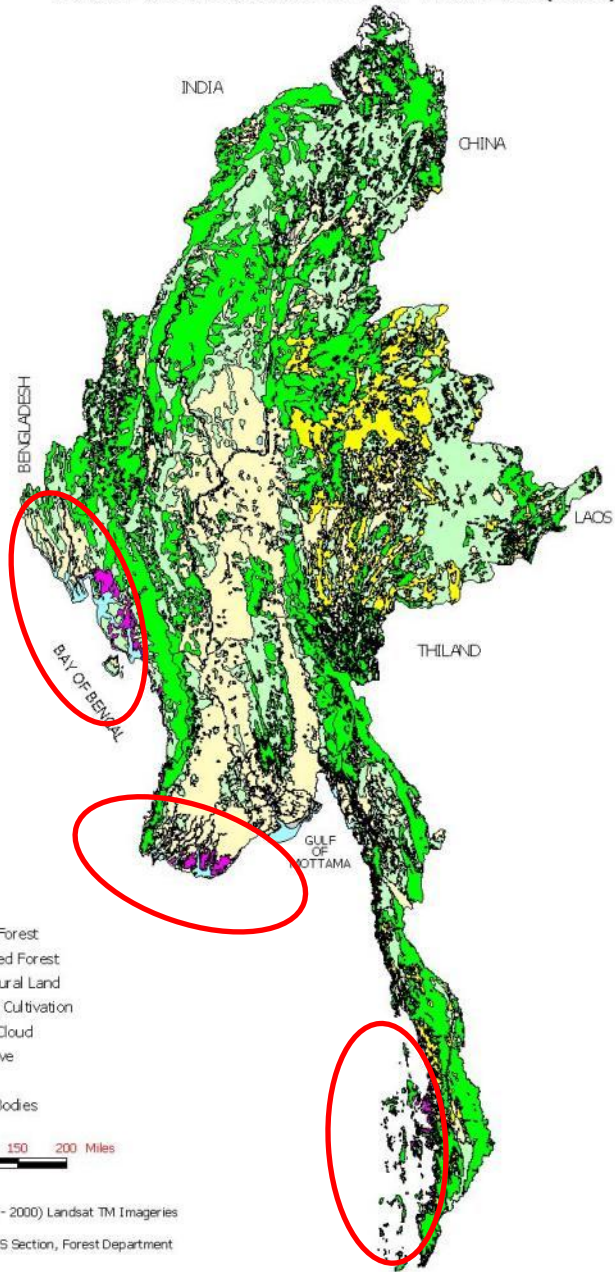


**Workshop on mangrove rehabilitation and conservation**  
12 November 2012

**Challenges and lessons learned from  
ongoing CLEARR project (MERN)**

**U Win Maung  
Project Manager  
Coastal Livelihood and Environmental Assets  
Restoration in Rakhine (CLEARR)**

# FOREST COVER STATUS MAP OF MYANMAR (2000)

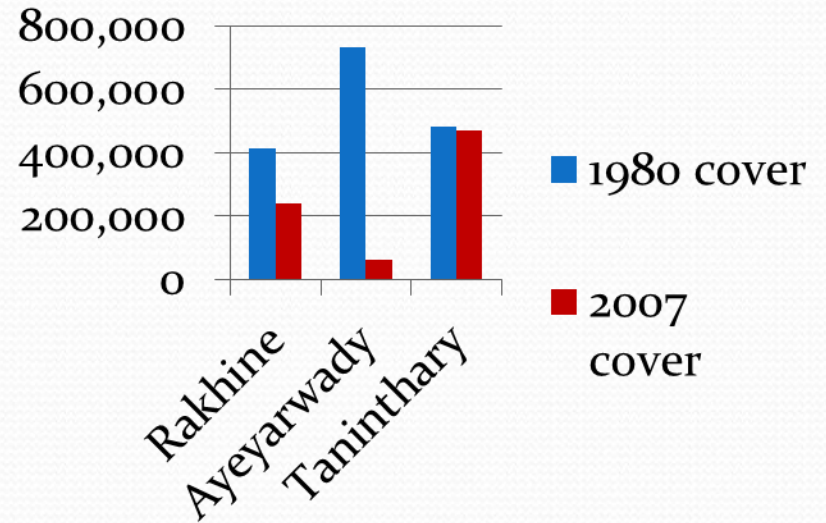


- LEGEND**
- Closed Forest
  - Degraded Forest
  - Agricultural Land
  - Shifting Cultivation
  - Snow/ Cloud
  - Mangrove
  - Others
  - Water Bodies

0 50 100 150 200 Miles

Source :  
Forest Types - (1998 - 2000) Landsat TM Imageries  
Remote Sensing & GIS Section, Forest Department

