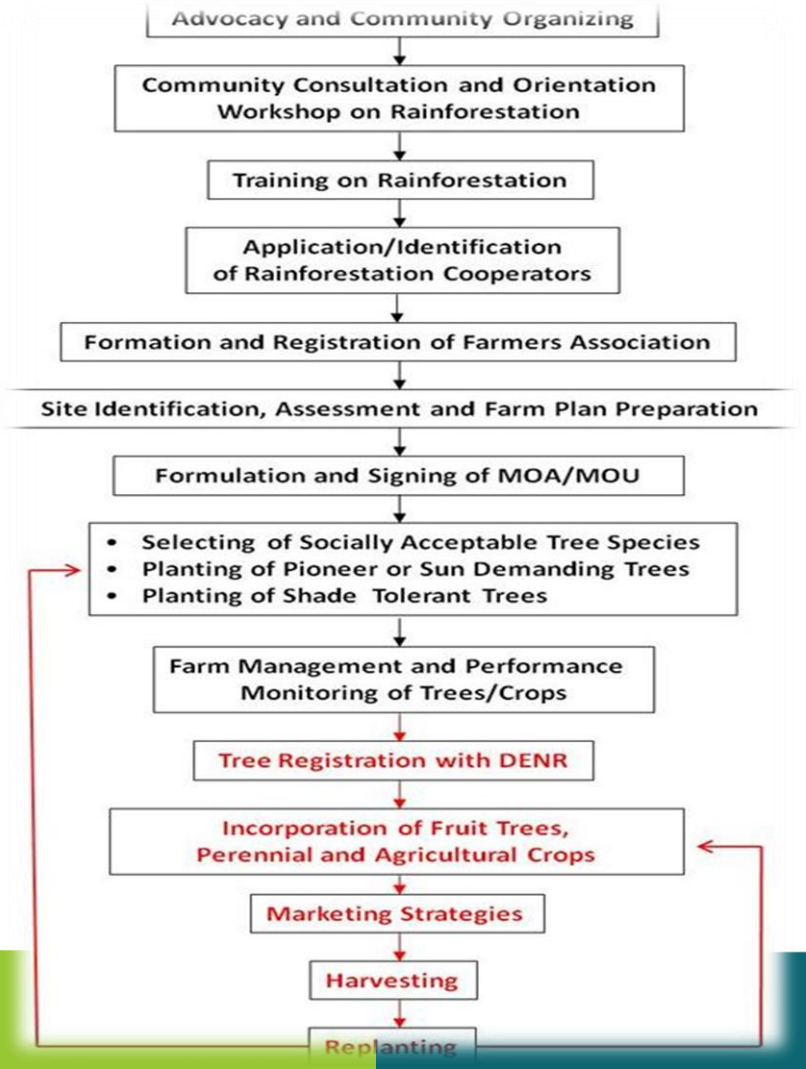
Implementing Strategies



1. RF Training

2.Site identification and farm plan preparation

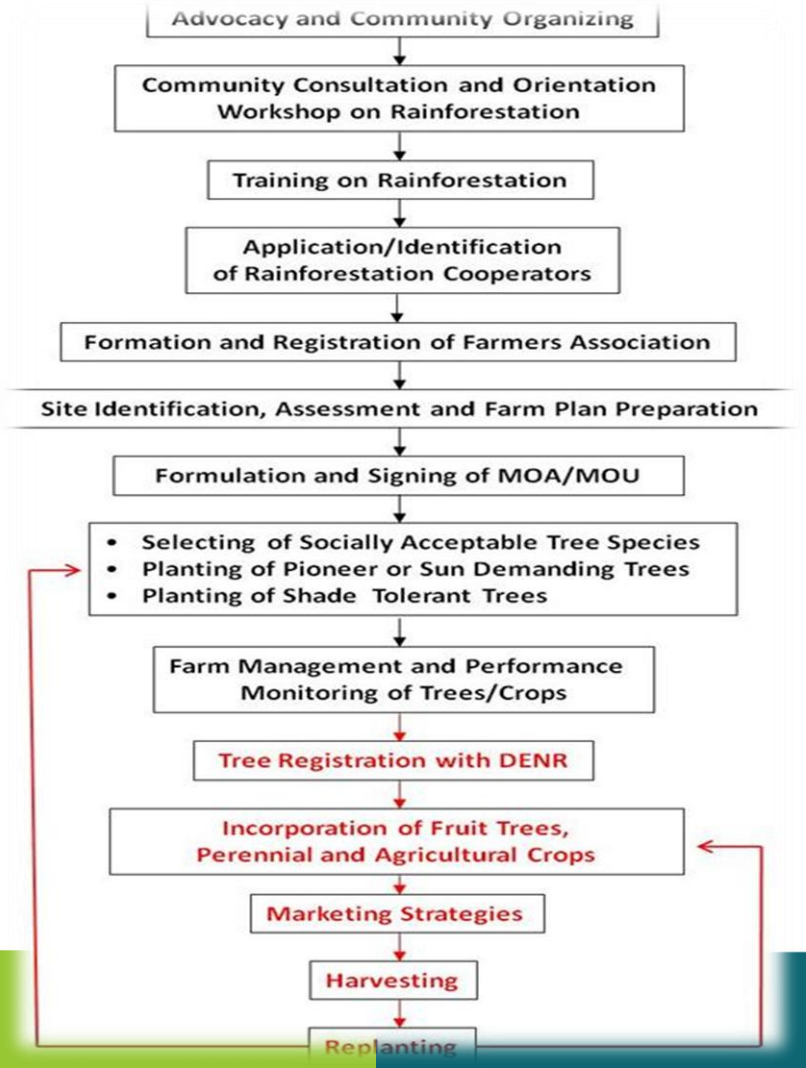
Implementing Strategies



3. MOA Signing

4. Planting of pioneering trees

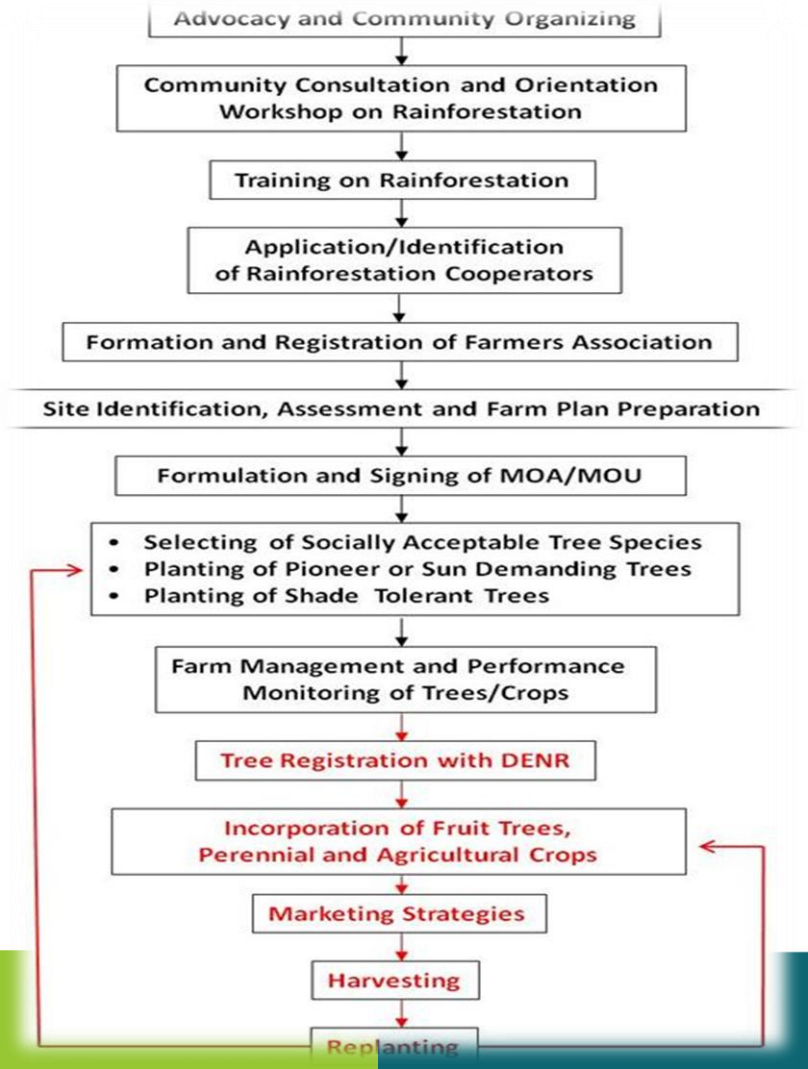
Implementing Strategies



4.a Planting of shade loving tree species

4.b Integration of livelihood plant species

Implementing Strategies



5. Registration with DENR

ANNEX B

NUMBER : 33

CERTIFICATE OF REGISTRATION OF TREE PLANTATION(S) IN PRIVATE LAND(S)

THIS IS TO CERTIFY THAT MACARIO M. ROMANO, the lawful owner of the private land (s) under Tax Declaration No. 28575 located in Brgy. Mailhi, Baybay, Leyte with TREE PLANTATION RECORD number 33, planted the following trees in his or her lot (s) :

