

Mongolia  
Dr. Batima Punsalmaa

Workshop of GHG Inventories in Asia Region

## Mongolia's GHG inventory

13-14 Phuket, Thailand

Batima P. Institute of Meteorology and Hydrology

## UNFCCC and Kyoto protocol

The Government of Mongolia signed the UNFCCC on **June 12, 1992** at the Rio Conference and the Great Khural (Parliament) of Mongolia ratified it **on September 30, 1993**.

The Government of Mongolia ratified/accessed the Kyoto Protocol on **15 December 1999**.

### Main gases

- The GHG inventory includes emissions of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), nitrogen oxides (NO<sub>x</sub>) and carbon monoxide (CO) for the base year 1994.
- Emissions of other greenhouse gases, such as NMVOCs and PFCs, have not been included in the inventory.

### Sectors

- Energy,
- Industrial Processes,
- Agriculture,
- Land Use Change and Forestry, and
- Waste.

## Data

- In most instances the main obstacle was the lack of reliable data for the calculations
- Only general activity data, such as
  - fuel consumption,
  - cement production,
  - domestic animal population,
  - area of cultivated land

## Institutions

- National Agency for Meteorology, Hydrology and Environment Monitoring
- Institute of Meteorology and Hydrology
- Mongolian National University
- Energy Conservation CO.Ltd
- Ulaanbaatar City Governor's Office

## Methodologies

- IPCC Guidelines for National GHG Inventories (IPCC, 1995) and the Revised 1996 Guidelines (IPCC, 1997);
- IPCC default EF
- Some modification

## Inventory

- Mongolia prepared its first greenhouse gases (GHG) inventory in 1996 for the base year 1990 under the US Country Studies Programme
- Updated within the Asia Least-Cost Greenhouse Gas Abatement Strategy (ALGAS),
- As part of the enabling activities of preparation of the Initial National Communication (GEF/UNEP), the GHG inventories were updated to 1998 with base year 1994.

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## Modification

Category	Subcategory	Modified items
Energy	Fuel Combustion	-classification of fuel type -conversion factors for conversion from kilotonne to Terajoule for solid fuel -oxidized carbon fraction for solid fuel burning
	Traditional Biomass Fuel Combustion	- international bunker data (added) -traditional biomass fuel accounting (added)
Industrial processes	lime production (added)	
Agriculture	Livestock	- enteric fermentation emission factors
Land Use Change and Forestry	Changes in Forests and Other Woody Biomass Stocks	-area of forest/biomass stock -biomass expansion conversion ratio -annual growth rate
Grassland Conversion		-emissions from lands used by mines (added)
Waste	Landfills	-fraction of solid waste landfilled -fraction of carbon in biogas which is released as methane

## Modification

- “0.92” for the fraction of oxidized carbon for solid fuels
- “0.6 t dm/ha” for annual growth rate of logged forests and “0.2 t dm/ha” for planted forests

## Mongolia INC

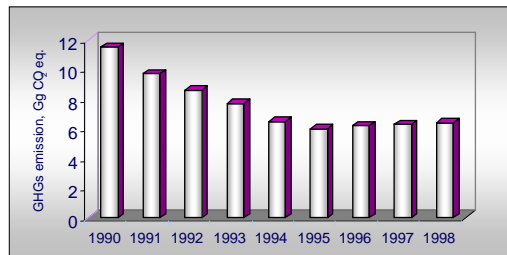
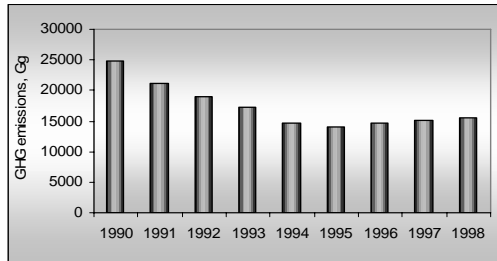
- Mongolia's Initial National Communication was reviewed by the National Communication Support Programme, the UNEP Collaborating Centre on Energy and Environment

## GHG emissions

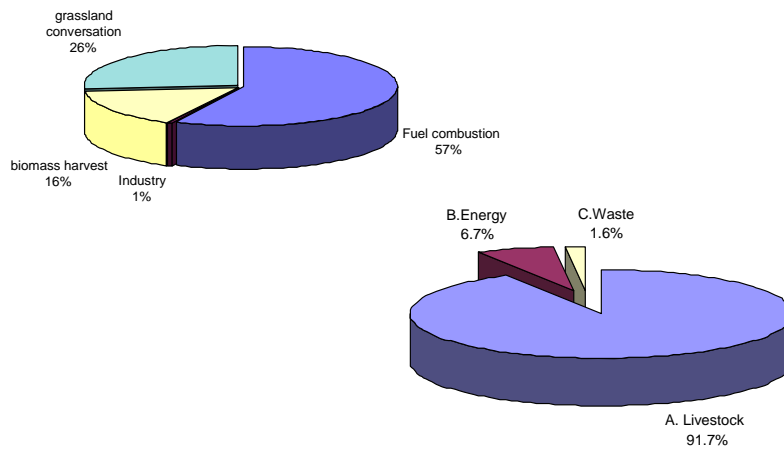
- Fossil fuel combustion is the largest source of CO<sub>2</sub> emissions in Mongolia, accounting for about 60% of all emissions. The second largest source is from the conversion of grasslands for cultivation (20-27%). Emissions from industrial processes account for less than 1% of all emissions. Total emissions of CO<sub>2</sub> in Mongolia reached 9,064 Gg in the base year 1994, representing a decrease of 10,072 Gg from 1990 emission levels. CO<sub>2</sub> emissions have been increasing since 1996, reaching 8,729 Gg in 1998. The removals are increasing constantly. The removal in 1990 was 9.9% of total emissions; it increased to 39.4% and 44.7% in 1994 and 1998, respectively.

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**GHG emissions**



**CO<sub>2</sub> and CH<sub>4</sub> emissions by sector for 1994**



## Problems and Gaps

### Availability of Information:

- No standard data for inventory and mitigation study except statistical data

### Human resources:

- No incentives to keep trained national experts
- No permanent coordination that could provide the continuity of the study on climate change

### Methodologies and tools

- Could not develop country specific emission factor

### Financial constraints:

- GEF

## Recommendations

- More training at international level
- Provide possibility to involve experts that have been participated in previous NC
- Establish regional or sub-regional center for GHG inventory and data base
- Establish information exchange network on climate change
- Improve mechanism to implement specific needs identified in the NCs