The 11th Workshop on GHG Inventories in ASIA (WGIA11)
5-7 July 2013, Tsukuba, Japan

Myanmar National Communication Report

Than Aye
Director
Environmental Conservation Department
Ministry of Environmental Conservation and Forestry

Presentation outlines

- Institutional Structure (MOECAF, ECD)
- Policy and Strategies Developed
- **Background of INC**
  - **Legal basis for the INC development**
  - **Institutional arrangements for the INC development**
  - **INC development process**
- **Overview of GHG inventory**
- **Lesson learned from the INC development**
- **Limitations, constraints and challenges**
- **Planned improvements for SNC and BUR**

Latitudes 9º 55" and 28º 15"north
Longitudes 92º 10" and 101º 10" east
Total land area - 676,577 Km2
Constitutes - 15 States and Regions
Population - about 57.5million (2008)

National Environmental Conservation Committee

National Environmental Conservation Committee (NECC) has been reformed in April 2011 as central organization to carry out the national environmental management and to implement effective environmental conservation and protection in Myanmar.

Institution for Environmental Management

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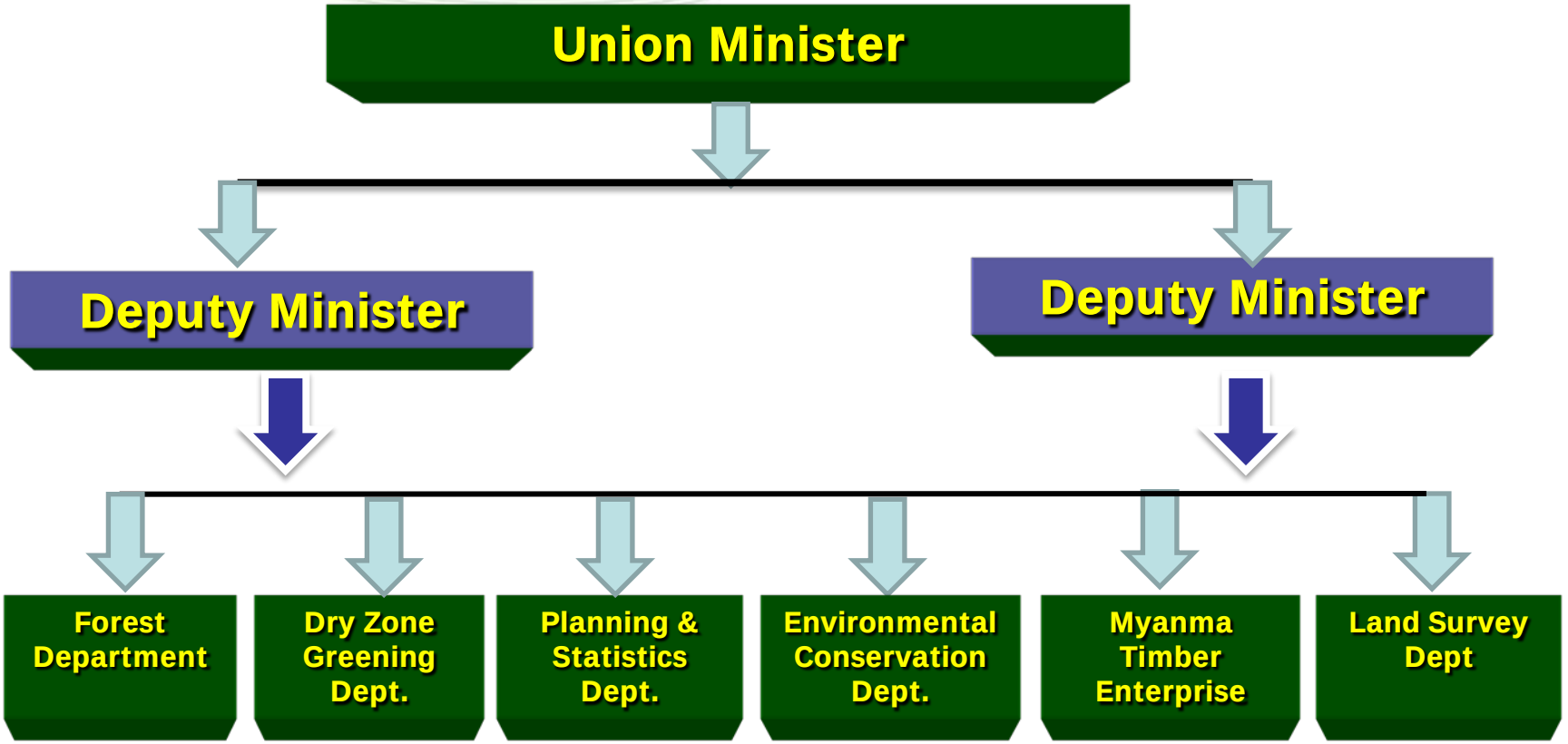
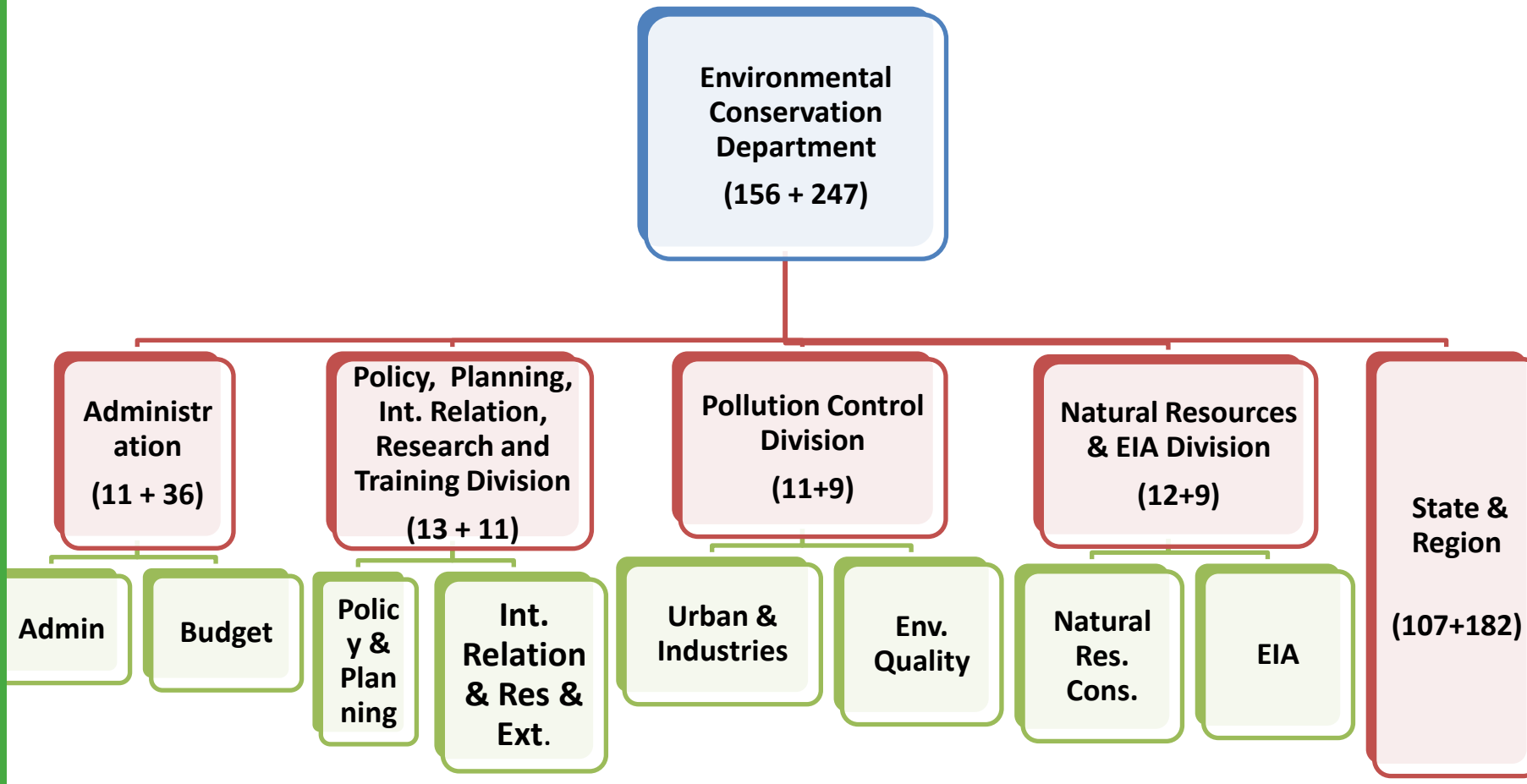
- **Ministry of Environmental Conservation and Forestry (MOECAF) was upgraded in place of** Ministry of Forestry in September 2011 for as the focal point for the overall environmental management in the country, coordinating agency for environmental matters and promoting environmentally sustainable development.
- **The Environmental Conservation Department** under the MOECAF has been now started in 2012 for the effective implementation of environmental conservation and management in Myanmar.