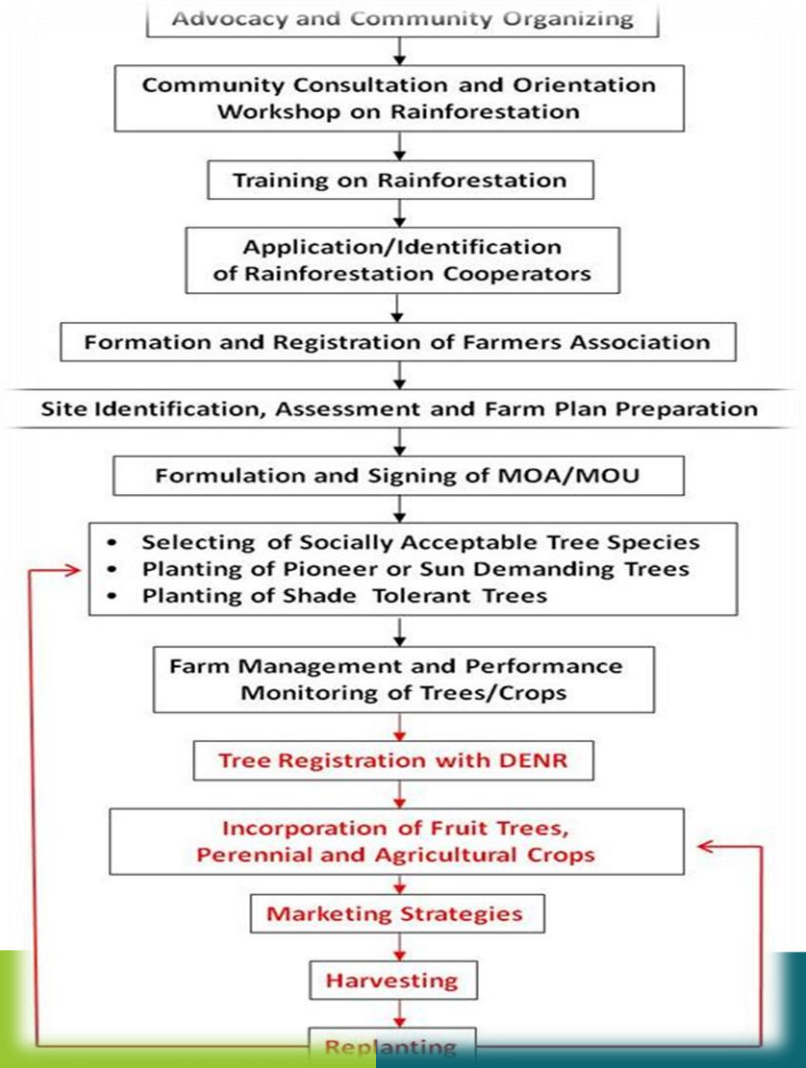
SPECIES	AREA	YEAR PLANTED	STOCKING (Ave. per hectare)
Assorted Forest trees	1.11 hectare	1992-1998	
Fruit trees	0.39 hectare	-do-	