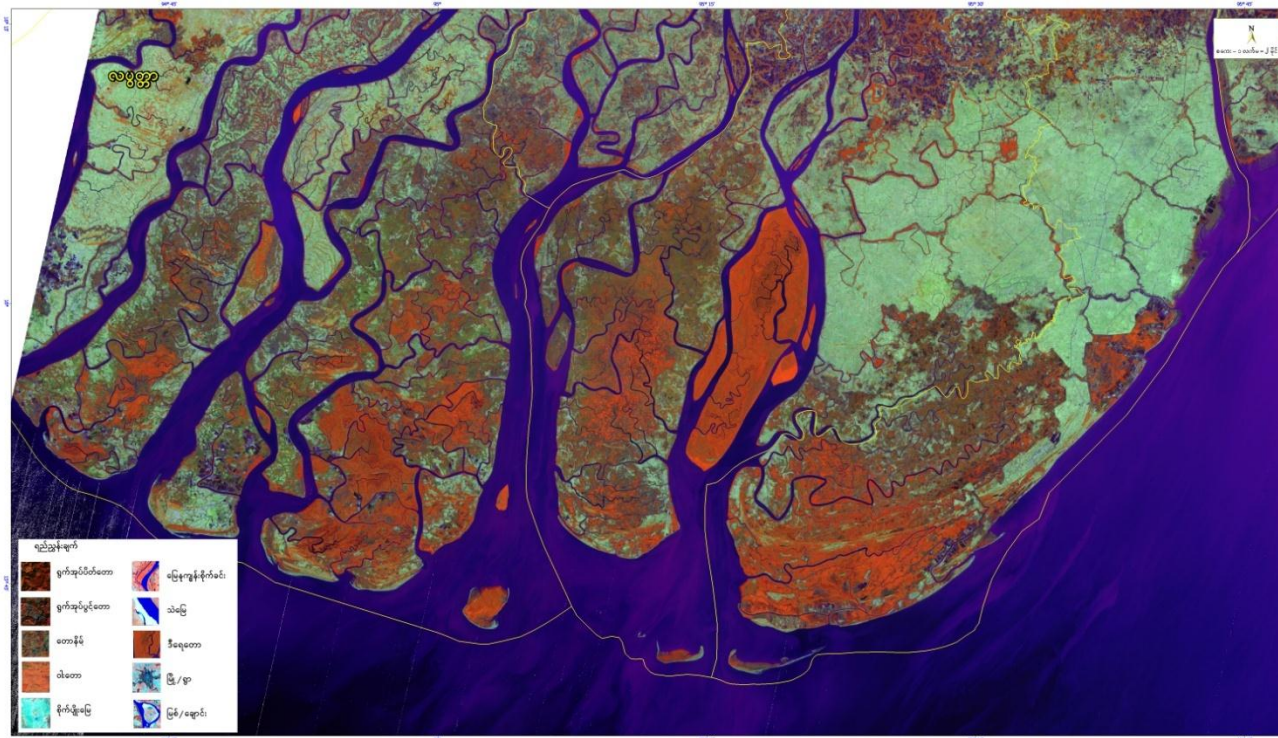
State/Div	Acres	
	1980 cover	2007 cover
Rakhine	413,850	240,968
Ayeyarwady	732,522	61,399
Taninthary	482,099	469,681
<b>Total</b>	<b>1,628,471</b>	<b>772,048</b>



# Mangrove Forests cover change In Ayarwaddy (1980 to 2007)

Division/ State	Total Mangrove (1980)	Other Landuse (ac)			Current Mangrove (2007)
		Agriculture	Shrimp pond & other	Total	
Ayarwaddy	732,522	265,917	405,206	671,123	61,399

ရောဂတ်တိုင်းဒေသကြီး၊ ဒီရေတောတည်နေရာပြမြေဟ်တုခါတံပံ (၂၀၀၁)



- 33 Mangrove Species
- Over 100 Mangrove and Associate
- *H formes*, *E agallocha*, *Avicennia spp.*
- *Rhizophora spp.*, *Bruguiera spp.*, *Ceriops spp.*, *Sonneratia spp.*, *Xylocarpus spp.* mainly can be found.

# Mangrove rehabilitation in Ayeyawady Division

From 1980 to 2007,  
70848 acres of mangrove plantation established.



Pond System Mangrove Nursery.

# Mangrove Plantation



# Community Forestry Plantation



# Change of Mangrove in Ayeyawady Division

## The main problems

Settlement

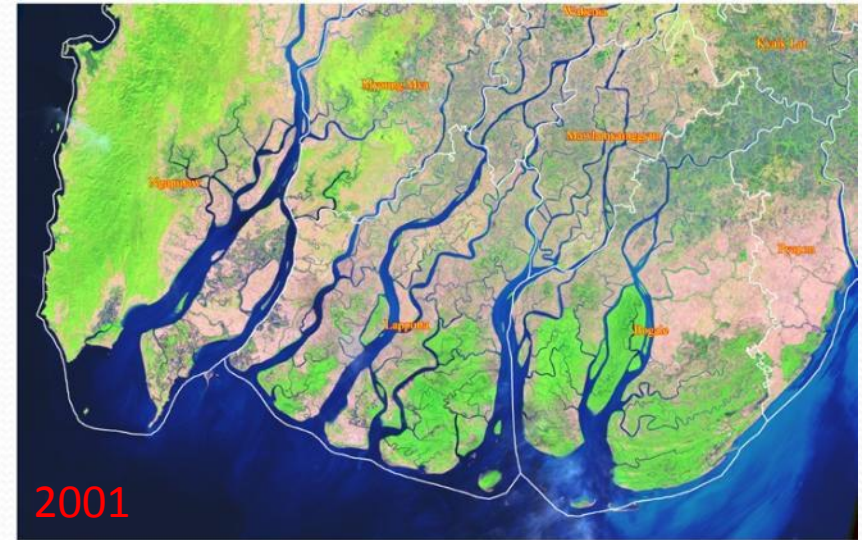
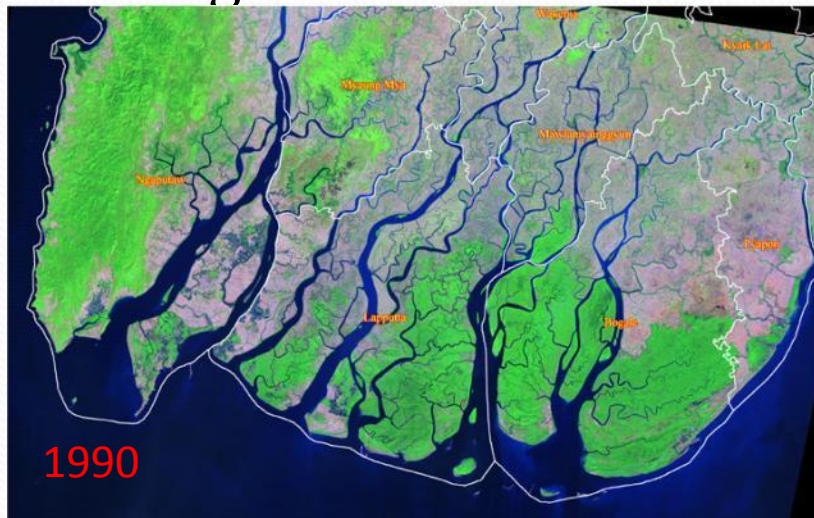
Charcoal burning and fuel