Organizational Structure of MOECAF – Myanmar



Organizational Structure of ECD



Policy and Strategies Developed

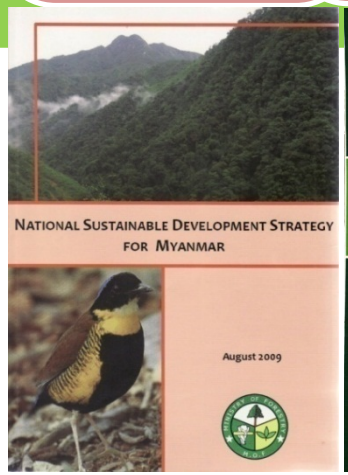
1994 Environmental Policy

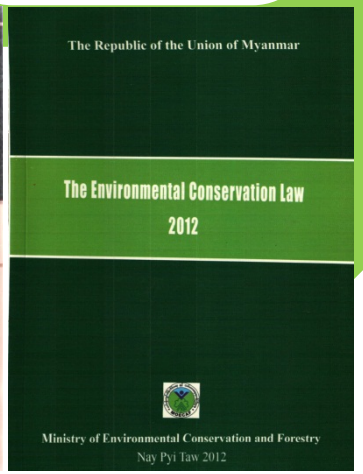
1997 Agenda-21

2009 NSDS

2012 Environmental Law

Environmental Conservation Rules (Drafted)



