

**Regional Workshop on “Enhancing Conservation and Sustainable Management of Teak Forests and Legal and Sustainable Wood Supply Chains in the Greater Mekong Sub-region”**  
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# **Sustainable Forest Management in Myanmar**

Thaung Naing Oo Ph.D.  
Director, Forest Research Institute  
Forest Department, Myanmar  
[tnoo71@gmail.com](mailto:tnoo71@gmail.com)

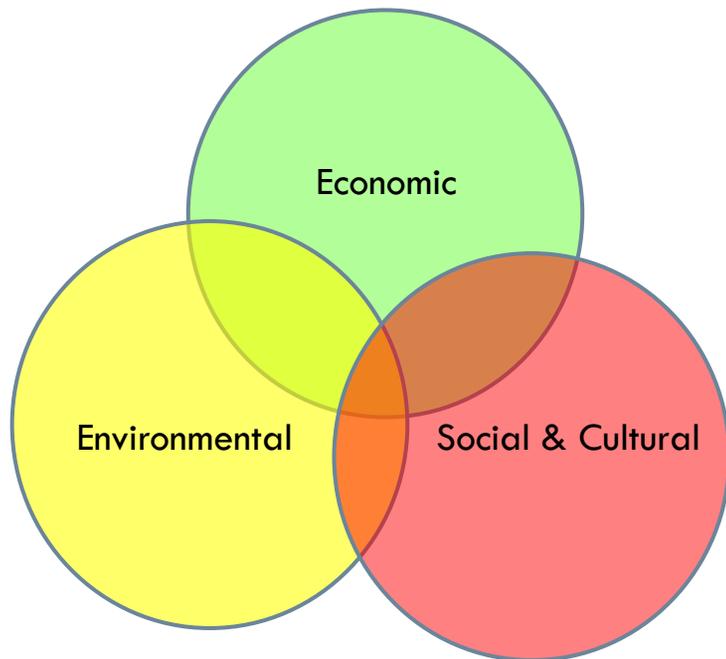
September 24, 2019

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# SUSTAINABLE FOREST MANAGEMENT

***“ ----- Dynamic and evolving concept, which aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations. ” (UN General Assembly)***



❖ SFM concept encompasses -

- both natural and planted forests in all geographic regions and climate zones,
- all forest functions, managed for conservation, production or multiple purposes,
- to provide a range of forest ecosystem goods and services at the local, regional and global levels.

# Elements of SFM



- 1) Extent of forest resources
- 2) Forest biological diversity
- 3) Forest health and vitality
- 4) Productive functions of forest resources
- 5) Protective functions of forest resources
- 6) Socio-economic functions of forest resources
- 7) Legal, policy and institutional framework



## Seven criteria identified as essential elements of sustainable forest management (ITTO)

- Criterion 1:
  - ▣ Enabling Conditions for Sustainable Forest Management
- Criterion 2:
  - ▣ Forest Resource Security
- Criterion 3:
  - ▣ Forest Ecosystem Health and Condition
- Criterion 4:
  - ▣ Flow of Forest Produce
- Criterion 5:
  - ▣ Biological Diversity
- Criterion 6:
  - ▣ Soil and Water
- Criterion 7:
  - ▣ Economic, Social and Cultural Aspects

### ▪ **Criteria and Indicators (C&I) for SFM**

- There are 63 districts (Forest Management Unit-FMU) across the country.
- **7 Criteria and 73 Indicators** were identified for Forest Management Unit **(FMU) level.**
- 7 Criteria and **78 Indicators** were identified for **National level.**

# Policies, Legislations, Plans and Strategies for SFM - Myanmar



# Country Profile

## Location

- in main-land Southeast Asia
- Latitudes = 9° 58' to 28° 29' North
- Longitudes = 92° 10' to 101° 10' East

## Area

- Total land area = 676,577 km<sup>2</sup>

## Population

- 51.4 million (2014)
- 70% are in rural area
- 135 different nationalities

## Three different Seasons

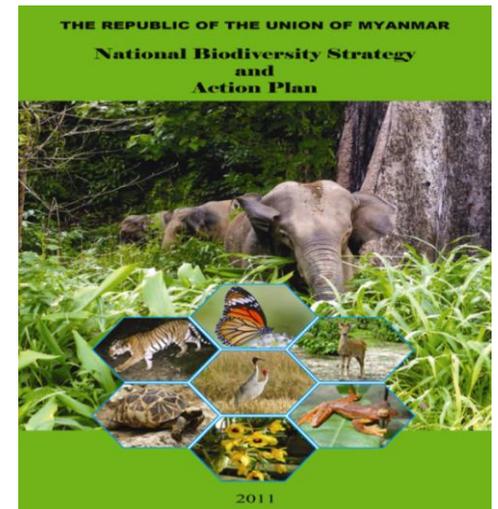
- Hot Season (32° C to 38° C)
- Cold Season (10° C to 25° C)
- Rainy Season (25° C to 33° C)

Location Map of Myanmar



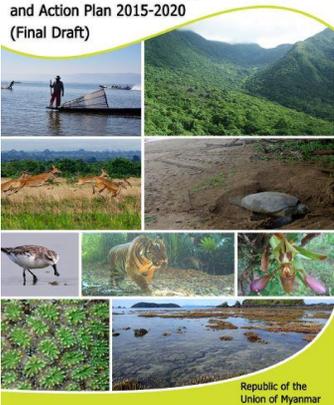
# Policy, Laws, Rules and Regulations of Forestry

- **Environmental Policy (1994)**
- **Myanmar Forest Policy (1995)**
- **National Landuse Policy (1997)**
- **National Wetland Policy (2018)**
- **Myanmar National Environmental Policy (2019)**
- **Myanmar Climate Change Policy (2019)**



- **Environmental Conservation Law (2012) and Rules (2014)**
- **Forest Law (2018) and Forest Rules (to be enacted in 2019)**
- **Biodiversity and Protected Areas Law 2018 and Rules (2019)**

National Biodiversity Strategy  
and Action Plan 2015-2020  
(Final Draft)



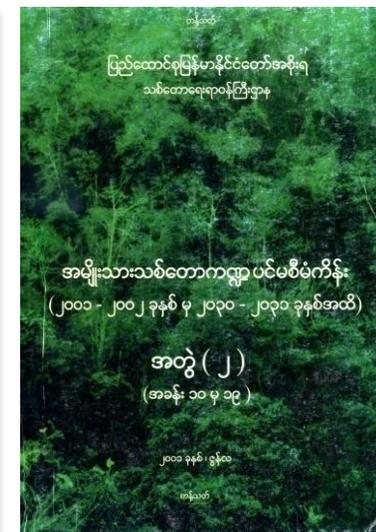
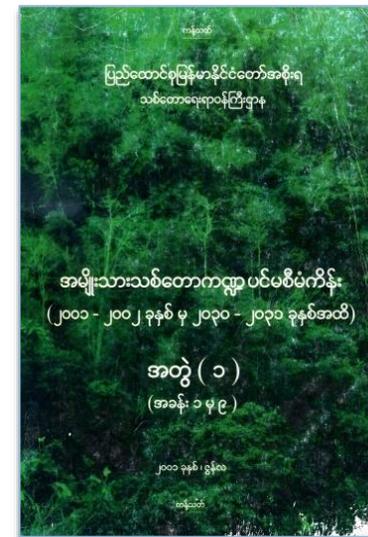
- **Community Forestry Instructions (1995, 2016, 2019)**
- **Myanmar Climate Change Strategy & Action Plan (2016-2030)**
- **National Biodiversity Strategy and Action Plan (adopted in 2012, revised in 2015)**
- **National REDD+ Strategies (to be adopted soon)**
- **Standard Operational Procedures (SOP) for forestry operations**

## Myanmar Forest Policy (195) - Policy Imperatives

- **Protection** of soil, water, wildlife, biodiversity and environment;
- **Sustainability** of forest resources to ensure perpetual supply of both tangible and intangible benefits accrued from the forests for the present and future generations;
- **Basic needs** of the people for fuel, shelter, food and recreation;
- **Efficiency** to harness, in the socio-environmentally friendly manner, the full economic potential of the forest resources;
- **Participation of the people** in the conservation and utilization of the forests; and
- **Public awareness** about the vital role of the forests in the well being and socio-economic development of the nation.

# Planning Framework

- Forest management in Myanmar through short-term, medium-term and long-term plans.
- Formulation of forest management plans in line with the modern forestry concepts
- Focus on sustainable management of forest resources.
  - 30-year National Forest Master Plan (2001-2002 to 2030-2031)
  - Forestry Sector Comprehensive Development Plan (2011-2012 to 2030-2031)
  - Myanmar Reforestation and Rehabilitation Plan (2017-18 to 2026-27)
  - Re-introducing Natural Habitats (2019-20 to 2028-29)
  - 10-Year District Forest Management Plan for 68 Districts