Paddy field

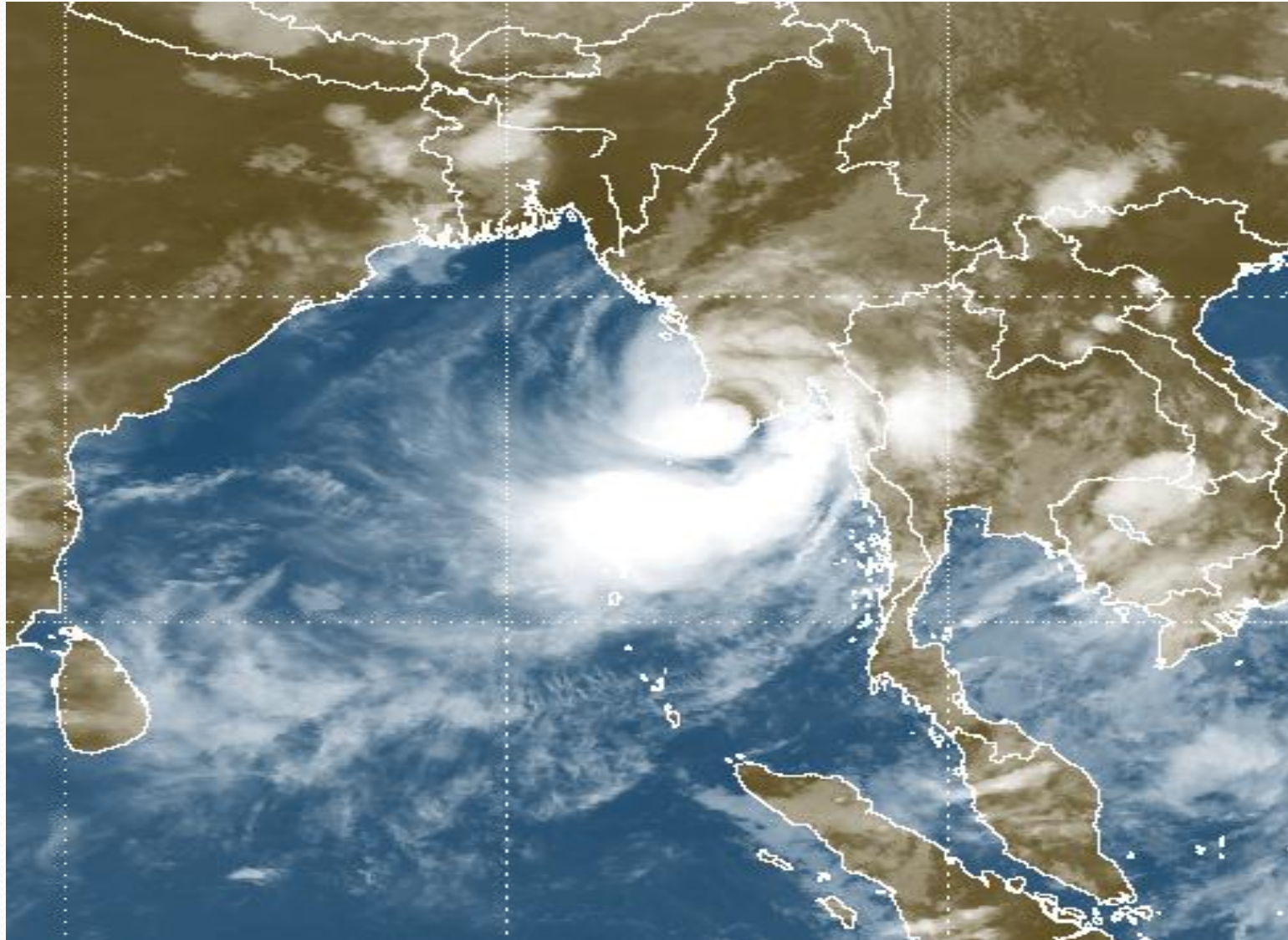
Shrimp farming

Salt pam

Home garden



# Cyclone Nargis (2<sup>nd</sup> May 2008)





# Damages of Mangrove forest



Pre cyclone  
Nargis



Post cyclone  
Nargis

# Damages of Mangrove forest

Pre cyclone  
Nargis



Post cyclone  
Nargis

## Rehabilitation plan in Nargis hit area

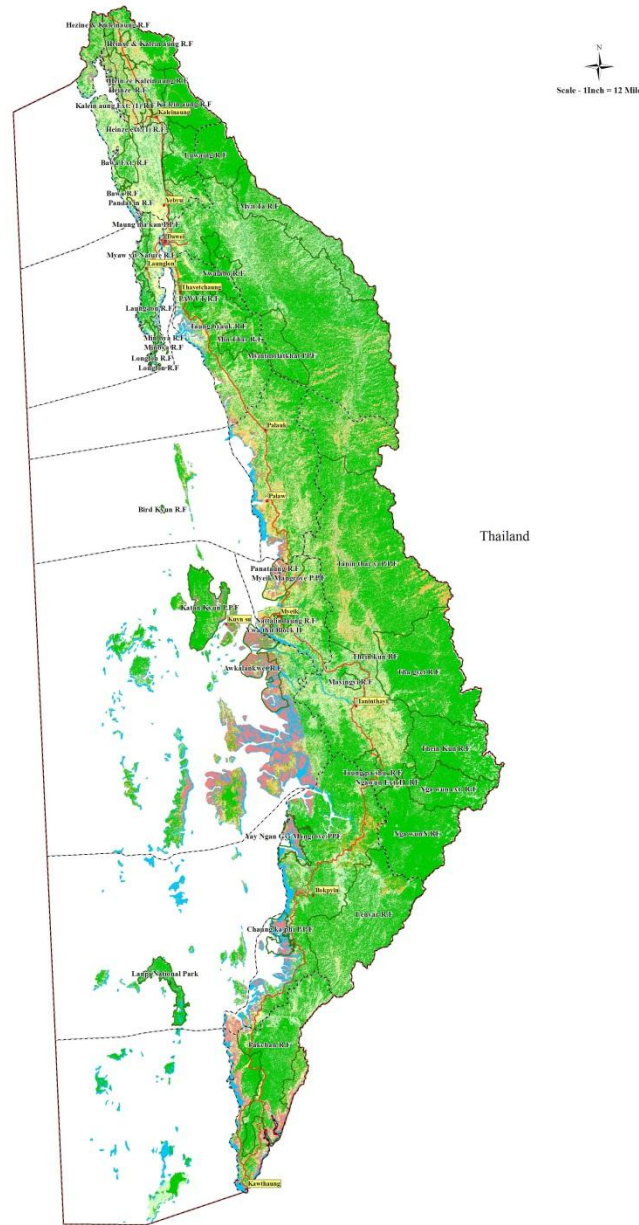
- Annually, 3000 acres are being established by Forest Department.
- Integrated Mangrove Management and Rehabilitation Project through community participation in Ayeyawady Delta, jointly implemented by Forest Department and JICA, is carried out.
- Cooperation and coordination with NGOs and INGOs are underway in cyclone hit areas.