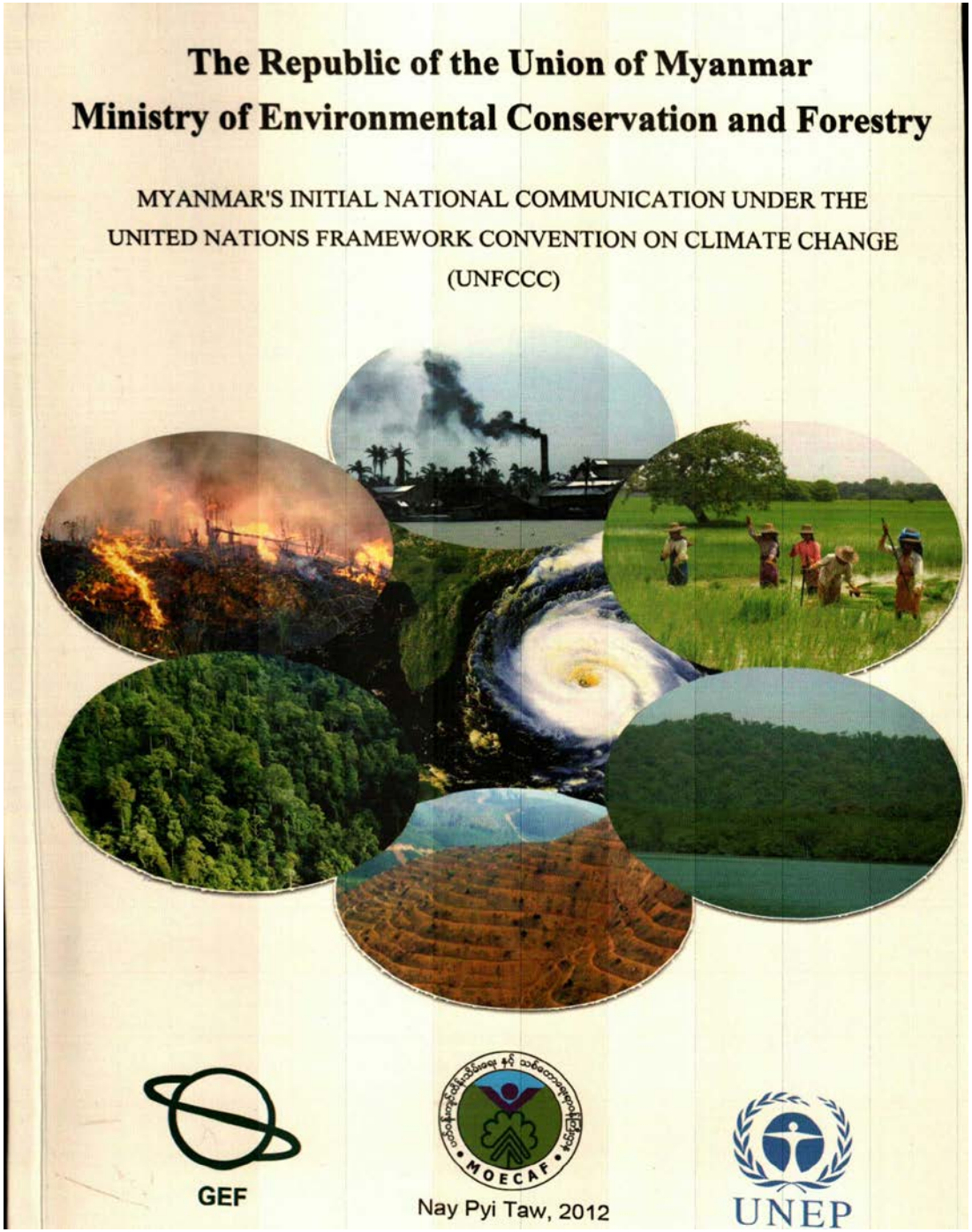


Policy guidelines for Environmental conservation

- To conserve Forests and Biodiversity
- To reduce Air and Water pollution
- To control of Industrial Waste
- To extend Renewable Energy
- To mobilize Participation of people and social organizations
- **To lay down new policy for economic development in parallel with environmental conservation**
- To review and amend laws and enact new laws on environmental conservation

Background of INC

- Myanmar ratified UNFCCC on 25 November, 1994 as a non-Annex I Party.
- Article 12.5 of the UNFCCC requires non-Annex I Parties to make their initial national communications. Thus, Myanmar sought Global Environment Facility (GEF) funding in 2006 for preparing and reporting its INC.
- Accordingly, the MOECAF launched an INC-project in 2008 with the financial assistance from GEF/ UNEP.
- Although this report is the first INC report for Myanmar, it is prepared with components that cover most of the contents of the Second National Communication.
- Myanmar submitted INC to the UNFCCC Secretariat at the COP 16 (2012).



Myanmar INC included 14 Chapters, 05 Annexes, 109 tables, 68 Figures with total of 268 pages.

Myanmar National Communication

- **The National Communication has been prepared by 6 teams of experts involving a total of 55 multi-disciplinary scientists.**
- **This report is a result of long, tedious and creative work of these Myanmar experts working together and reflecting the most comprehensive outlook about climate change in Myanmar context.**
- **The exercise was coordinated by the MOECAF.**

Myanmar National Communication

The project comprised six working groups that deal with:

- **(i) GHG Inventory and Mitigation Option Analysis;**
- **(ii) Vulnerability and Adaptation Assessment;**
- **(iii) Development and Transfer of Environmentally Sound Technologies;**
- **(iv) Research and Systematic Observation;**
- **(v) Education, Training and Public Awareness, and**
- **(vi) Compilation of the National Communication.**

Myanmar National Communication

To integrate environment and development, particular emphasis has been placed on key economic sectors for GHG inventory in Initial National Communication.
These economic sectors are:

1. Energy,
2. Industrial processes,
3. Agriculture including livestock,
4. Land use change and forestry, and
5. Waste.

- The inventory chapter highlights only the main features of GHG inventory, which identifies the potential GHG sources and sinks and provides estimates of major GHGs for year 2000.
- The GHG inventories on emissions by sources and removals by sinks covers **CO2, CH4 and N2O, and NMVOC.**

- GHG study team conducted the national inventory on GHGs by setting the year 2000 as the base year, and prepared the database for each sector and predicted the GHG emission/ reduction in inventoried sectors.
- Therefore, the GHG inventory in this study mostly used the emission factors and default values as described in **IPCC 2006 Guidelines**.

