

The 6th Workshop on GHG Inventories in Asia (WGIA6)
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VIETNAM'S GHG INVENTORIES IN AGRICULTURE SECTOR



Nguyen Van Anh

Standing Office of the Vietnam National Steering
Committee for UNFCCC and Kyoto Protocol
Ministry of Natural Resources and Environment

VIET NAM

National GHG Inventories in Agriculture for 2000

GHG emissions from Agriculture sector were divided into five following sub-sectors:

1. Livestock



2. Rice cultivation



3. Agricultural soil



4. Prescribed burning of savannas

5. Field burning of agricultural residues



Key Category Analysis for GHG Inventory in Agriculture Sector for SNC – Viet Nam



	CH ₄	N ₂ O	NO _x	CO
A Enteric Fermentation	<input checked="" type="checkbox"/>			
1 Cattle	<input checked="" type="checkbox"/>			
2 Buffalo	<input checked="" type="checkbox"/>			
3 Sheep	<input checked="" type="checkbox"/>			
4 Goats	<input checked="" type="checkbox"/>			
5 Camels and Llamas	<input checked="" type="checkbox"/>			
6 Horses	<input checked="" type="checkbox"/>			
7 Mules and Asses	<input checked="" type="checkbox"/>			
8 Swine	<input checked="" type="checkbox"/>			
9 Poultry	<input checked="" type="checkbox"/>			
10 Other (please specify)	<input checked="" type="checkbox"/>			
B Manure Management	<input checked="" type="checkbox"/>			
1 Cattle	<input checked="" type="checkbox"/>			
2 Buffalo	<input checked="" type="checkbox"/>			
3 Sheep	<input checked="" type="checkbox"/>			
4 Goats	<input checked="" type="checkbox"/>			
5 Camels and Llamas	<input checked="" type="checkbox"/>			
6 Horses	<input checked="" type="checkbox"/>			
7 Mules and Asses	<input checked="" type="checkbox"/>			
8 Swine	<input checked="" type="checkbox"/>			
9 Poultry	<input checked="" type="checkbox"/>			
10 Anaerobic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
11 Liquid Systems	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
12 Solid Storage and Dry Lot	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
13 Other (please specify)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
C Rice Cultivation	<input checked="" type="checkbox"/>			
1 Irrigated	<input checked="" type="checkbox"/>			
2 Rainfed	<input checked="" type="checkbox"/>			
3 Deep Water	<input checked="" type="checkbox"/>			
4 Other (please specify)	<input checked="" type="checkbox"/>			
D Agricultural Soils	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
E Prescribed Burning of Savannas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F Field Burning of Agricultural Residues				
1 Cereals	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2 Pulse	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 Tuber and Root	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4 Sugar Cane	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5 Other (please specify)	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G Other (please specify)	<input checked="" type="checkbox"/>			

Emission factors

1. Livestock (emission factors for CH₄)

Unit: kg/head/yr

	Enteric fermentation	Manure management
Dairy cattle	56	27
Non-dairy cattle	44	2
Buffalo	55	3
Goats	5	0.22
Horses	18	2.18
Swine	1	7
Poultry	0	0.023

Source: the revised 1996 IPCC Guidelines for National GHG Inventories

Country – Specific Emission Factors

Rice cultivation (seasonally integrated emission factors for continuously flooded rice without organic amendment of CH₄)