# Mangrove Forests cover change In Tanintharyi (1980 to 2007)

Division/ State	Total Mangrove (1980)	Other Landuse (ac)			Current Mangrove (2007)
		Agriculture	Shrimp pond & other	Total	
Tanintharyi	482099	8895	3523	12418	469681

# Mangrove Forest Cover in Tanintharyi

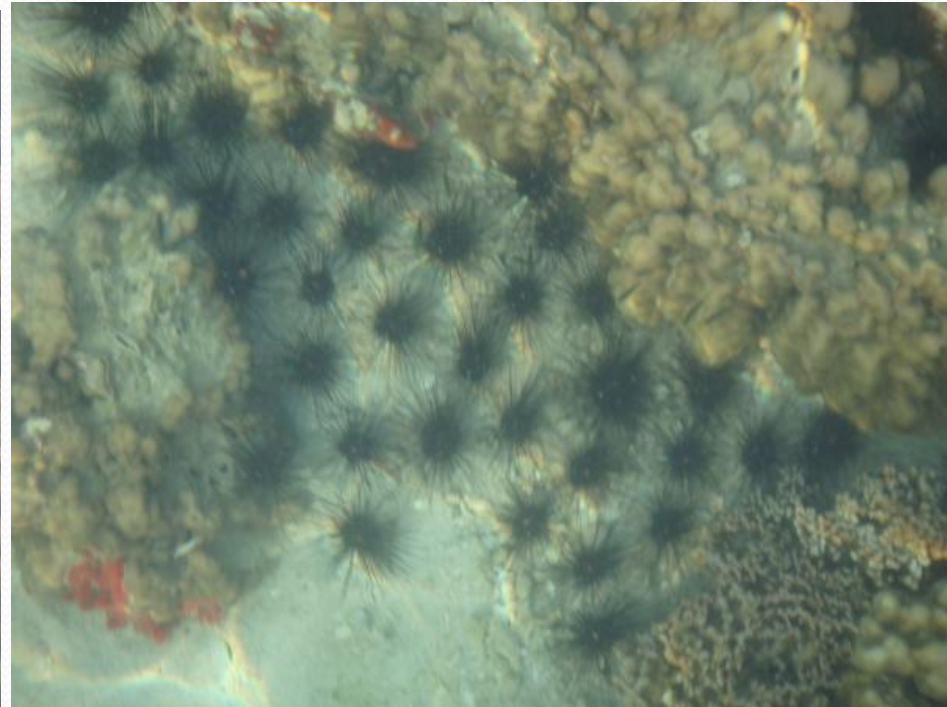
## Landuse & Forest cover Condition of Tanintharyi Region



- Mangrove forests in Tanintharyi Division, especially on Lampi Island are intact and in good condition. They are the last natural mangrove of Myanmar.
- Mangrove trees with large dimension were observed.
- *R. Mucronata* and *R. apiculata* were observed as dominant species.
- Associat spp. observed are *C. targal*, *S. griffithii*, *S. alba*, *X. granatum*, *X. molusensis*, *A. officinalis*, *A. marina*, *A. alba*, *B. gymnorhiza*, *B. parviflora*, *B. cylindrica*, *A. rotundifolia*

# Marine and Coastal Ecosystem

Four significant types of ecosystems were observed in the area.



Sea grass & Coral reef ecosystem

## Beach and Dune Ecosystem

Beach and Dune ecosystem occurs along the sand dunes adjacent to the shore lines. Dominant tree spp. observed in this ecosystem are *Casuarina equisetifolia*, *Calophyllum inophyllum*, *Terminalia catappa*, *Pandanus tectorius* and *Scaevola taccada*.



# Mangrove Forest Ecosystem

Mangrove ecosystem occurs in the intertidal zones of the Island.