- For estimating GHG emissions, the IPCC 2006 Guidelines, Tier 1 and Tier 2 were used depending on the quality and availability of activity data and emission coefficients as required by each approach.
- The inventory simultaneously adopted the reference approach and sectoral approach based on detailed information on technologies as recommended by the IPCC Guidelines.
- The classification of sectors and fuel types are basically the same as the classification in the IPCC Guidelines in which the transport sector is defined as the transport of the whole society.


GHGS EMISSION IN MYANMAR

Greenhouse Gas Inventory

Total GHG Emissions/Removal for the Base year 2000 (Gg)

Source / Sink	CO_2 Removal	CO_2 Emission	CO Emission	CH_4 Emission	N_2O Emission	NoX Emission	CO_2 Equ. Total Emission	CO_2 Equ.Net Emission
Energy Sector		7,658.65	-	5.62	0.28	-	7,863.47	7,863.47
Industry Sector		248.59	-	-	-	-	463.29*	463.29
Agriculture Sector			0.81	963.73	8.4	0.022	22,843.25	22,843.25
Agriculture			0.81	507.23	8.2	0.022	13,194.75	13,194.75
Livestock				456.5	0.2		9648.5	9648.5
Forestry Sector	142,221.20	33,656.64	2,215.37	144.85	4.26	34.08	40,404.73	-101,816.50
Waste Sector				134.57			2,825.97	2,825.97
TOTAL	**142,221.20**	**41,563.88**	**2,216.18**	**1,248.77**	**12.94**	**34.102**	**74,400.71**	**-67,820.50**

Note: Global Warming Potentials (GWPs) in calculating CO_2 equivalent: CO= 1, CH_4 =21, N_2O= 310, NO_x = 5;
* other gases NMVOC, ODS and SF6 amounted to 214.7 Gg CO2e.

GHG emissions and removals in Myanmar for the year 2000

Source/Sink	CO_2 removal (Gg)	CO_2e total emission (Gg)	CO_2e net emission (Gg)	Share of emission (%)
Energy sector	0	7863.47	7863.47	10.6
Industrial sector	0	463.29	463.29	0.6
Agriculture sector including livestock	0	22,843.25	22,843.25	30.7
Land use change and Forestry sector	142,221.20	40,404.73	-101,816.50	54.3
Waste sector	0	2825.97	2,825.97	3.8
Total	142,221.40	74,400.71	-67,820.50	100.0