Unit: g/m²

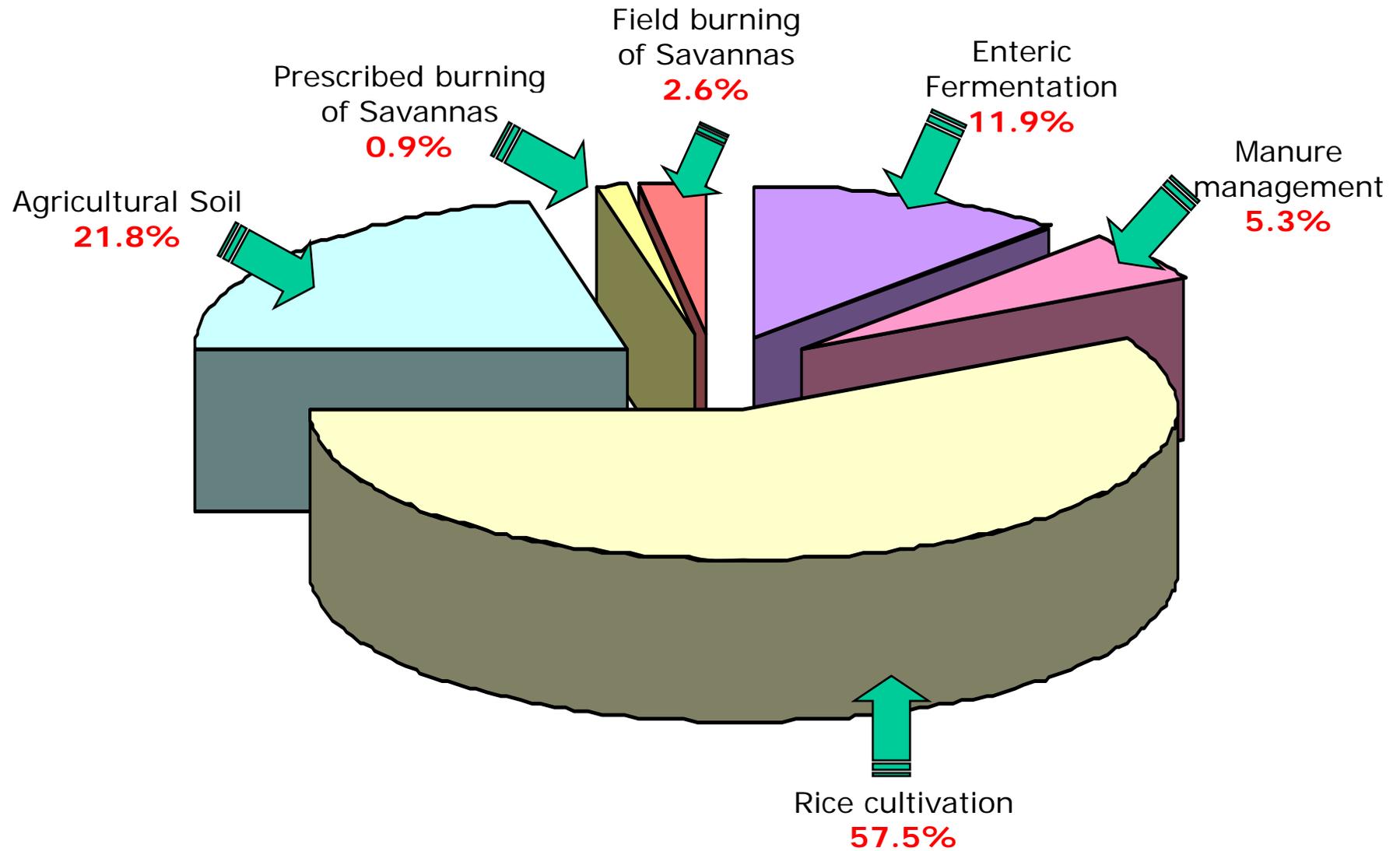
	The North	The Central	The South
Continuously Flooded	37.5	33.59	21.7
Intermittently flooded – single aeration	18.8	16.79	10.85
Flood prone	30	26.87	17.36