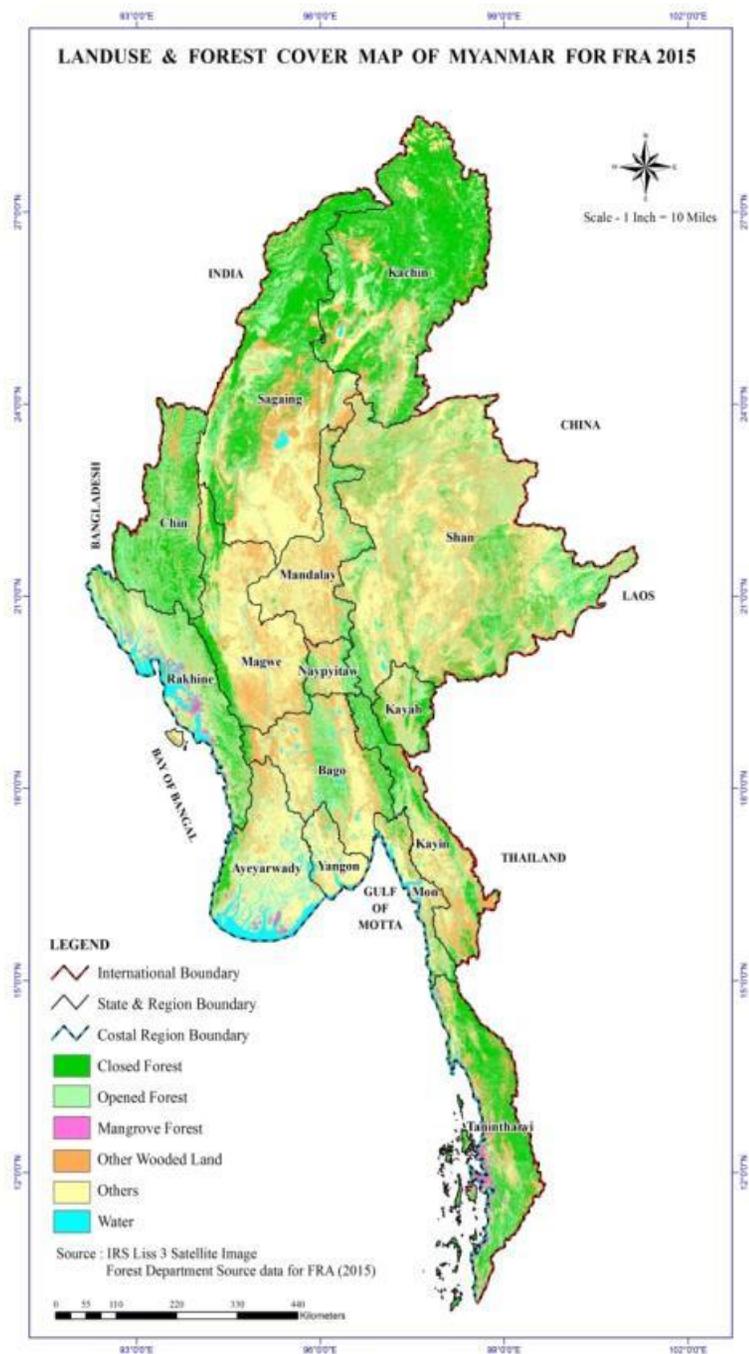


# Forest Resources of Myanmar



## Forest Cover Status –FRA 2015

Forest category	Area (,000 ha)	% of total country area
Closed forest	14,585	21.56
Open forest	14,456	21.36
<b>Total forest</b>	<b>29,041</b>	<b>42.92</b>
Other Wooded land	15,080	22.29
Others Land	21,634	31.98
Water body	1,903	2.81
<b>Total</b>	<b>67,658</b>	<b>100</b>



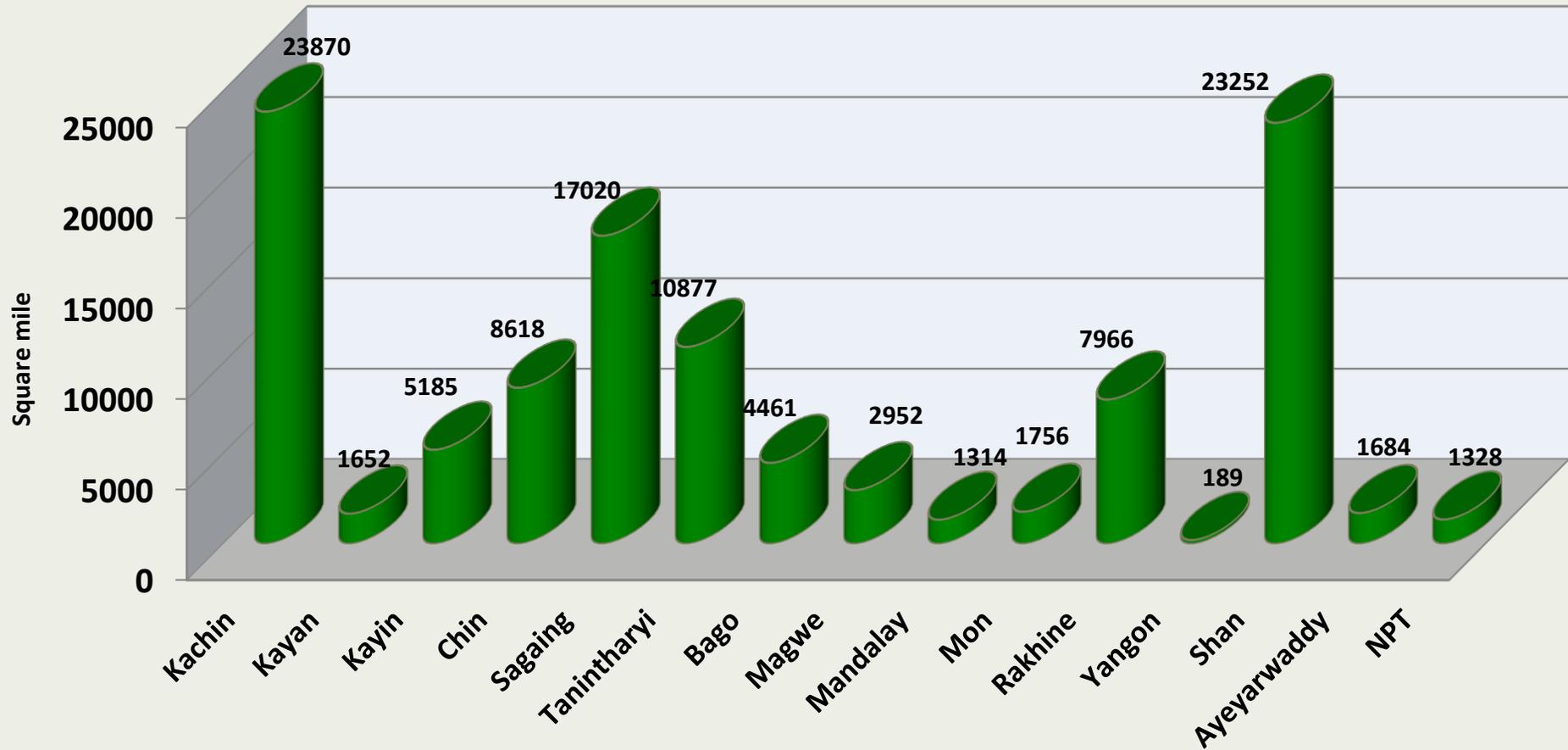
## FOREST TYPES

Forest Type	Area ( ,000 ha)	% of Total forest Area
Mangrove forest	325.26	1.12
Tropical evergreen forest	5,024.09	17.30
Mixed deciduous forest	11,093.66	38.20
Dry forest	2,904.10	10.00
Deciduous Dipterocarp forest	1,237.15	4.26
Hill and temperate evergreen forest	7,817.84	26.92
Scrub land	638.90	2.20
Total	29041.00	100

Source: Forest Department 2016



## Forest Cover in States and Regions



	Kachin	Kayah	Kayin	Chin	Sagaing	TNR	Bago	Magwe	Mdy	Mon	Rakhine	Ygn	Shan	AYA	NPT
Sq-mile	23870	1652	5185	8618	17020	10877	4461	2952	1314	1756	7966	189	23252	1684	1328
%	69.43	36.47	44.20	61.96	47.04	64.99	29.30	17.06	18.02	36.99	56.10	4.76	38.65	12.45	41.64

# Establishment of Permanent Forest Estate

Legal classification	Area Acre	% of land area
Reserved Forest (RF)	29,707,424	17.77%
Protected Public Forest (PPF)	12,653,821	7.57%
	42,361,245	25.34%
Protected Area System (PAS)	9,783,609	5.85%



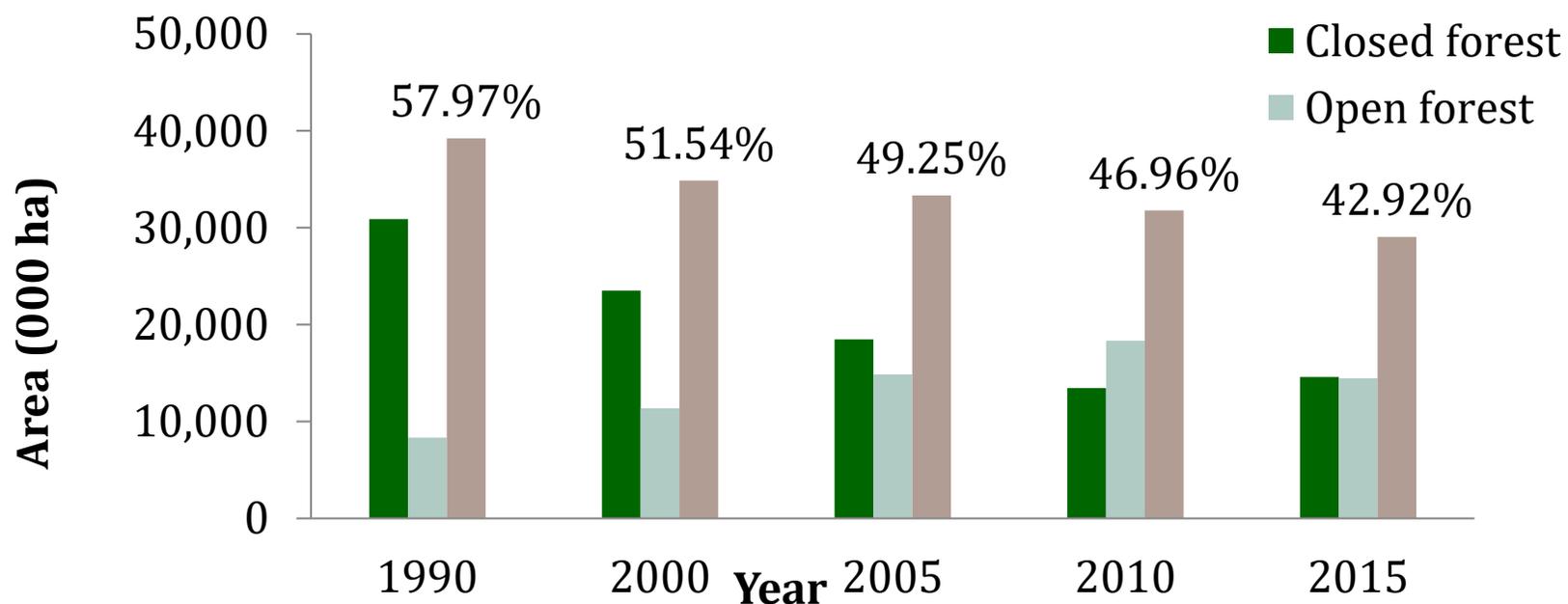
**Myanmar Forest Policy (1995) stipulates to designate up to**

- **30% of the total land area as Reserved Forest**
- **10% of the total land area as PAS**



# Forest Cover Change

- Inevitable deforestation at a very high rate
- Third highest deforestation rate in the world between 2010 and 2015 according to FRA 2015.