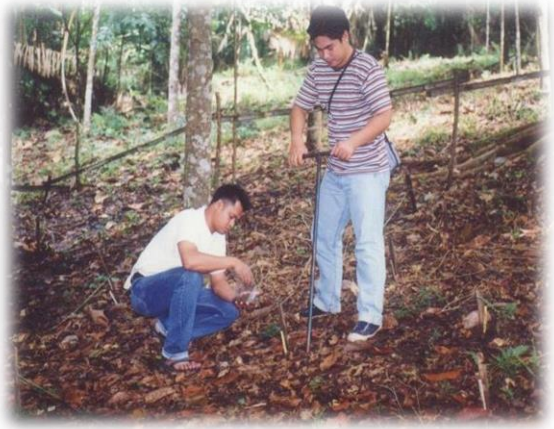
TOTAL AREA: 1.5 hectare

RAMON N. CALUMBAY
OIC, CENR OFFICER

DATE: 27 December 1998

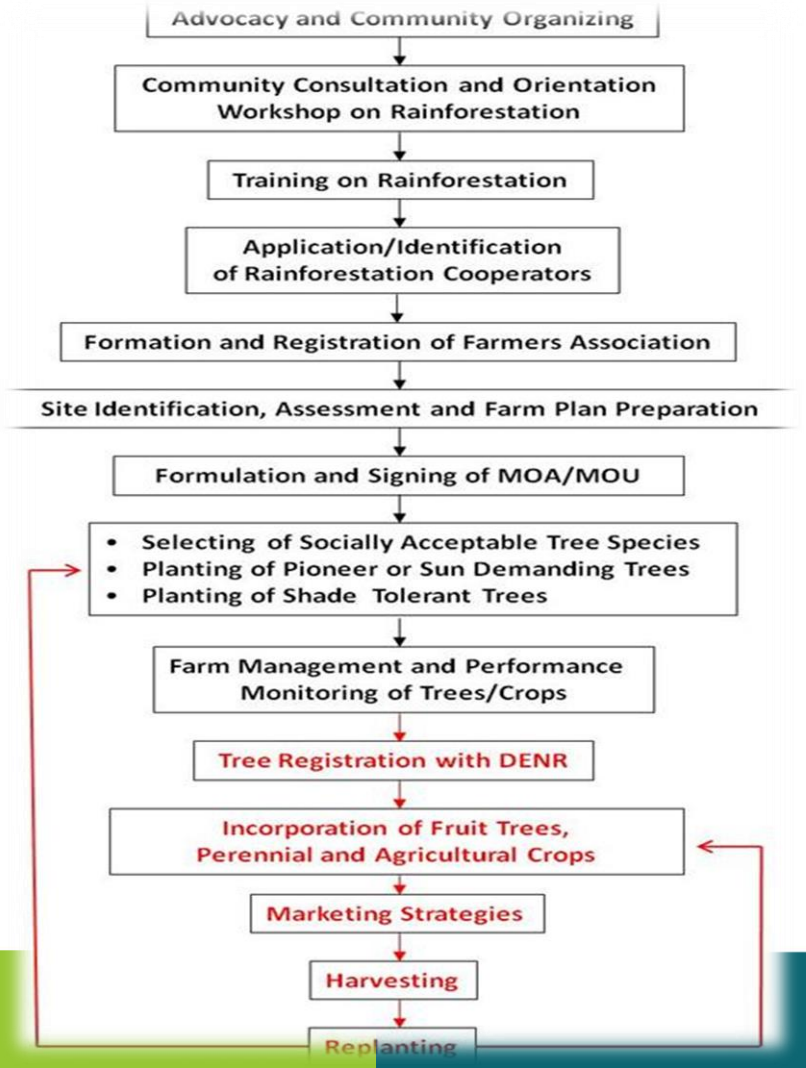
Implementing Strategies

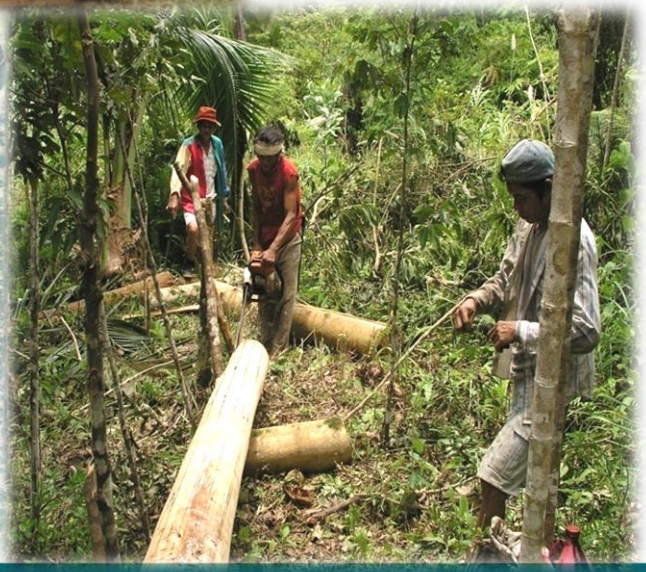




6. Monitoring

Implementing Strategies





7. Harvesting and Marketing

Forest Resilience

Ability of forest to withstand anthropogenic pressures and the capacity to bounce back and adapt to changing conditions

Available scientific evidence strongly support the conclusion that the capacity of forest to resist change or recover after the disturbance is dependent on biodiversity at all scales

After Typhoon Yolanda

Recovery stage (1 month after)

Some Native trees showed resiliency after Yolanda

Local Name	**Scientific Name**
Palosapis	*Anisoptera thurifera*
Bagtikan	*Parashorea malaanonan*
White Lauan	*Shorea contorta*
Mayapis	*Shorea palosapis*
Tangile	*Shorea polysperma*
Hagakhak	*Dipterocarpus warburgii*
Guijo	*Shorea guiso*
Yakal-malibato	*Shorea malibato*
Toog	*Petersianthus quadrialatus*

Challenges

THANK YOU!

… you are the hope in restoring our forest…