National GHG Inventories in Agriculture for SNC

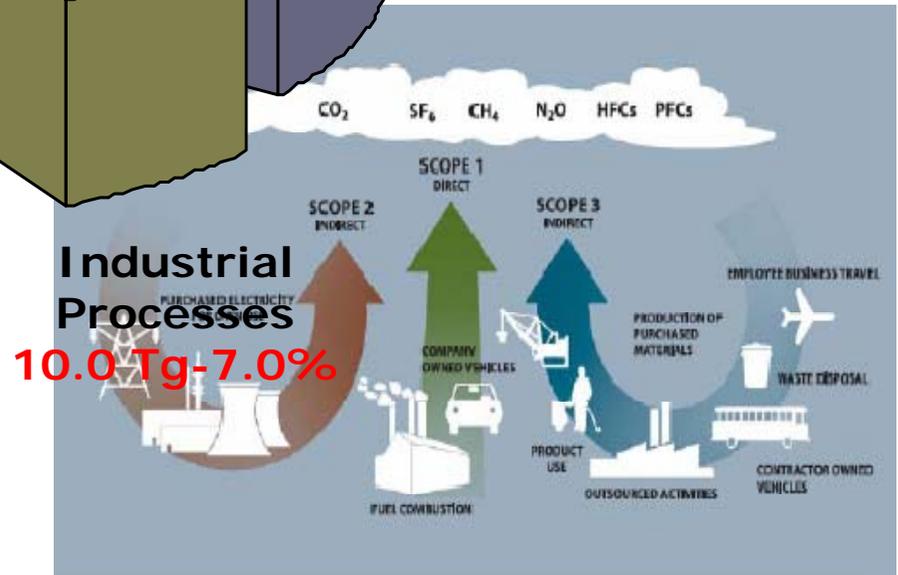
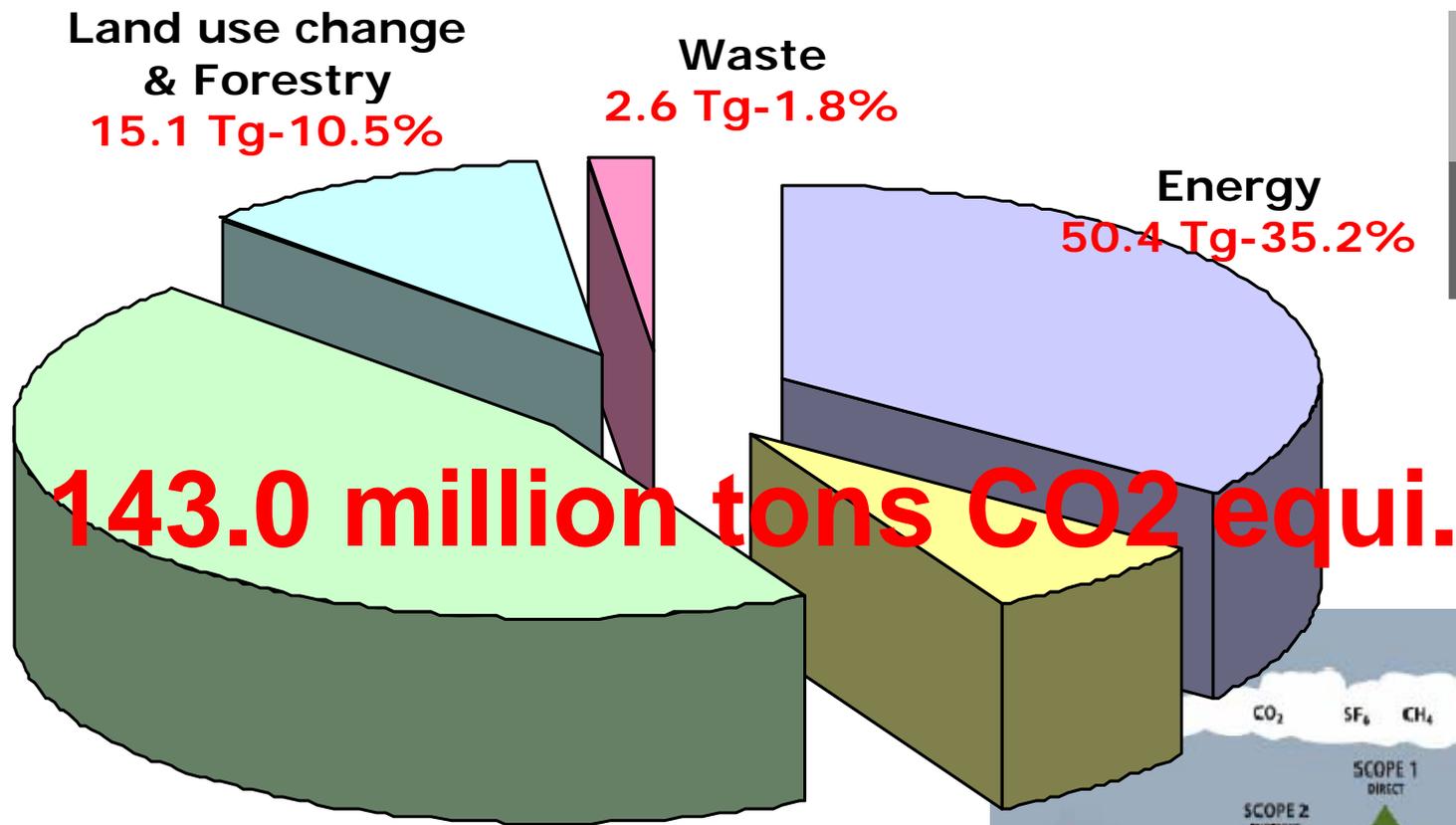
Unit: Gg

Sub-sector	CH ₄	N ₂ O	CO	NO _x	CO ₂ equivalent	%
Enteric Fermentation	368.12				7,730.54	11.9
Manure Management	164.16				3,447.30	5.3
Rice Cultivation	1,782.37				37,429.77	57.5
Agricultural Soil		45.87			14,219.70	21.8
Prescribed Burning of Savannas	9.97	1.23	261.71	4.46	590.67	0.9
Field Burning of Agricultural Residues	59.13	1.39	1,214.68	50.28	1,672.63	2.6
Total	2,383.75	48.49	1476.39	54.74	65,090.61	100