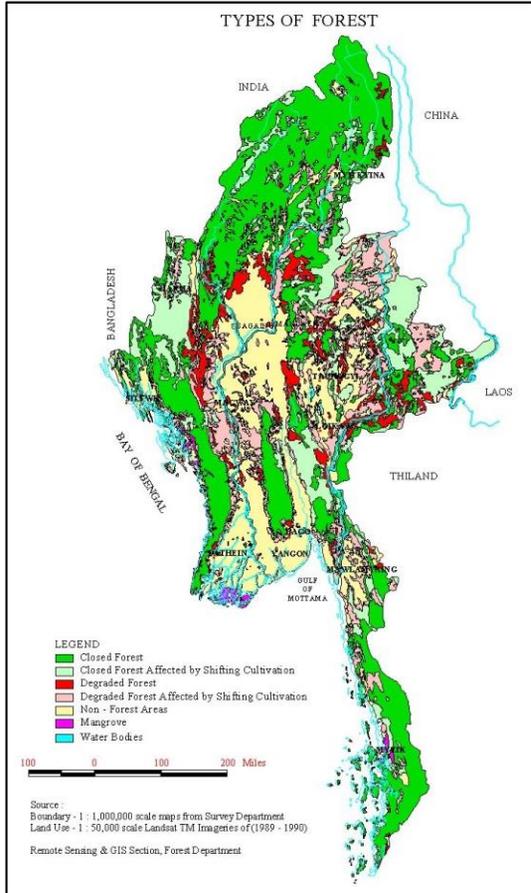


Period	Annual deforested Area (ha)	Annual deforested Rate (%)
1990-2000	434,997.56	1.2
2000-2010	309,588.27	0.9
2010-2015	546,397.1	1.8

# Forest Cover Change

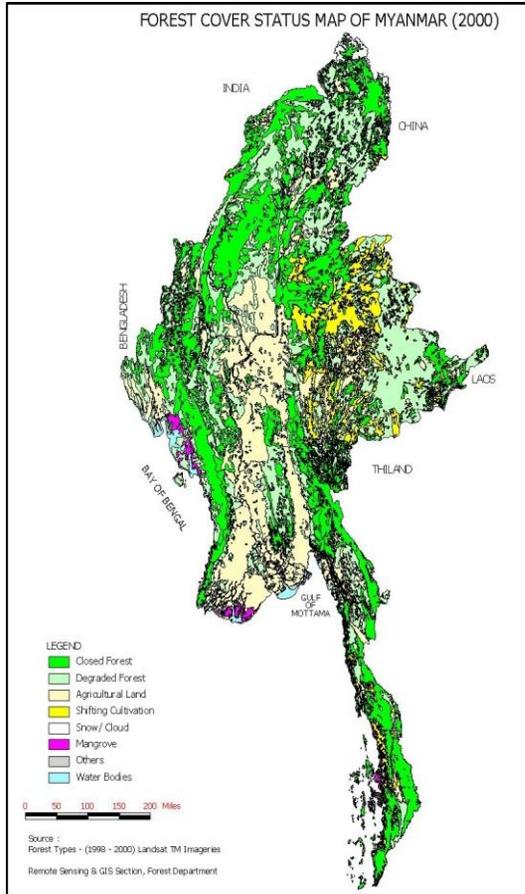
1990

TYPES OF FOREST

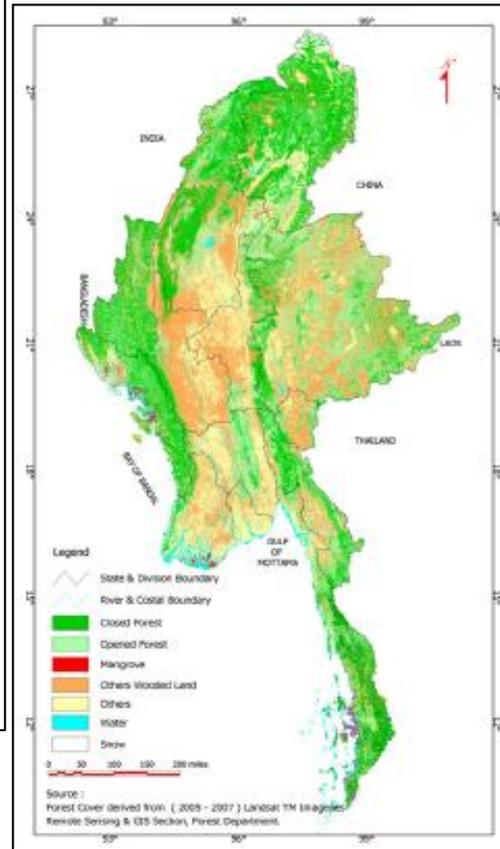


2000

FOREST COVER STATUS MAP OF MYANMAR (2000)

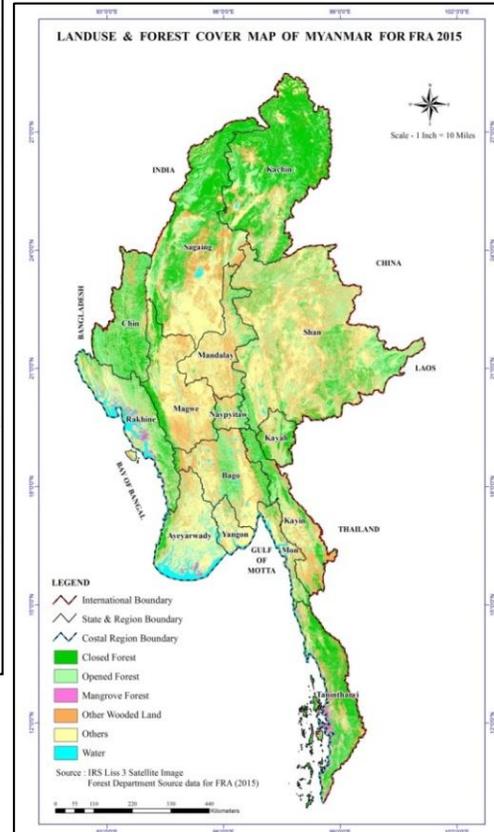


2010



2015

LANDUSE & FOREST COVER MAP OF MYANMAR FOR FRA 2015



# Forest Management System



### ❖ National Forest Management Plan (2002-2031)

#### CONVENTIONAL FOREST MANAGEMENT IN MYANMAR



- ❑ Forest Management Unit (FMU) is District Level.
- ❑ 68 Districts (68 FMU) across the country.
- ❑ It includes 6 categories:
  - ❖ **Production Working Circle (PWC),**
  - ❖ **Planted Forests Working Circle (PFWC),**
  - ❖ **Local Supply / Community Forestry Working Circle (LS/CFWC)**
  - ❖ **Watershed Forests Working Circle (FWC) and**
  - ❖ **Non-wood Forest Products Working Circle (NFPWC)**
  - ❖ **Protected areas working circle**
  - ❖ **Others**

# Myanmar Selection System (MSS)

MSS has been applied since 1856 to manage Myanmar natural forests, especially natural teak-bearing forests, on a sustainable basis.

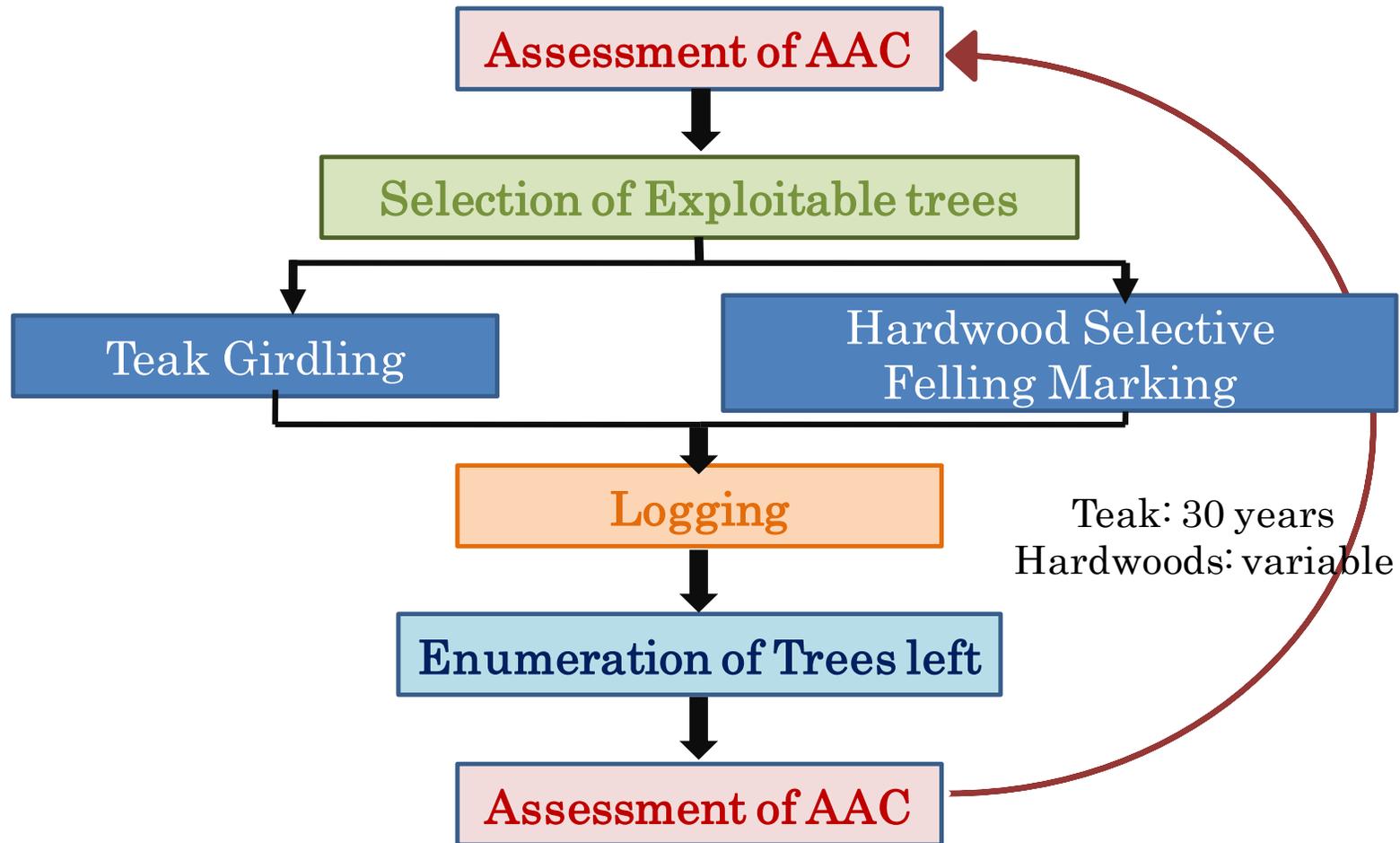
- **It is an exploitation-cum-cultural System.**
- **Minimum impacts to the environment.**
- **MSS is practiced within the bound of :**
  - (1) Space/Area limit (Felling series)
  - (2) Size/Girth limit and (minimum girth limit)
  - (3) Time limit ( a felling cycle of 30 years)
- **Enumeration of future yield trees down to fixed sizes**
- **Leaving high quality teak tree as seed tree (mother tree)**
- **Fixing of Annual Allowable Cut for teak and hardwood**