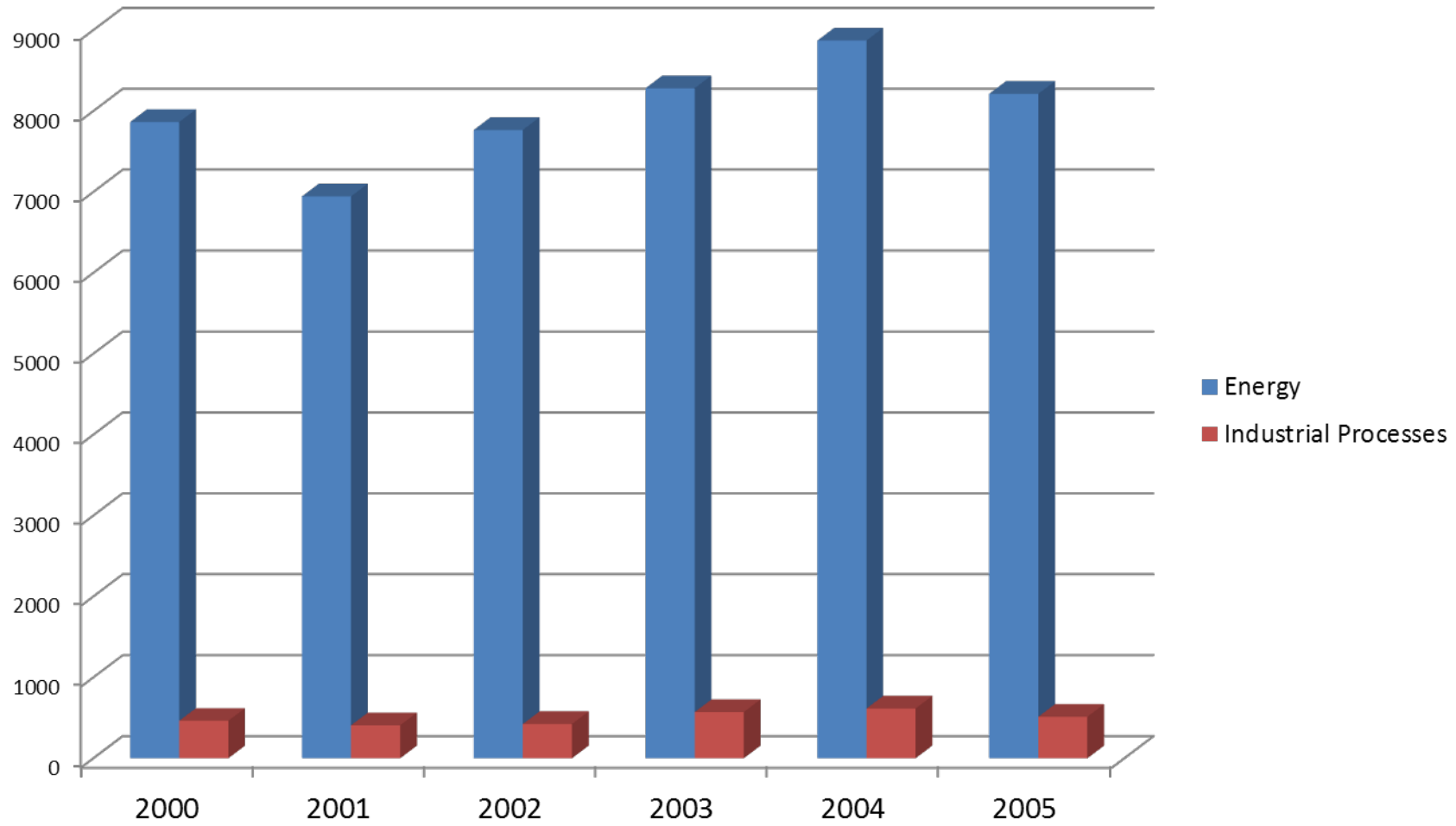
GHG emissions in Myanmar for the year 2000

- Summary of GHG emissions in Myanmar for the year 2000 is a total net emission amounting to – 67,820.5 GgCO2e.

- Total CO2 emission in Myanmar for the year 2000 was estimated to be 41,563.75 Gg. Emissions from Energy sector have been estimated at 7,863.47 Gg CO2e.

- CH4 was emitted from Agriculture and Livestock sector emitted 963.73 Gg of CH4 ; Forestry sector produced the largest amount of GHG emissions of 40,404.73 Gg CO2e.

Emissions from Energy sector and Industrial processes and product use sector (Gg)



