

Greenhouse Gases Inventory in Agricultural Sector of Thailand

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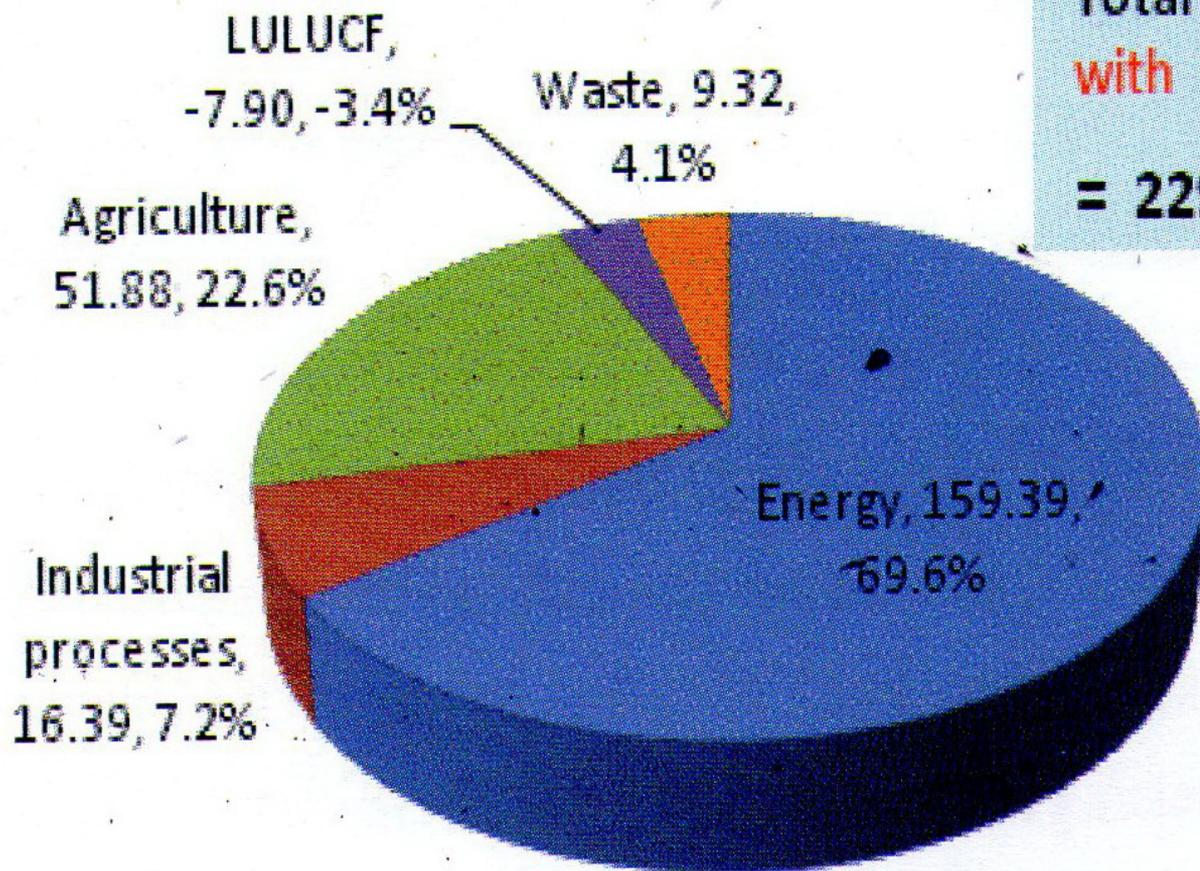
GHG Inventory for SNC

- **Carried out by The Office of Natural Resources and Environmental Policy and Planning**
- **Under the guidance of the National Climate Change Committee**
- **Supervised by the Project Steering Committee represented by public and private sectors and NGOs**
- **Describes Greenhouse gases status of the year 2000-2004**