## Major Forest Operations in MSS

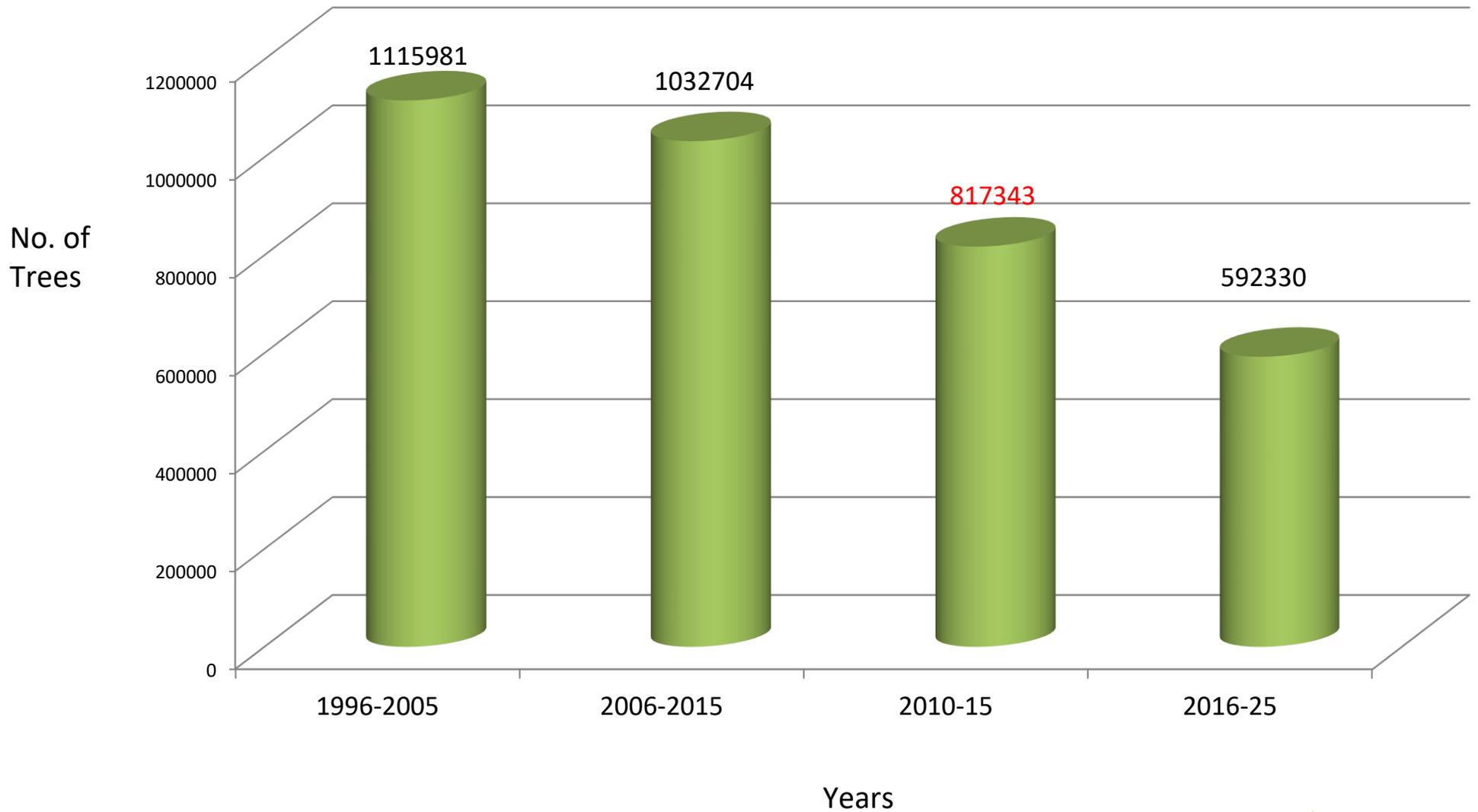
1. Girdling of Teak
2. Selection Marking for green teak
3. Selection marking for hardwoods
4. Artificial regeneration
5. Natural Regeneration
6. Improvement felling
7. Weeding
8. Thinning
9. Climber cutting and Nyaungbat felling
10. Forest road repair
11. Demarcation of Compartment Boundary
12. Fire protection
13. Formation of new reserved forests
14. Enrichment operations for natural forests



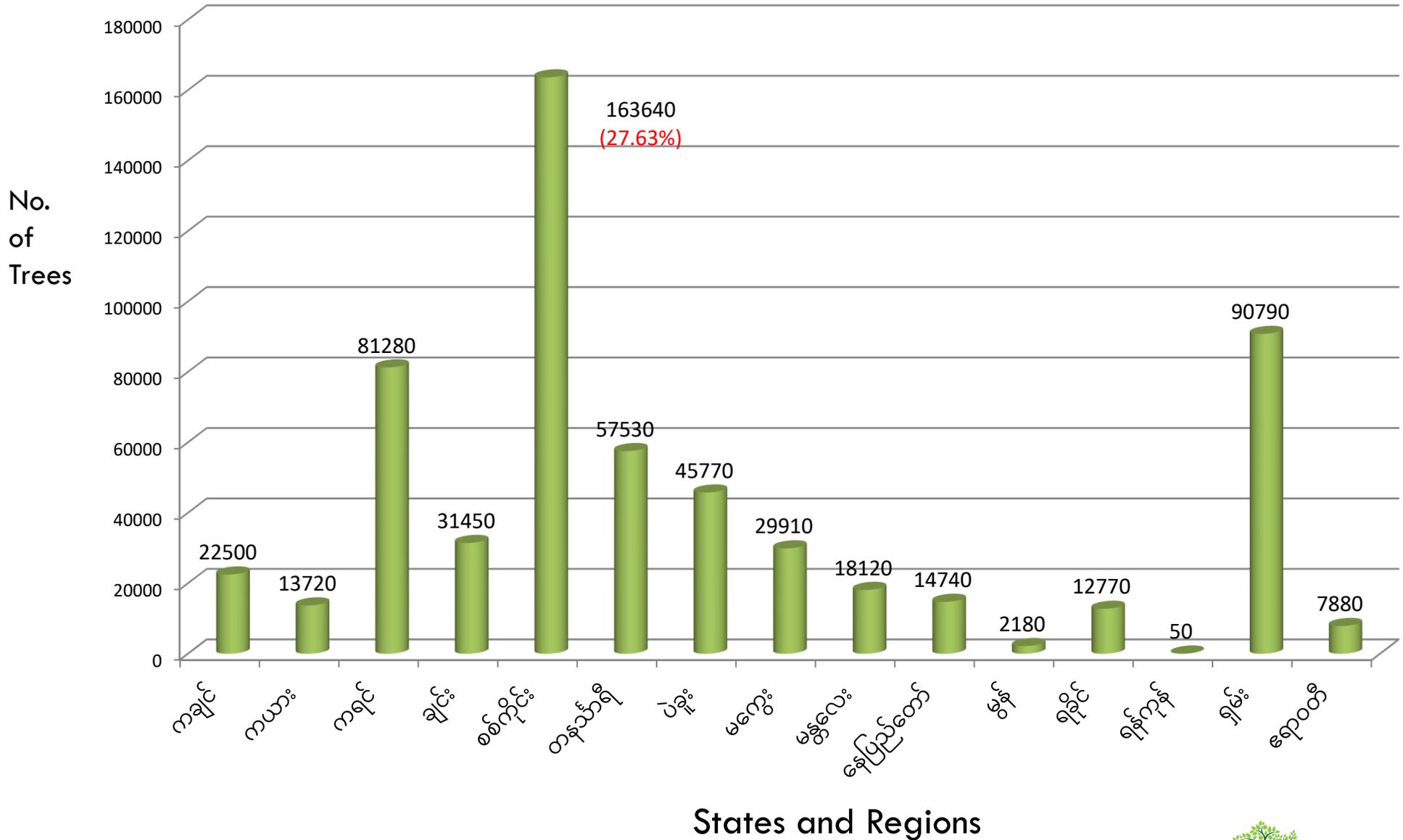


**MOSTLY FOR GOODS and services?**

# Annual Allowable Cut (AAC)



# AAC(2016-2025)



# Biodiversity Conservation in Myanmar

# Natural Resources in Myanmar: Biodiversity Richness

- Varied forest types are home of numerous flora and fauna

Groups	No. of Species
Plants	11,824
Mammals	252
Birds	1,096
Reptiles	295
Amphibians	119
Fish	1,098
Coral	287



# Biodiversity Status

<b>Taxonomic Group</b>	<b>Number</b>
<b>Species of vascular plants of gymnosperms and angiosperms</b>	<b>11,824</b>
<b>Mammal</b>	<b>258</b>
<b>Bird species</b>	<b>1096</b>
<b>Reptiles</b>	<b>291</b>
<b>Amphibian</b>	<b>119</b>
<b>Fresh water fish</b>	<b>590</b>
<b>Marine water fish</b>	<b>578</b>
<b>Medicinal plant</b>	<b>841</b>
<b>Bamboo</b>	<b>96</b>
<b>Rattan</b>	<b>36</b>
<b>Sea Grass</b>	<b>12</b>
<b>Sea Weeds</b>	<b>38</b>
<b>Crab</b>	<b>42</b>
<b>Coral Reef</b>	<b>287</b>

❖ Myanmar has recorded several endemic species.