Lesson learned from the INC development

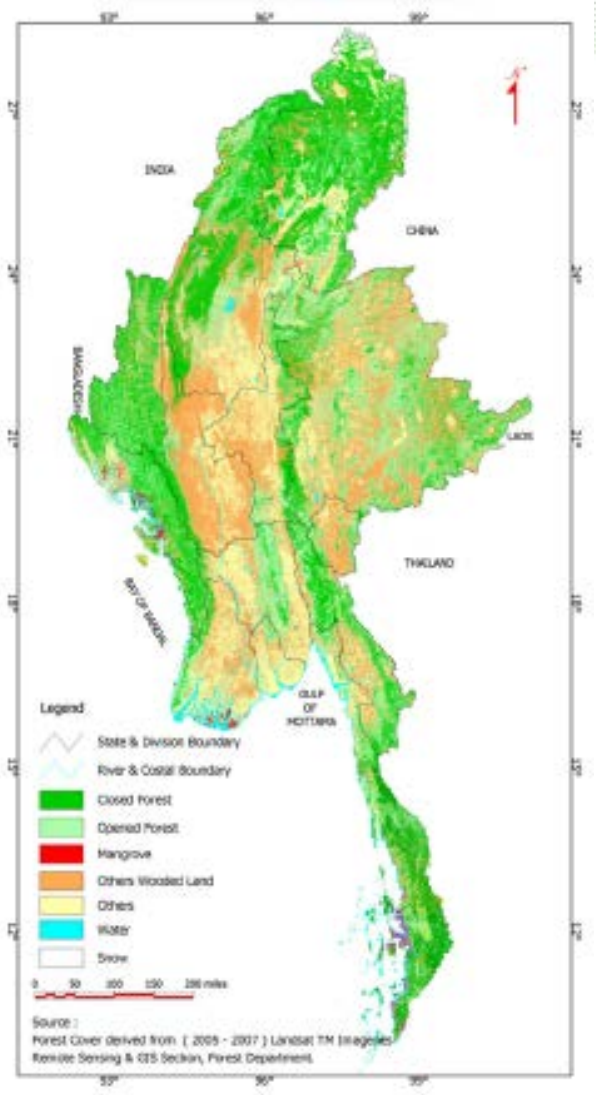
Lesson learned from the INC development

- (1) **Updating inventory data is required** on a continuous basis in order to facilitate various related energy software.

- (2) **Absence of national air quality standards** make it harder for the authorities to implement pollution control measures.

- (3) **Monitoring equipment is required** to inspect the actual emission performance of motor vehicles.

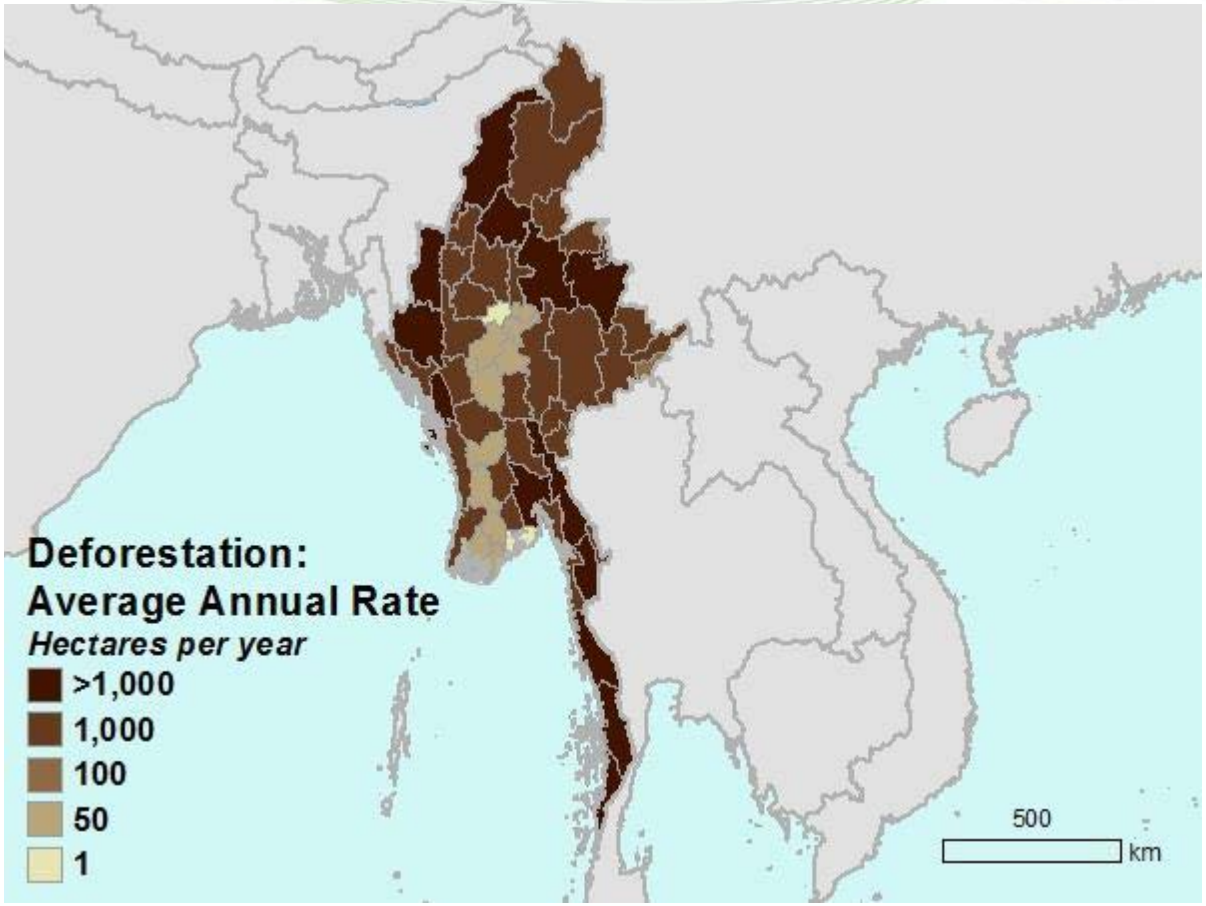
Forest resource base – Conservation of natural forests