Inventory Guidelines

- Follow the UNFCCC reporting guidelines (Decision 17/CP.8)
- Revised 1996 IPCC Guidelines for National GHG Inventory,
- 2000 IPCC Good Practice Guidance and Uncertainty Management.
- 2003 Good Practice Guidance for Land-Use Change and Forestry

GHG emission in 2000 (Tg CO₂ eq, %) - by sector



Total GHG Emission
with LULUCF

= 229.08 Tg CO₂ eq

$$\text{LULUCF} = -13.35(5a) + 44.47(5b) - 39.02(5c) \text{ Tg} = \text{SINK} - 7.90 \text{ Tg CO}_2 \text{ eq}$$

Sub-sectors for assessment

Enteric Fermentation	Tier 2
Manure Management	Tier 2
Rice Cultivation	Tier 2
Agricultural Soils	Tier 1
Field Burning of Agricultural Residues	Tier 2

Sources of data

Sub-Sectors	Sources
A. Enteric fermentation	Department of livestock
B. Manure management	Department of livestock
C. Rice cultivation	Department of Agricultural Economics
D. Agricultural soils	Department of Agricultural Economics
F. Field burning of agricultural residues	Department of Agricultural Economics

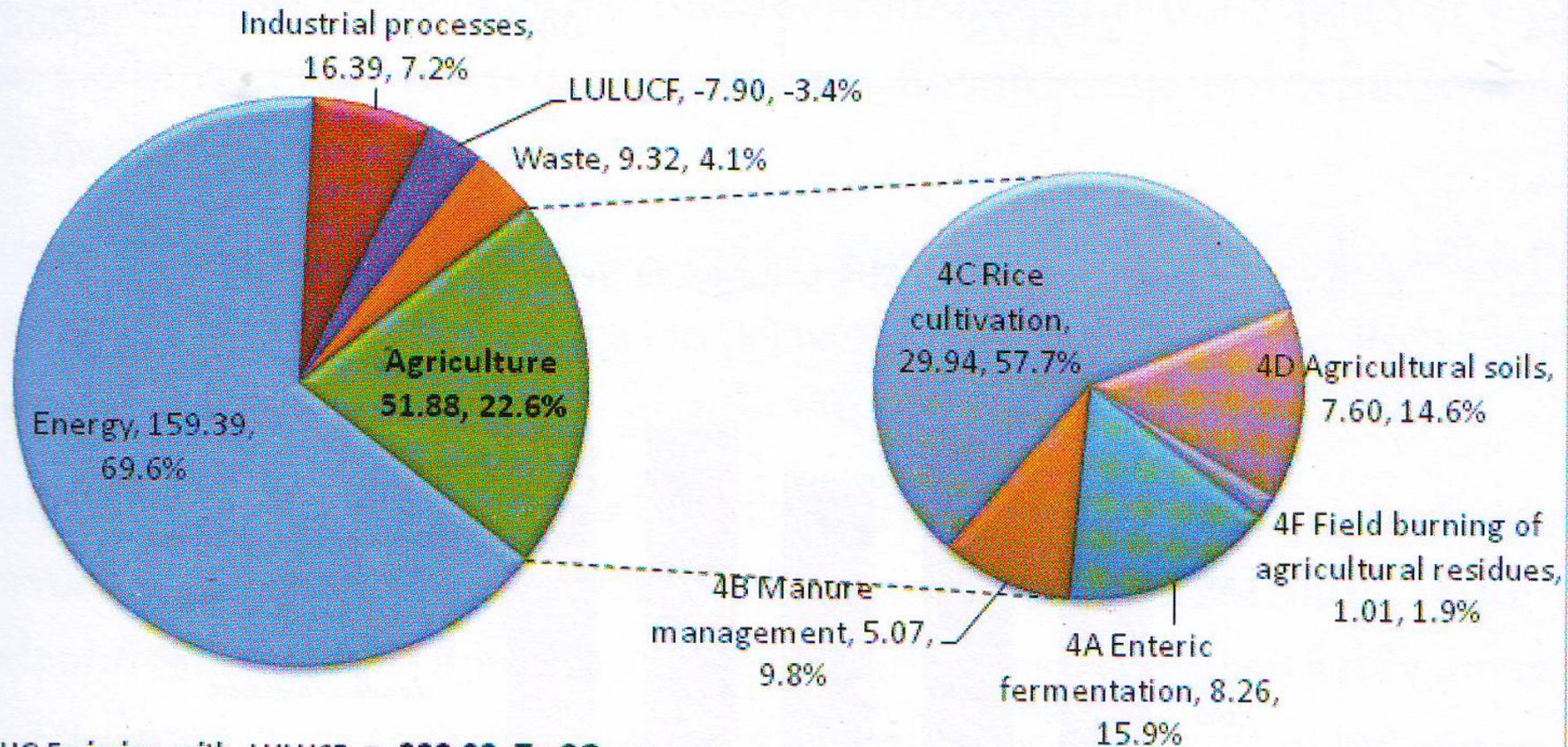
Sources of data

Sub-Sectors	Activities data	Sources
A. Enteric fermentation	Number of Livestock and poultry /y	Department of livestock
B. Manure management	Number of Livestock and poultry /y Type of management	Department of livestock
C. Rice cultivation	Harvested area, water management, fertilization, Plantation methodology	Department of Agricultural Economics
D. Agricultural soils	Nitrogen fertilization both chemical and organic	Department of Agricultural Economics
F. Field burning of agricultural residues	Amount of crop residues	Department of Agricultural Economics

Greenhouse gas emissions from agriculture in 2000 by gas types (t-tons)

	CH4	N2O	CO	NOx	Tier
Total national emission	2,801.5	40.0	5,624.4	907.0	
4. Agriculture	1,977.0	33.4	754.1	29.9	
A. Enteric fermentation	393.3				Tier 2
B. Manure management	122.0	8.1			Tire 2
C. Rice cultivation	1,425.741				Tier 2
D. Agricultural soils		24.5			Tier 1
F. Field burning of agricultural residues	35.9	0.8	754.1	29.9	Tier 2

Emission in 2000 by 'Agriculture' (Tg CO₂ eq, %)