GHGs emission from Agriculture sector in 2000

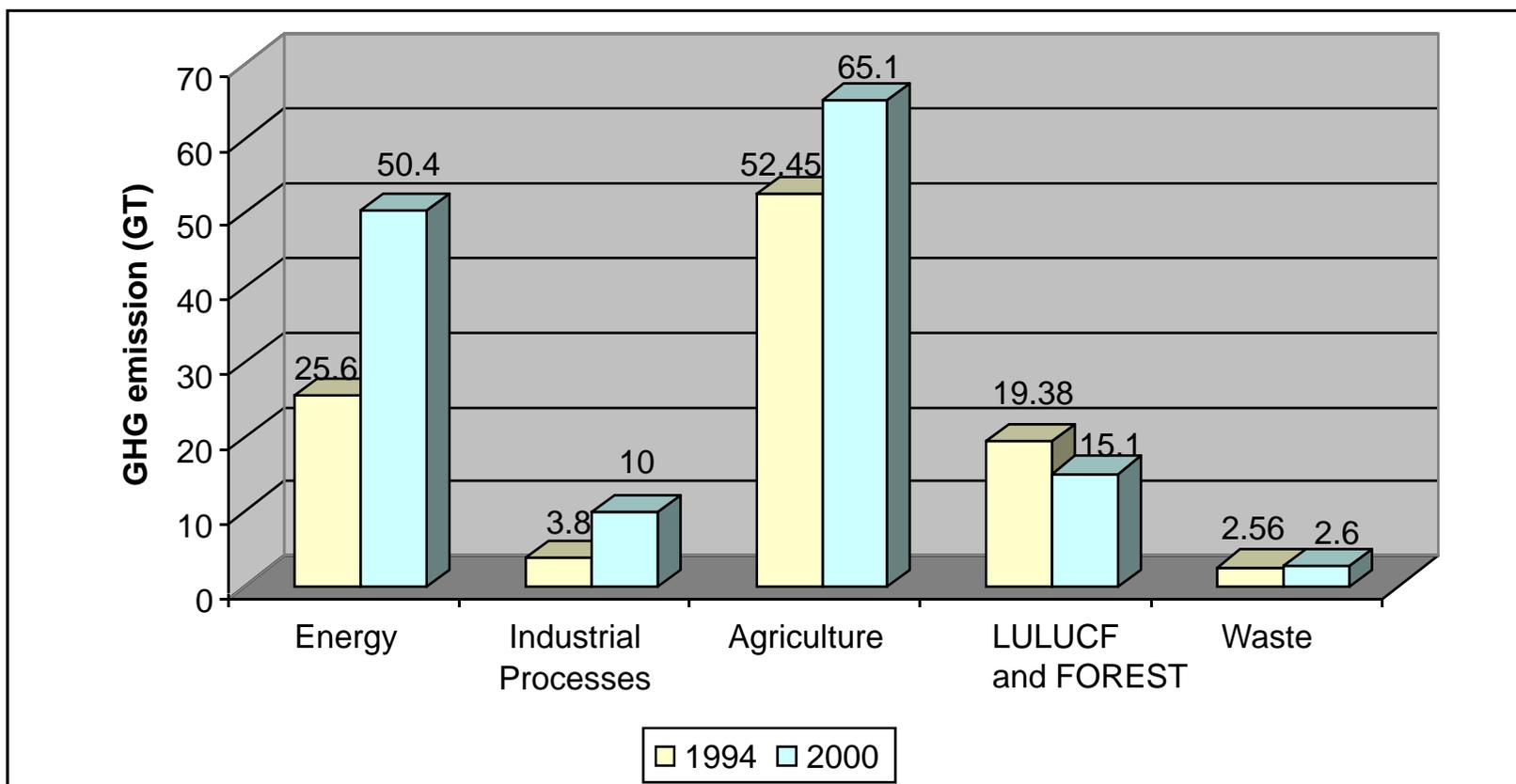


The GHG inventory in 2000 in SNC



(Source: MONRE 2008)

GHG emissions by sector in 1994 (INC), 2000 (SNC) (GT CO₂ equivalent)



Total GHG Emission (1994): 103.0 million tons CO₂ equi.

Total GHG Emission (2000): 143.0 million tons CO₂ equi.

Conclusions

- At present, Agriculture is the biggest GHG emission source in Viet Nam
- In 2000, GHG emission from this sector was 65.1 million tonnes of CO₂ equivalent, representing 45.5% of total emissions
- There are some uncertainties associated with activity data in Agriculture sector
- Most of emission factors in 2000 GHG Inventory are from the revised 1996 IPCC Guidelines for National GHG Inventories. Due to using these default emission factors, there are some uncertainties that should be verified, analyzed and made clear in the coming time.

*Thank
you*