Taxonomic group	No. endemic species
Mammals	1
Birds	6
Reptiles	21
Amphibians	3
Plants	8



Black Orchid



Star Tortoise



White-browed Nuthatch



Chin hill lizard



Myanmar spitting cobra



Golden Deer/ thamin



# Biodiversity conservation in Myanmar : Protected Area Network

## ASEAN Heritage Parks

- Alangdaw Kathapa N.P (2003)
- Inlay Lake Wildlife Sanctuary (2003)
- Indawgyi Wildlife Sanctuary (2003)
- Meinmahla Kyun Wildlife Sanctuary (2003)
- Lampi Marine National Park (2003)
- Kakhaborazi National Park (2003)
- Natmataung National Park (2012)

## Biosphere Reserve

- Inlay Lake Wildlife Sanctuary was designated as the first Biosphere Reserve in Myanmar under UNESCO Man and Biosphere Reserve Program. (2015)
- Indawgyi Wildlife Sanctuary was designated as the second Biosphere Reserve in Myanmar. (2017)

## Ramsar Sites

- Moeyungyi Wildlife Sanctuary (designated in 2005)
- Indawgyi Wildlife Sanctuary (designated in 2016)



# Reforestation of Degraded Forests: Plantation Forestry



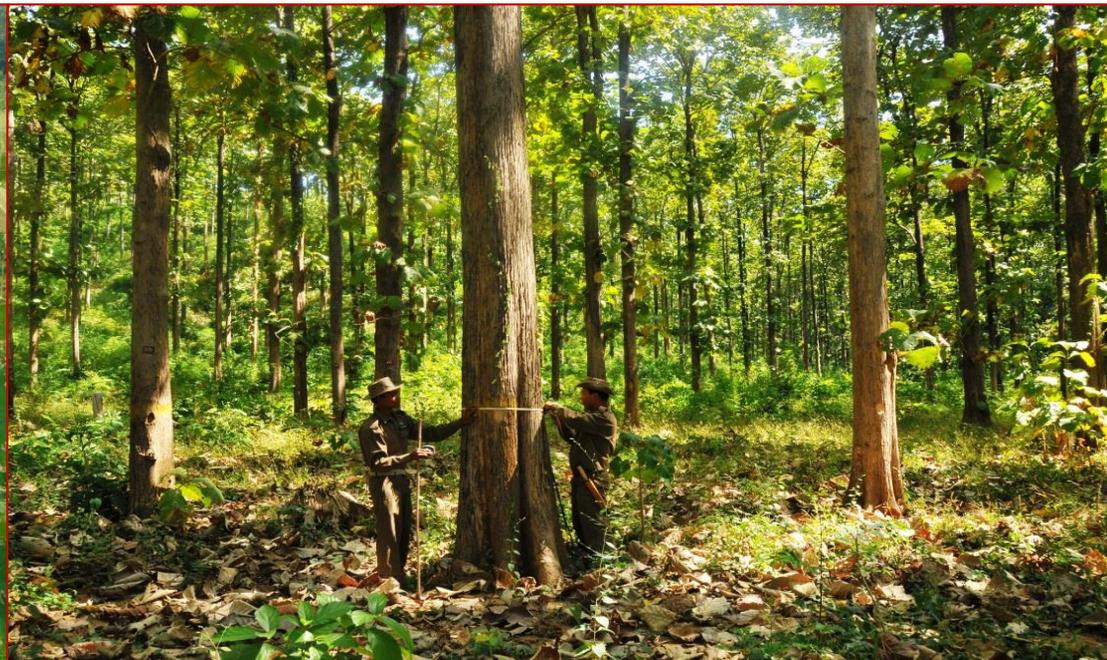
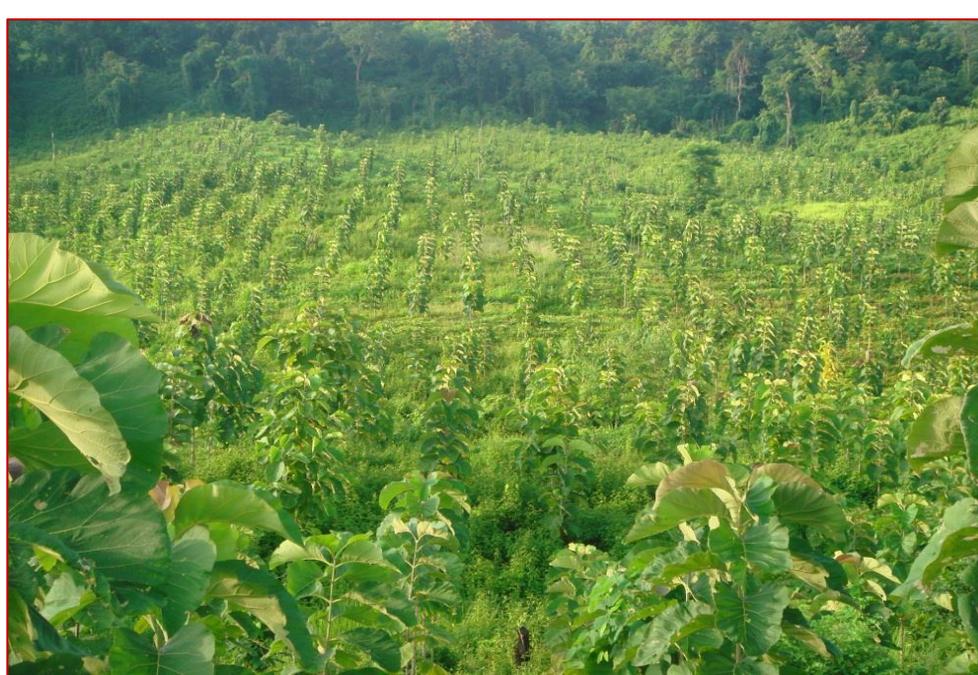
# Reforestation and Afforestation

- 1856** Small scale plantation initiated using Taungya method
- 1941** The extent of plantations reach **47,167 ha**
- 1980** Large scale plantation forestry began
- 1984** Annual plantation target reached **30,000 ha**
- 1998** Special teak plantation program was launched to increase timber production
- At present** Annual planting rate is over **6,000 ha**  
Annually support about **17 million** seedlings to the public.



# Establishment of Forest Plantations (FD) (1981-2018)

No	Plantation Type	Area Acre	% of Total Area
1	Commercial	1,249,010	55.61
2	Watershed	343,724	15.30
3	Industrial	179,121	7.97
4	Mangrove	9,455	0.55
5	Village Supply	461,944	20.57
	<b>Total</b>	<b>2,243,254</b>	<b>100.00</b>



# Establishment of Private Plantations (2006-2019)

- The majority of plantation has been established under government in Myanmar; however government is now actively encouraging to private sector investment for plantation establishment since 2006.
- Particularly, the private sector has increasingly become interest for the establishment of teak plantation and is likely to be significant for foreign earnings.

No	Plantation Type	Area Acre
1	Teak	148,551
2	Hardwood	112,086
3	Industrial	410,055
	<b>Total</b>	<b>670,692</b>



# **Myanmar Reforestation and Rehabilitation Programme (2017-18 to 2026-27)**



### (a) Goals

1. To bring back the virgin ecosystem with rich biodiversity by restoring the natural forest
2. To mitigate the impacts of climate changes
3. To support the socio-economic development of the nation
4. To support the sustainable forest management

United Nations declared “UN Decade on Ecosystem Restoration 2021-2030”.

### (b) Objectives

1. To restore and rehabilitate the forests with the various appropriate methods
2. To strengthen the investment of large- and small scale private in plantation establishment.
3. To support the community forestry and agro-forestry practices
4. To formulate Myanmar plantation policy through consultation with relevant stakeholders with forestry sector.
5. To encourage the participation of all relevant stakeholders in the stages of programme, implementing and monitoring of reforestation and rehabilitation programme

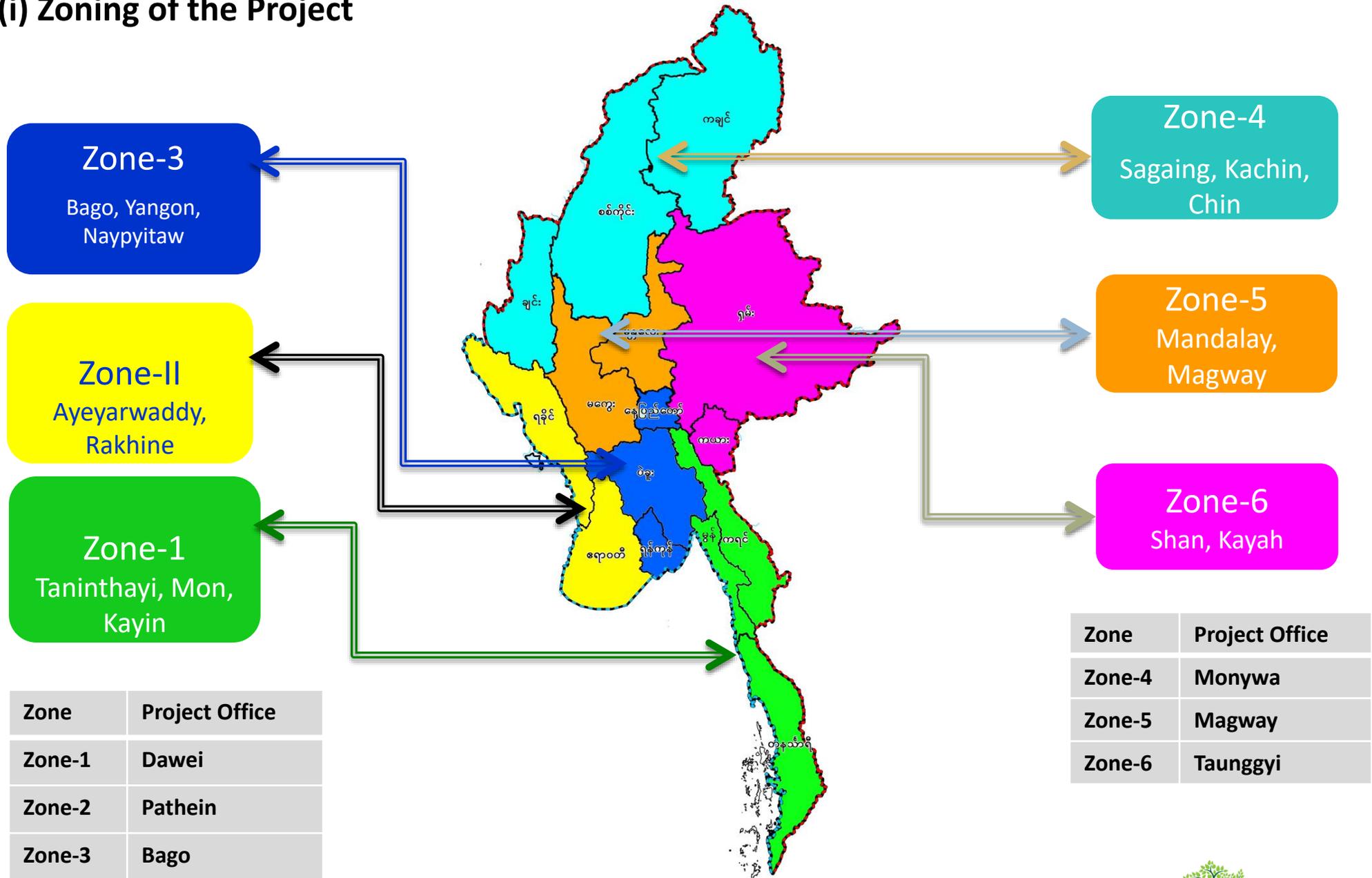


### (c) Expected outputs

1. Formulation of Forest Plantation Policy
2. Establishment of (352,438)Acre of forest plantations owned by the State
3. Establishment of (285,104) Acre of private plantations
4. (818,538) Acres of Assisted Natural Regeneration in the Production Forests
5. Conservation of (500,000)Acre of remaining natural forests in Central Dry Zone
6. Establishment of (770,332)Acre of Community Forests
7. Reservation of (16,160)square mile (6.19 5% of country area) to fulfill the national target of 30% of PFE