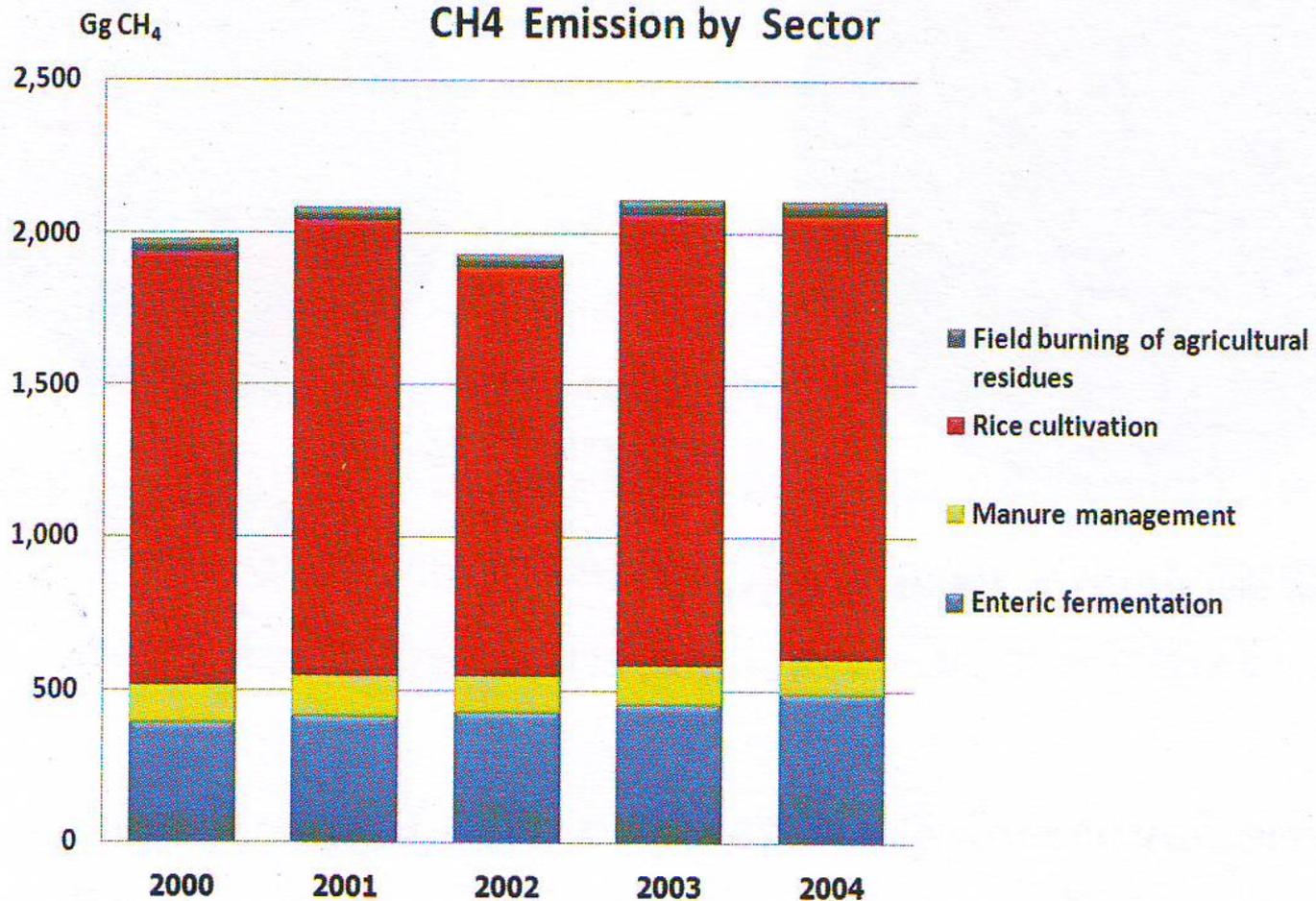
Total GHG Emission with LULUCF = 229.08 Tg CO₂eq

Greenhouse Gases from Agr. Sec.