# Evergreen Forest Ecosystem

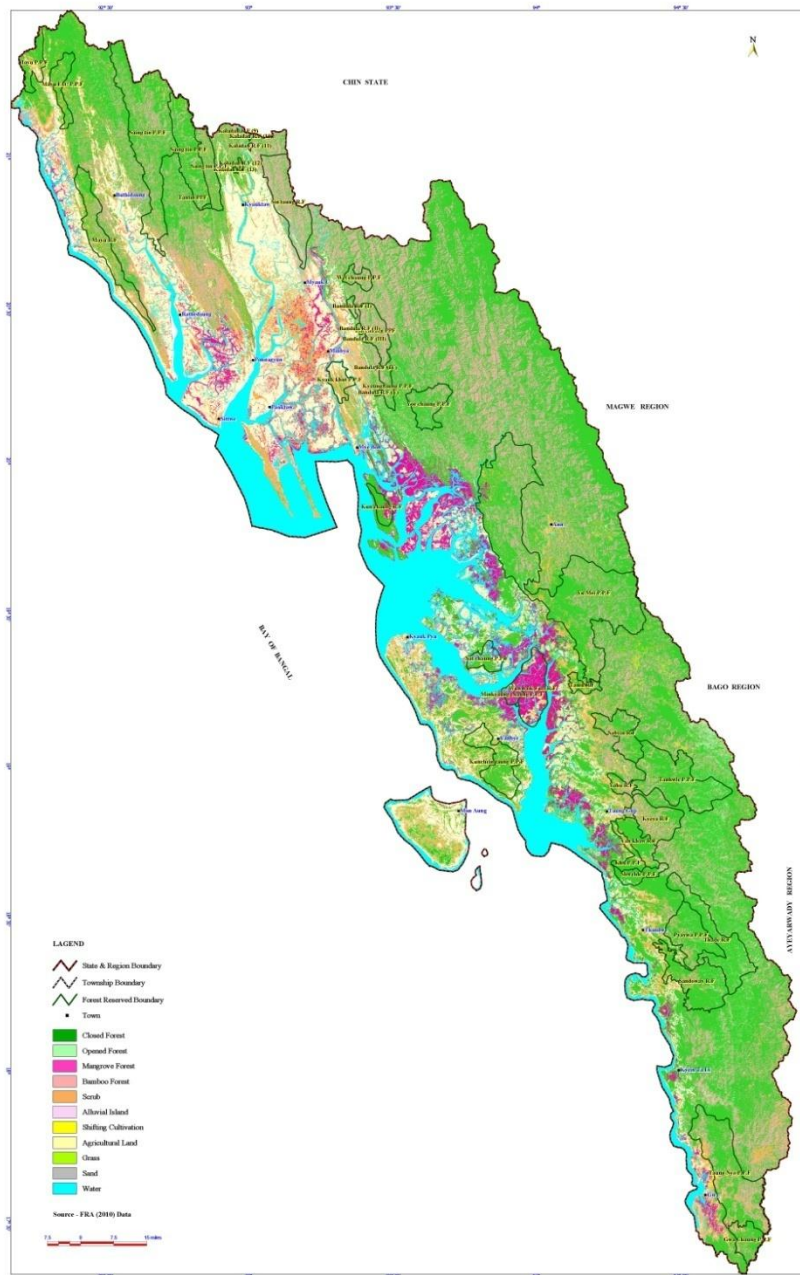
Evergreen forest ecosystem is extensive on the Island.



# Mangrove Forests cover change In Rakhine (1980 to 2007)

Division/ State	Total Mangrove (1980)	Other Landuse (ac)			Current Mangrove (2007)
		Agriculture	Shrimp pond & other	Total	
Rakhine	413850	55027	117855	172882	240968

## Mangrove Forest Cover Area in Rakhine Coastal Region



## Species in Rakhine Mangrove

- Dominant species are *Rhizophora apiculata* and *R. mucronata*.
- Some areas are dominated by *Heritiera formos* and *Xylocarpus molucensis*.
- Associate species are *Avicennia spp.*, *Bruguiera spp.*, *Ceriops spp.*, *Sonneratia spp.*, *Xylocarpus spp.*, *Excoecaria spp.*, *Heritiera*.

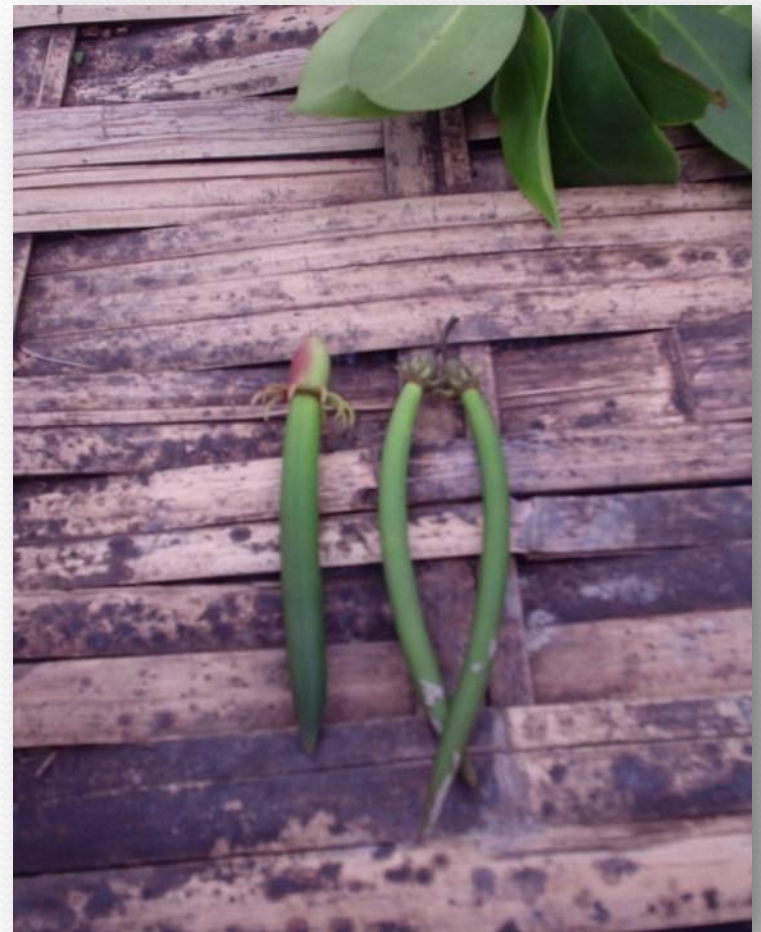
# Current condition of Mangrove forest in Rakhine