# Myanmar Reforestation and Rehabilitation Programme (Cont'd)

## (i) Zoning of the Project

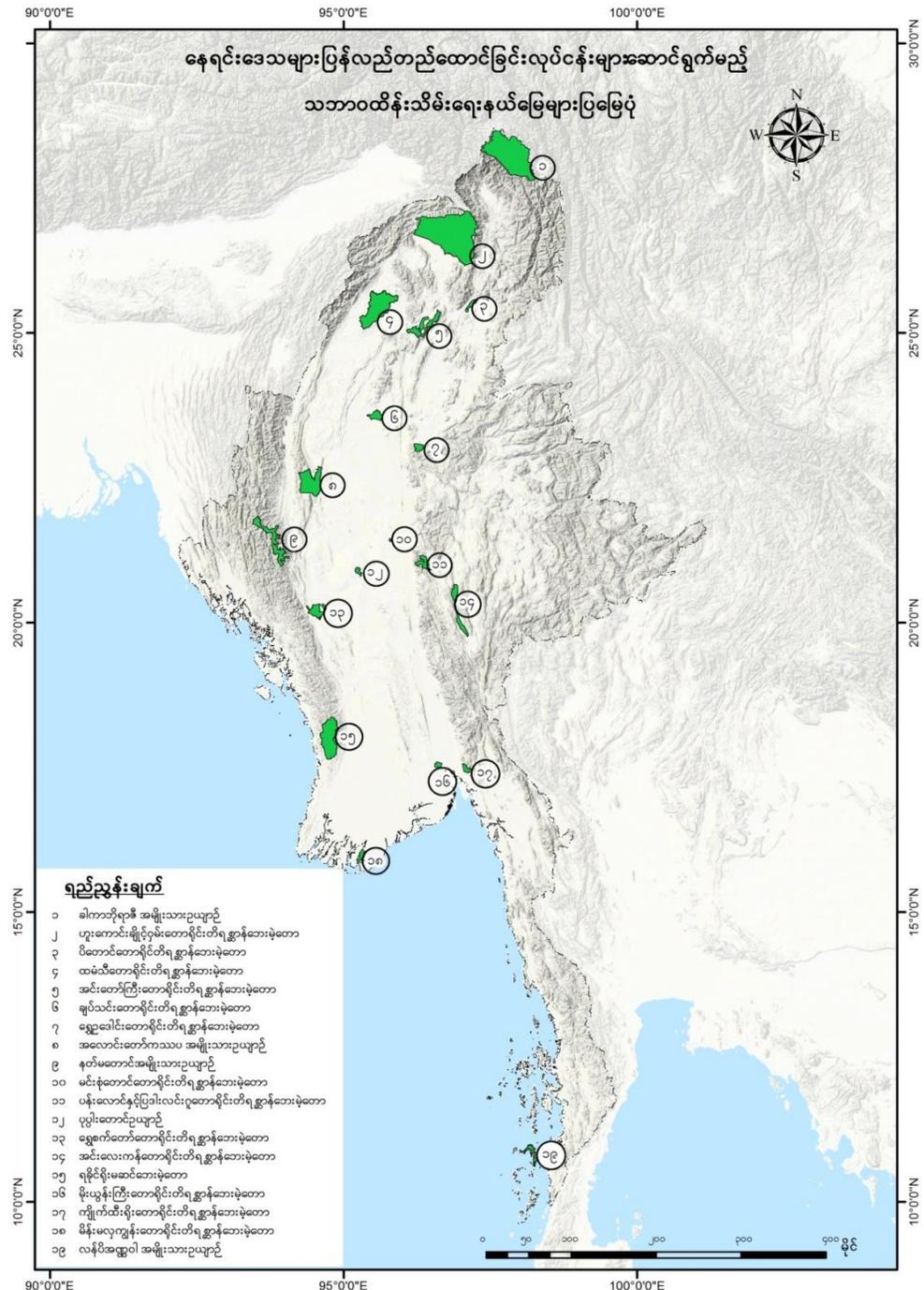


# **Re-establishing Natural Habitats Programme (2019-2020 to 2028-2029)**

# Re-establishing Natural Habitats Programme (2019-2020 to 2028-2029)

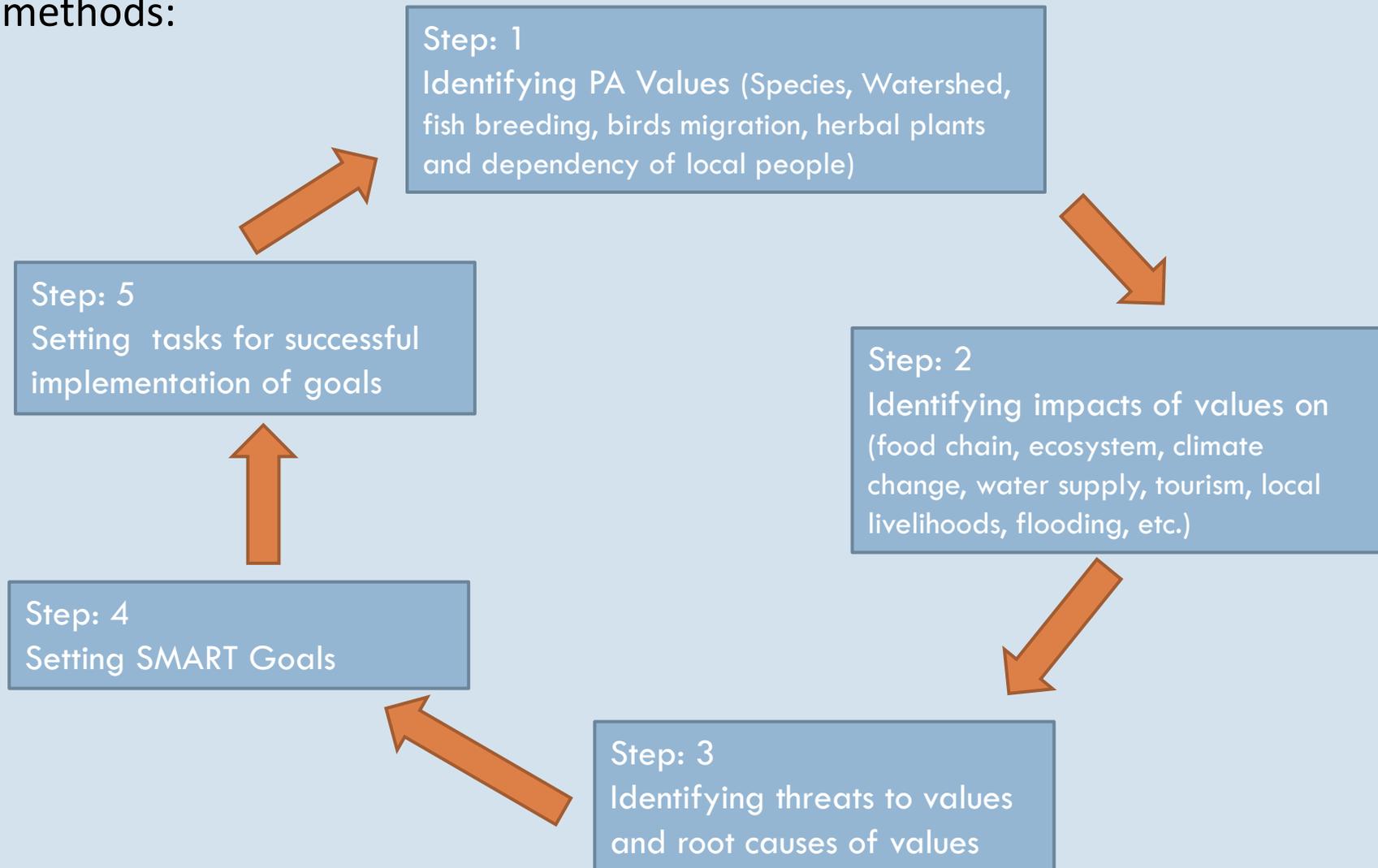
- In recent years, ecosystem restoration has been given priority to ensure the sustained flow of the ecosystem services, which are central to sustainable development and climate change mitigation as well.
- Myanmar has National Target to cover 10 % of the country's area by the PAs. For the time being, there are 44 PAs, representing 5.85 % of the country's area.
- However, ecosystems and biodiversity are degrading in PAs.
- Being very important sources for preservation of ecosystems and their associated services, Myanmar has prepared Re-establishing Natural Habitats Programme (2019-2020 to 2028-2029 )
- Re-establishing Natural Habitats Programme (2019-2020 to 2028-2029) was developed based on the individual "Habitat Restoration Plan" of 19 PAs.

# Re-establishing Natural Habitats Programme (2019-2020 to 2028-2029)



# Re-establishing Natural Habitats Programme (2019-2020 to 2028-2029)

- Individual “Habitat Restoration Plan” of 19 PAs were prepared by the following methods:



# Re-establishing Natural Habitats Programme (2019-2020 to 2028-2029)

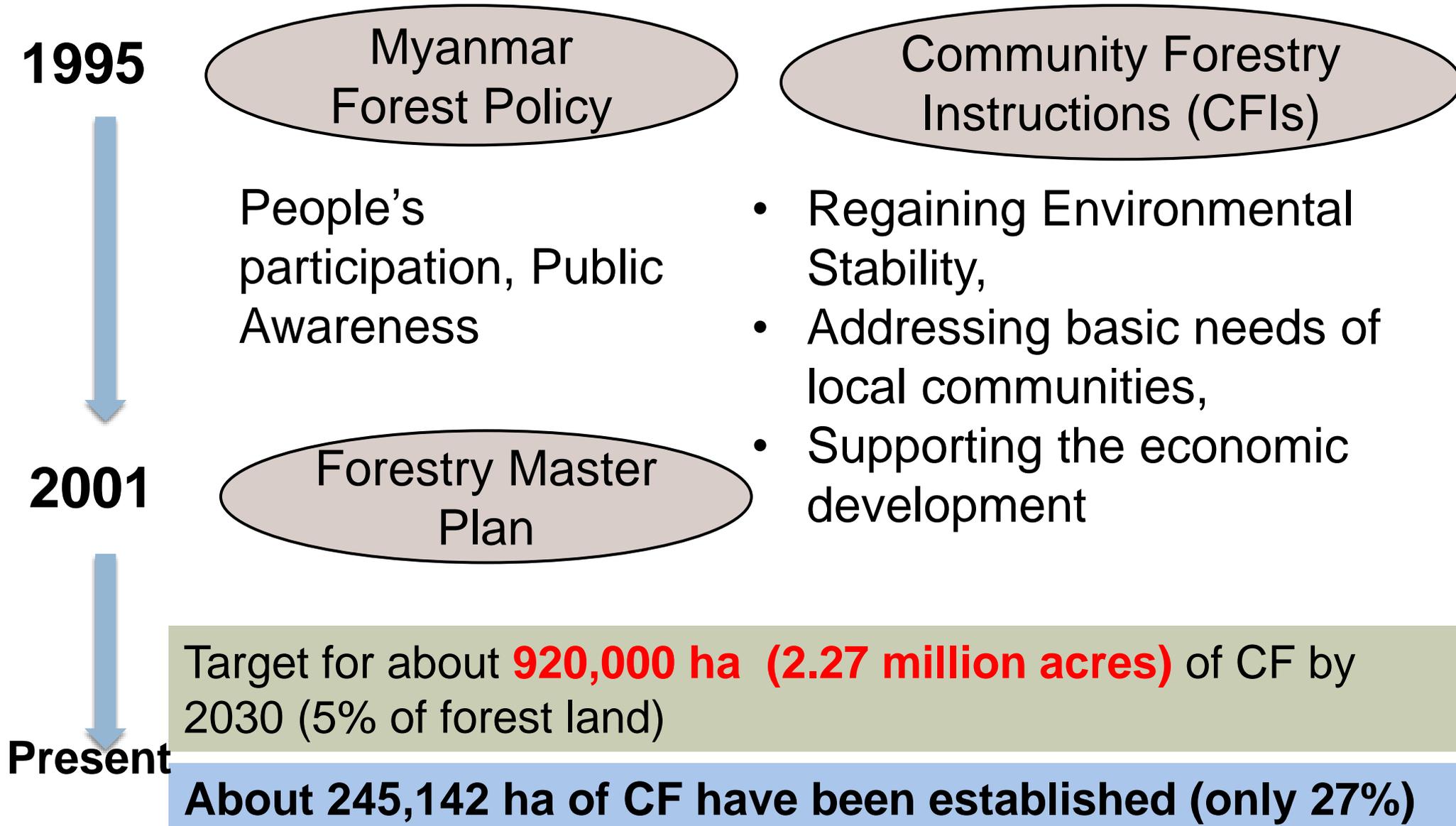
- Re-establishing Natural Habitats Programme (2019-2020 to 2028-2029) composed of two major components: restoration & protection.

## Major Activities

Restoration Activities	Protection Activities
Restoring wildlife corridors	Patrolling
Repairing ponds and salt lakes	Boundary repairing
Wildlife restoration	Public Education
Restoring habitats	Species monitoring
Coral restoration	Protecting water resources
Removing invasive species	Livelihood supports activities
	Capacity building for staff & local People

# Community Forest & Agroforestry for Poverty Alleviation

# Development of Community Forestry



(As of march, 2019)

4707 Forest User Groups with members of 120,005.

- **Community Forestry Instructions (CFI) was issued in 2019 (re-issued 2016).**
  - ▣ Afforestation of areas insufficient in fuelwood and other forest products for community use
  - ▣ for the planting of trees and extraction and utilization of forest products to obtain food supplies, consumer products and income by local community participation through **Community-based Forest Enterprise-CFE**

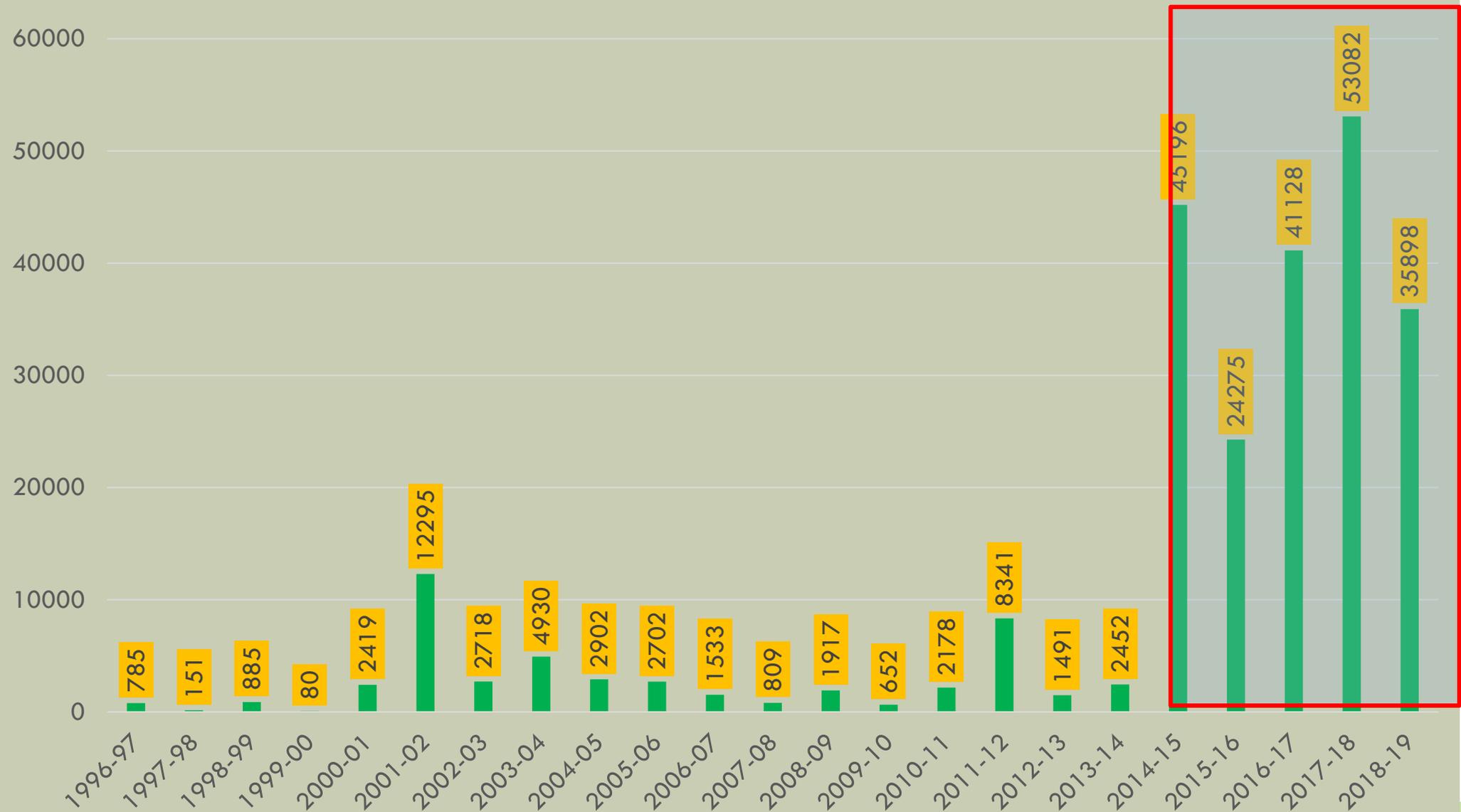
- To sustain forests, to satisfy the community's needs from trees and forests; and to reduce rural poverty through increased provisioning and supporting **environmental services** in a stable environment; and To generate employment and income **upto enterprise**
- The community can fully empower to control the forests and the CF **commercialized, poverty reduction, forest sustainability** and **social justice** are ensured.
- **Developing CF enterprise:** Empowering FUG to develop CF enterprise.
- **Gender balance**
- **Cooperation**

# Silent points of Community Forestry

- ❑ Any land at the disposal of the state can be alienated as community forests
- ❑ Land tenure is initially granted for 30 years
- ❑ The tenure right is inheritable (completely devolved and partial alienation)
- ❑ Forest products harvested from CF for local use are tax-free
- ❑ Seeds and seedlings needed for the first rotation and technical assistant are provided by FD free of charge
- ❑ No restriction is imposed on the selling and pricing of the surplus forest products

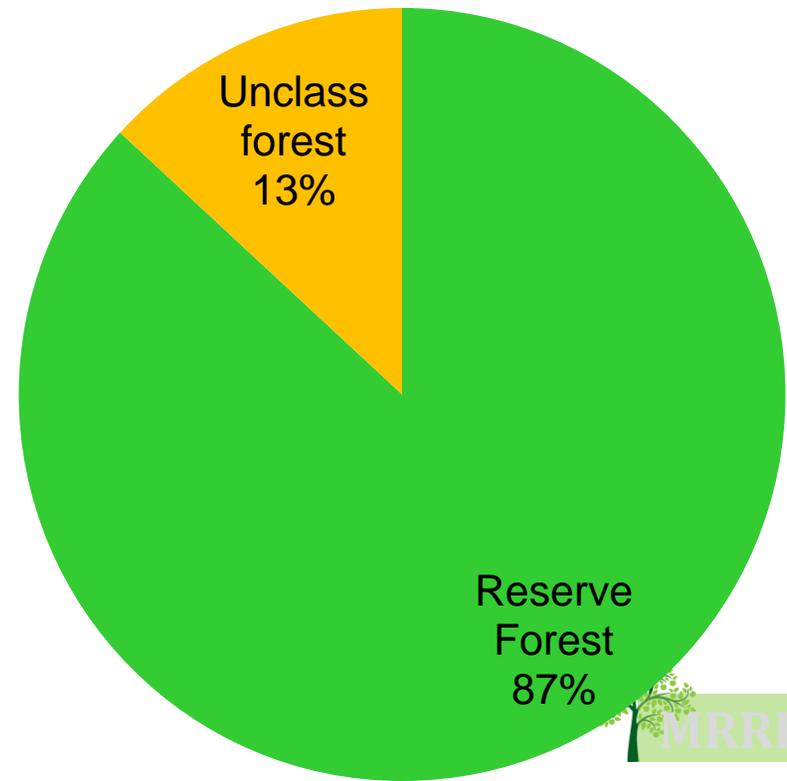
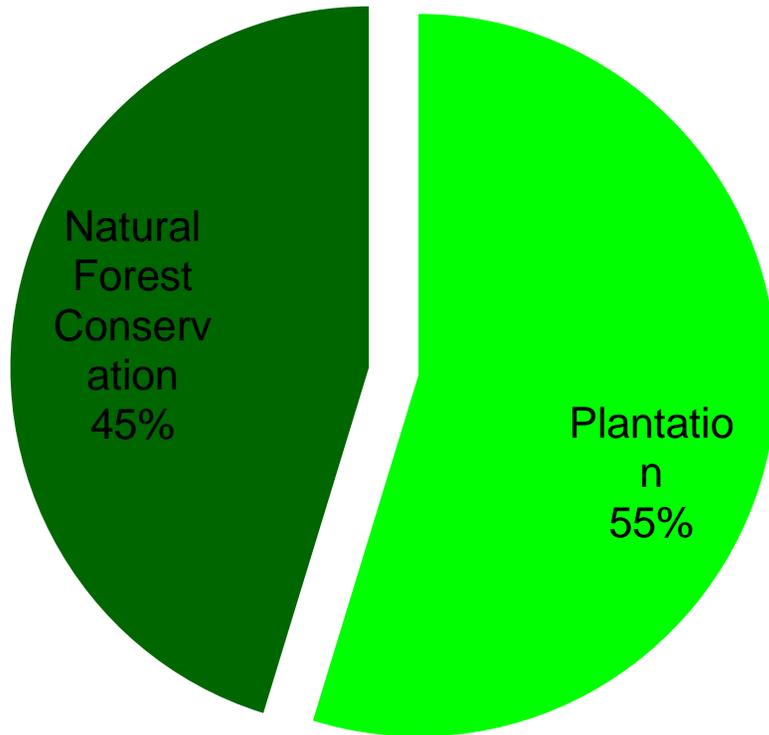
# CF Establishment Area (hectare)