Permanent forest estate (PFE)

Legal classification	Area (km^2)	% of land area
Reserved forest (RF)	121,842.91	18.07
Protected public forest (PPF)	40,949.60	6.40
		24.47
Protected area system (PAS)	35,106.85	6.67

Source: Forestry in Myanmar, 2011



Deforestation

Forest area (2010): **48%**

Primary forest area (2010): **4.9%**

1990-2000: **-1.17 %y-1**

2000-2005: **-0.90 %y-1**

2005-2010: **-0.95 %y-1**

relatively course MODIS data

National deforestation estimates in percent per year from FAO (2010).

Mapped sub-national estimates of the Deforestation Indicator in hectares are indicative only, given the resolution of the data source, and are from CI (2011), derived from the MODIS percent tree-cover change

- Myanmar's total forest area in 2010 was 31.7 million hectares but was destroyed at a rate of 310,000 hecta-res per year between 2005 and 2010. Main drivers of deforestation in Myanmar are agricultural conversion, fuel wood and charcoal consumption, and commer - cial logging. Additionally, population growth and high resource demand from neighboring countries, international demand for forest products for energy use and agricultu

Limitations, constraints and challenges

- *Present efforts in national greenhouse gases inventory –*

Very limited activities on climate change have been carried out in Myanmar apart from the preliminary GHG inventory and mitigation options assessment undertaken in the ALGAS-study in 1996.

- *Data availability constraints*

Limited user-friendly database on ESTs, including endogenous technologies is an example of such constraints. There are no forecasts of El Nino Southern Oscillation (ENSO) events in Myanmar. The methods used for the development of Vulnerability indices & maps need to be elaborated.

- *Needs for GHG-inventory on a continuous basis*

CO2, CH4 and N2O data need to be updated and extended based on the COP-8 Guidelines. Capacity building of Individual researchers in various sectors should be promoted, and GHG-inventory needs to be conducted on a continuous basis.

Planned improvements for SNC and BUR

Planned improvements for SNC and BUR

- **Myanmar has started preparing for the Second National Communication with some primary works as follows:**
- **Contacted with GEF Implementing Agency.**

Planned improvements for SNC and BUR

- Upon signing the attached Project Cooperation Agreement (PCA), Myanmar carry out a stock-taking (self-assessment) exercise for the preparation of National Communications a project implementation plan.
- This exercise includes two closely linked elements :

  The first objective is to undertake national stocktaking and stakeholder consultations to review work carried out under previous climate change enabling activities and identify gaps and propose relevant activities to be undertaken within the framework of preparing the TNC under the UNFCCC.
- The second objective is to prepare the {Second/Third} National Communications of Myanmar under the UNFCCC.

Thank You for Your Kind Attention