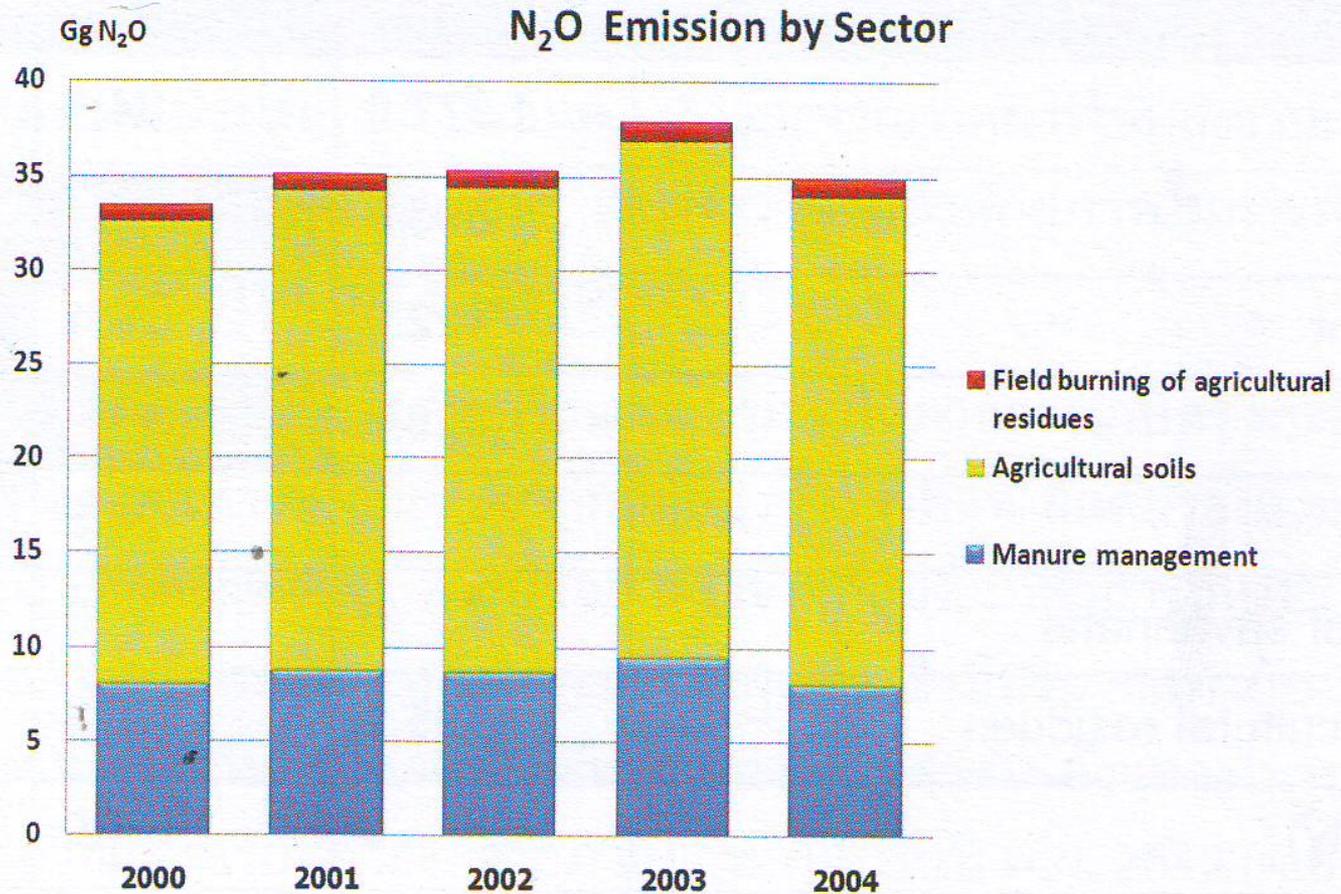
2000-2004

	CH4 (Gg)	N2O (Gg)	Total (Gg CO2 eq)
2000	1976.96	33.43	51878.83
2001	2083.76	35.09	54637.17
2002	1927.94	35.26	51417.64
2003	2112.14	37.80	56073.91
2004	2104.74	34.85	55002.26