# Village protected mangrove forest



# *Bruguiera hainessi*



# The problem of Rakhine Mangrove



Paddy field



# Semi-natural shrimp farming



# Fuelwood and Charcoal burning



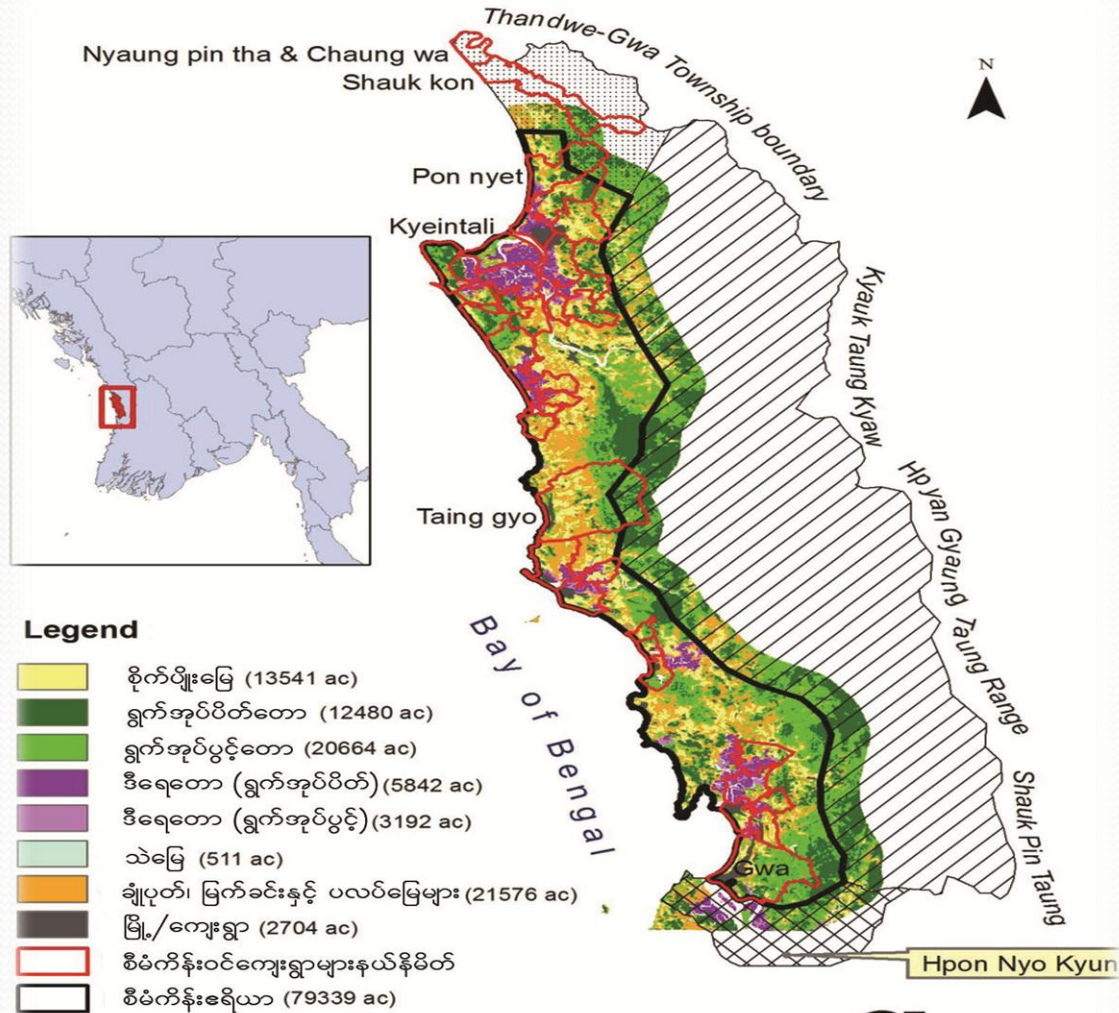
## Bark collection for tannin



# Project Description

- Coastal Livelihood and Environmental Assets Restoration in Rakhine (CLEARR)
- Myanmar Environmental Rehabilitation Network (MERN) comprising 17 Myanmar NGOs, originally founded in 2009 after Nargis
- 3 years (July 2011 to June 2014),
- Funded 3 million US \$ by Livelihood and Food Security Trust Fund (LIFT)
- Southern part of Rakhine, Gwa Township and Kyeintali Sub-township

# CLEARR Project Location



# CLEARR Project Goal

- Food and livelihood security of coastal communities in Gwa Township and Kyeintali Sub Township increased through agricultural and livelihood support, cooperative mangrove rehabilitation and management, and improved capacity for livelihoods development and environmental governance.

# Expected Output

- Output 1

Increased livelihood productivity through development of diverse and locally-appropriate agriculture, forestry, fisheries or other economic activities and new technology

- Output 2

Mangrove ecosystems have been rehabilitated, with increased potential within and between communities and other key stakeholders

# Expected Output

- Output 3

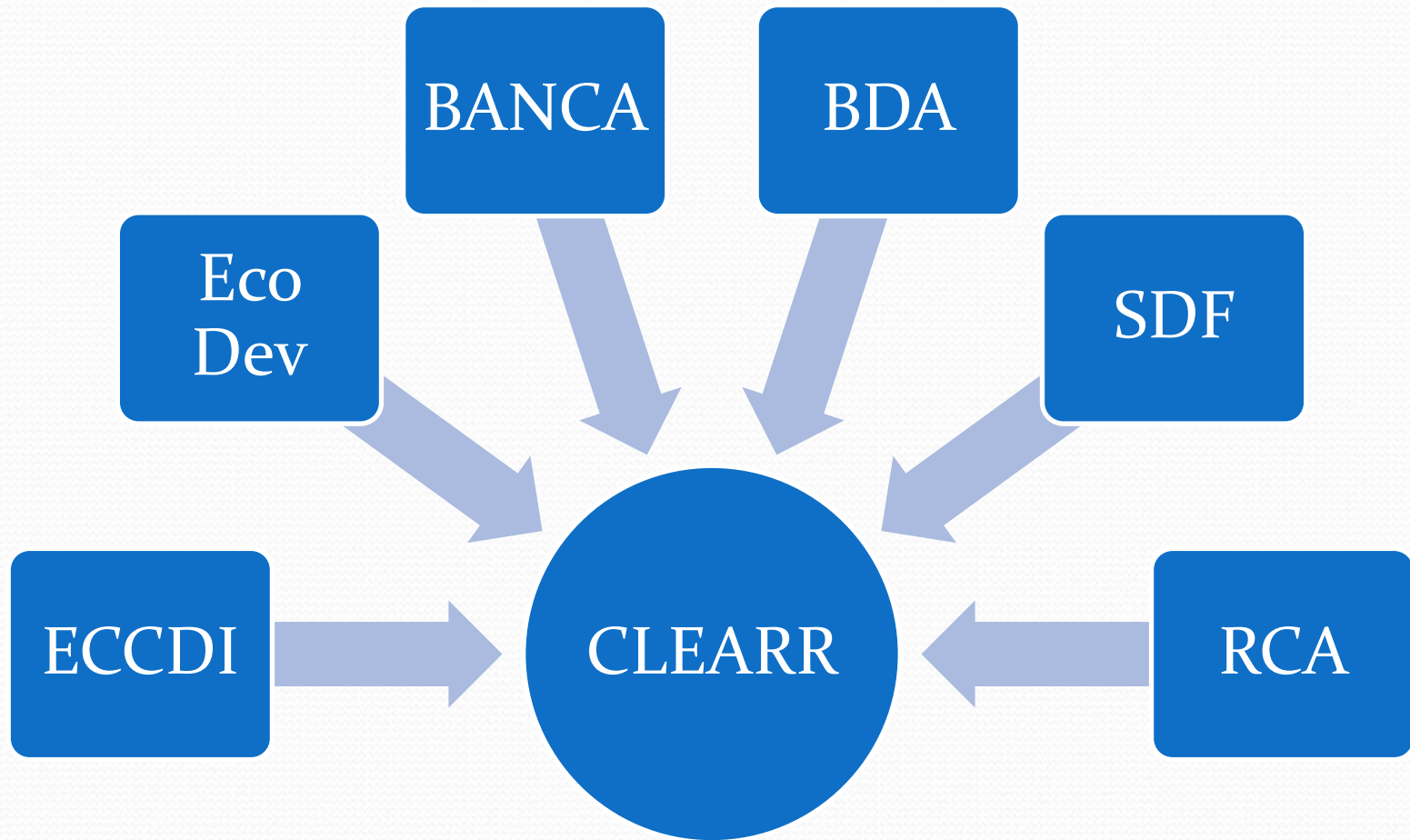
Especially vulnerable households have increased food security and access to social protection while contributing to ecosystem restoration