## Community Forest Are by yearly (hectare)



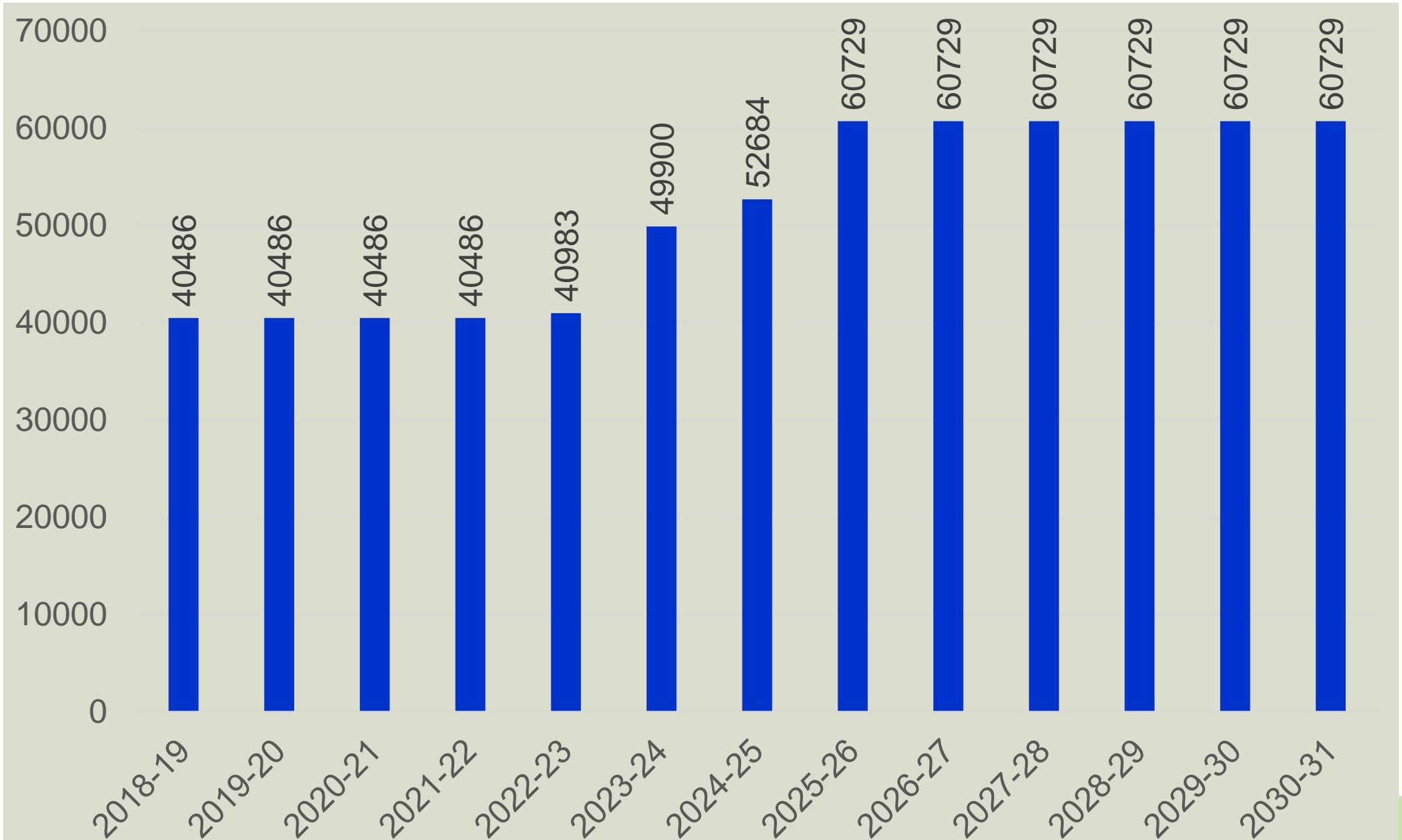
# Community Forestry in Reserved Forestry and Unclass Forest by Plantation and Natural Forest

Area – 248,820 hectare  
User Group – 4707 groups  
Members - 120,005 members



# CF Targets until 2030 for 919,028 hectares

hectare

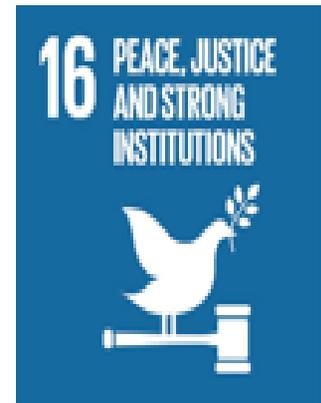
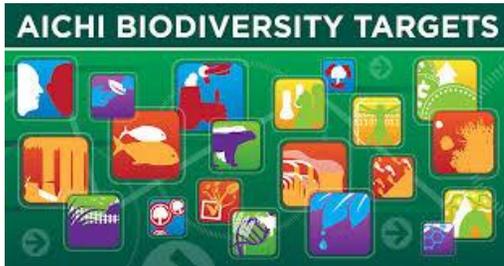
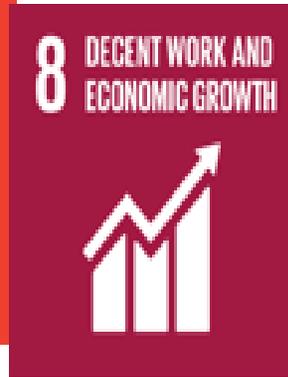


# Reform in Forestry Sector

## Role of Forests in Achieving NDC

Sector	Intended contribution(s)	Supporting actions
<b>Forestry</b>	<ul style="list-style-type: none"> <li>• <b>Reserved Forest (RF) and Protected Public Forest (PPF)</b> = 30% of total national land area</li> <li>• <b>Protected Area Systems (PAS)</b> = 10% of total national land area</li> </ul>	<ul style="list-style-type: none"> <li>• 30-Year National Forestry Master Plan (2001-30)</li> <li>• Myanmar Reforestation and Rehabilitation Programme (MRRP)</li> <li>• UN-REDD Programme</li> <li>• Forest Law Enforcement Governance Trade (FLEGT)</li> </ul>
<b>Renewables</b>		
- Hydro	9.4 GW installed capacity by 2030	Long Term Energy Master Plan National Electrification Master Plan
- Rural electrification	Rural electrification through the use of at least 30% renewable sources.	Comprehensive Village Development Plan
- Industrial energy efficiency	20% energy saving by 2030 of the total forecast electricity consumption.	Partnership with Global Environment Facility to demonstrate possible economy wide savings
- Cookstoves	To distribute approximately 260,000 cookstoves between 2016 and 2031.	Comprehensive Plan for Dry Zone Greening (2001-31) programme

# Contributions of Forestry Sector to Main SDGs and International Commitments



# Reform in Forestry Sector

- Myanmar has made dramatic advances from the incomplete and uncoordinated policy environment of a decade ago.
- Policy development is now much more inclusive – for example the Land Use Policy/Myanmar Environmental Policy/Forest Law/Biodiversity and Protected Law went through multiple rounds of extensive public consultation and inputs.
- The current government banned all logging for one year, and Bago-Yoma for 10 years; annual allowable cuts reduced to sustainable levels (teak under 55% and hardwood under 33% of AAC)
- Extraction can be done by MTE and private contract on behalf of MTE is no longer permitted.



## Reform in Forestry Sector

- 10-years Rehabilitation and Reforestation Programme (2017-18 to 2026-27)
- Re-establishing Natural Habitats Programme (2019-2020 to 2028-2029)
- REDD+ Readiness Implementation
- FLEG-T and EU VPA Process
- Enactment of a new Forest Law (2018), Conservation of Biodiversity and Protected Area Law (2018)



# CHALLENGES FOR SFM

- Lack of integration of forestry policies and planning into other sectoral policies as well as national development plans
- Heavily dependent on forests and developmental matters
- Actual and potential tradeoffs – forests vs. other landuse
- Lack of recognizing – full range of values of forests
- Isolation of forest-dependent community – poverty-limited market access
- Limited resources, insufficient mobilization and man power
- Under-valuing rights, interests and traditional knowledge of indigenous people and local communities
- No legally binding forest instruments

# Priority Actions for the Sustainable Forest Management

- 1) Establish a comprehensive system of protected natural forests
- 2) Maintain an adequate permanent forest estate
- 3) Increase the area of planted forest
- 4) Enhancing and sustainable production of NTFPs by local communities or from sustainably managed forests
- 5) Increase capacity to manage forest sustainably
- 6) Strengthen community management of forests and people-centred development through integration of forest management with rural development plans
- 7) Create a market for forest products from sustainably managed sources/  
Strengthen processing technology of NTFPs
- 8) Set logging taxes and charges to reflect full social cost (full range of value of forests)
- 9) Enhancing international cooperation

**THANK YOU FOR YOUR ATTENTION!**

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### 3 Main Causes of Deforestation

#### (a) Direct Causes (Main Drivers)



1. Over Exploitation
2. Illegal logging
3. Fuel wood extraction
4. Agricultural land expansion
5. Shifting Cultivation
6. Mining
7. Hydropower/irrigation Dam Construction
8. Urban Development
9. Fish and Shrimp farming/ponds in Mangrove area
10. Natural Disaster such as Cyclone, forest fire, etc.

## 3. Main Causes of Deforestation (Cont'd)

### (b) Indirect Causes

1. Poverty and limited job opportunity
2. High market demands of forest products
3. Lack of Land use policy in the past
4. Weak monitoring and assessment in natural resource management
5. Limited budget
6. Weak Law Enforcement
7. Increasing population
8. Weak coordination among stakeholders
9. Corruption
10. Weak political support