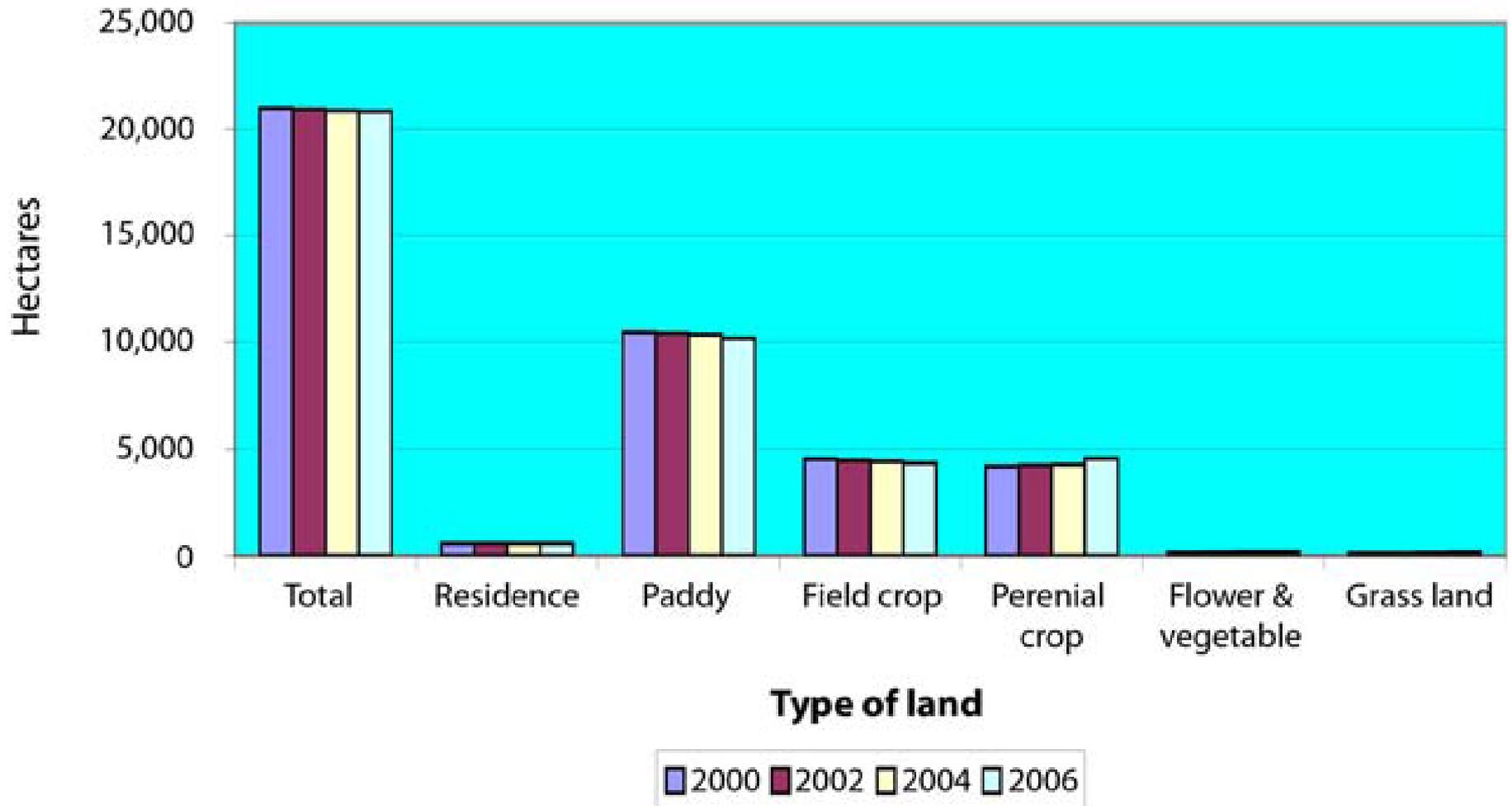
CH₄ Emission by Agri. Sector



N₂O Emission by Agri. Sector



Agriculture land distribution, 2000 to 2006



Recommendation for further improvement

1. More detailed data on livestock eg.: age group, sex, species, types of feed, feeding system etc.,
2. Data must be periodically recorded,
3. Data on waste management practices at farm level,
4. More data on paddy management and environment eg.: soils, rice varieties, fertilization, straw management, organic fertilizer application etc.
5. Data on fertilization of agricultural soils
6. Data on amount of manure produced per head
7. Ratio of crop residues and burning must be studied
8. Fraction burning values of every crop must be standardized

Support Required for GHG Inventory

- Develop local emission factors for Agricultural Sector,
- Collect appropriate activity data to support the estimation of GHG inventory
- Develop an estimation method for Agriculture to higher tier
- Train relevant officials and agencies to carry out the estimation regularly
- Train technical personnel in agriculture sector to develop appropriate estimation methodologies and techniques



Thanks for your kind attention