- Output 4

Capacity built at all levels – for local stakeholders including line departments and implementing partners – for participative and reflective planning, and implementation of livelihood and resource management interventions, and engagement with key stakeholders



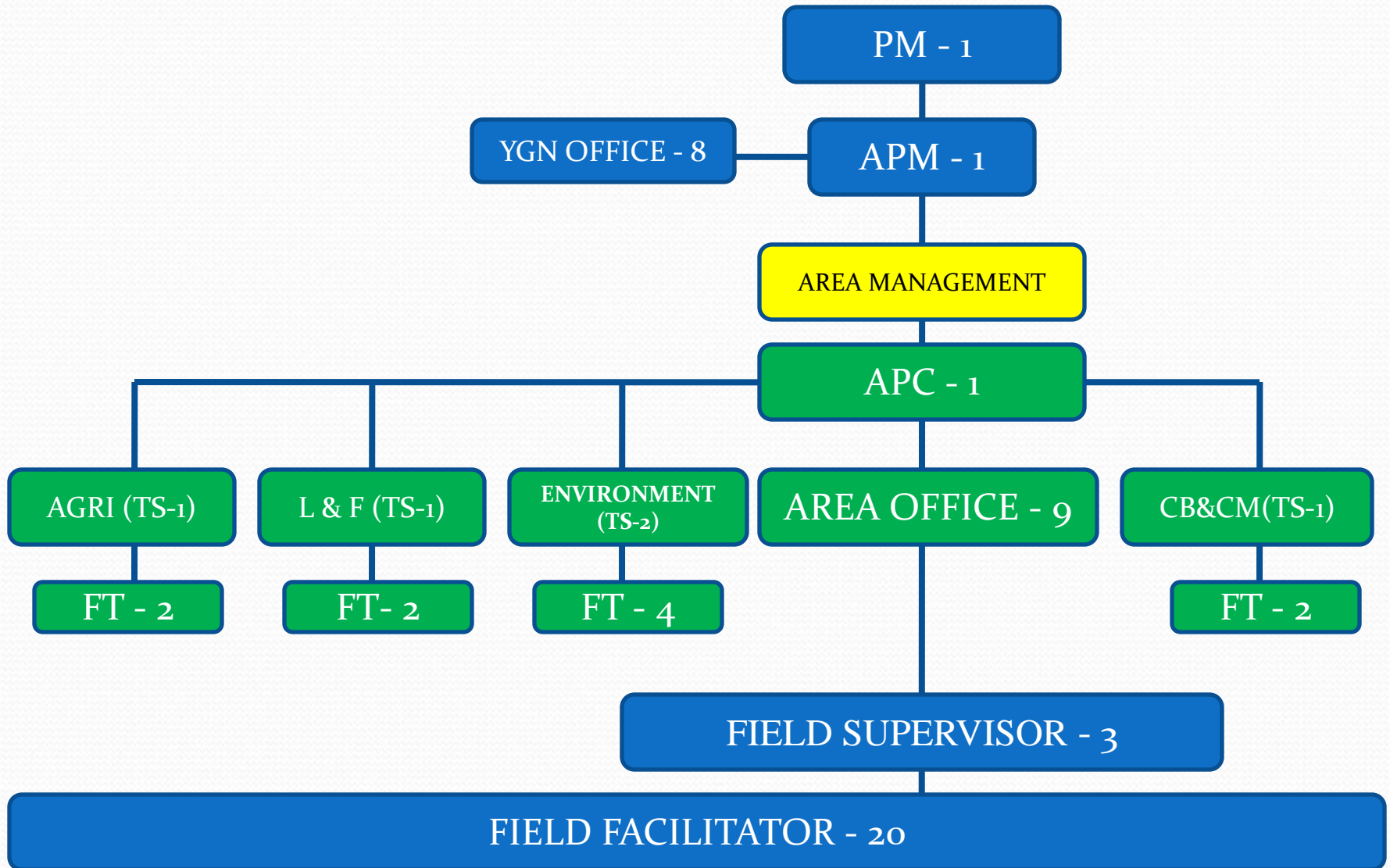
# Implementing Partner Agency



# Implementing Partner Agency

- Ecosystem Conservation and Community Development Initiative (**ECCDI**)
  - Mangrove rehabilitation and conservation
- Economically progressive Ecosystem Development (**Eco Dev**)
  - Capacity Building and Social Mobilization
- Biodiversity and Nature Conservation Association (**BANCA**)
  - Biodiversity Hotspot and Community Forestry
- Swanyee Development Foundation (**SDF**)
  - Agriculture and Homegarden
- Border area Development Association (**BDA**)
  - Livestock Fishery and Income Generation
- Rakhine Coastal Region Conservation Association (**RCA**)
  - Facilitation among project and community

# CLEARR's Organizational Structure



MERN



# Activities to be done

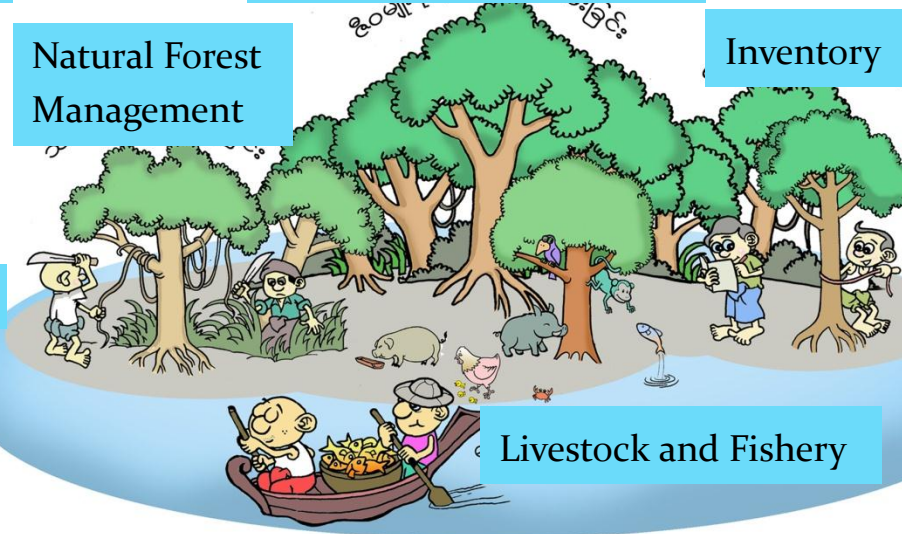
Capacity Building



Biodiversity Conservation

Natural Forest Management

Inventory



Education and Extension Center



Water Resources



Nursery

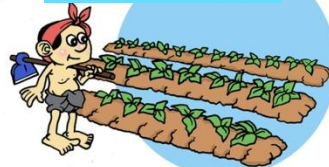


Livestock and Fishery

Community Forestry



Agriculture

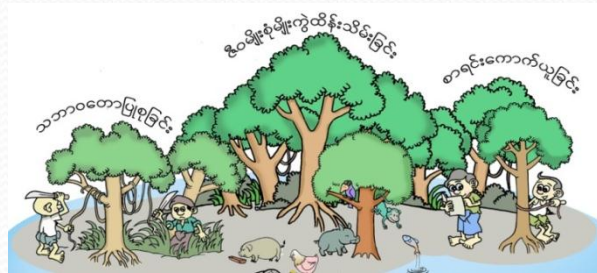


Income generation



Plantation Forestry





## Inputs for Environmental Conservation and Rehabilitation

Activity	Plan	Achievement	Activity to be continued
Multipurpose Nursery	41 villages	20 villages	21 villages
Regeneration Improvement Felling	4200 Ac	264 Ac	3936 Ac
Enrichment Planting	5600 Ac	1200 Ac	4400 Ac
Mangrove Nursery	60000 seedlings	20000 seedlings	40000 seedlings
Community Forestry	4500 Ac	217 Ac	4283 Ac
Biodiversity Hotspot	2 Sites	On going	2 Sites

# Enrichment Planting



# Challenges and lessons learned

- Process approach

CLEARR should not treat as a “project” (time bound, donor-dependent, externally conceived and directed) and treated as the start of a long term, open-ended process that is not donor dependent or externally driven. We need to think of it as the starting point to a long term process. This 3 year funding we have from LIFT is a kick-start, a catalyst. The 3 year plan we are making is a point of departure and to build a sustainable, locally owned process.

# Challenges and lessons learned

- Landscape approach

All CLEAR activities should be planned, implemented and monitored from a landscapes perspective to focus on the integrated management. All the time, we should be standing back to see the connections between all the functions, users and processes affecting the forest: social, economic, ecological, and political.



# Challenges and lessons learned

- Community ownership of land use plans

It is crucial that the community really feels ownership of the village zoning and land use plans. There will have to be discussions and negotiations of course as the community is never homogeneous (there are always some who will disagree, there are always some winners and losers).

# Challenges and lessons learned

- Forest Department buy-in and relationships

The different levels of the FD have to be actively engaged at all times. CLEAR is trying to start and demonstrate a process that cannot be successful or sustainable if the FD is not fully participating. Some form of incentivizing FD staff is obviously needed. Training, cross visit, equipment can help to some extent. There may be very little trust or mutual respect. This presents a real challenge to both joint forest planning and to community forestry. This issue has to be sensitively and patiently addressed – it may take 2 or 3 years to rebuild trust and really positive relationships, but it must be attempted.

# Challenges and lessons learned

- Adaptive management, flexible planning, experimenting and learning

Do not attempt to impose a blue-print model on every village. Social processes such as participatory forest management require much flexibility to allow local context to determine how different villages get involved. Allow different approaches to evolve in different villages. We hope to continue to increase our understanding of how to facilitate local processes that work. CLEAR follow local realities rather than try to force local realities to fit with CLEAR's preconceived plans.

# Challenges and lessons learned

- **Let village led livelihood plans emerge organically from local realities**

In line with the general advice of allowing flexible, community-led and context-led planning, the same applies to developing the livelihood activities of CLEAR. Do not try to force premade project livelihood plans onto a particular village if for some reason it becomes clear that there are better alternatives. As long as we are still looking at livelihoods, budget line items are flexible enough to allow different ideas and interventions to be tried. So in some cases, instead of improved paddy or a fishing grant, you might be trying improved marketing or introduction of new technologies for processing of non timber forest products. Encourage innovation – let livelihood plans evolve from local opportunities and avoid a “one-size-fits-all” mentality.



**Thank you**