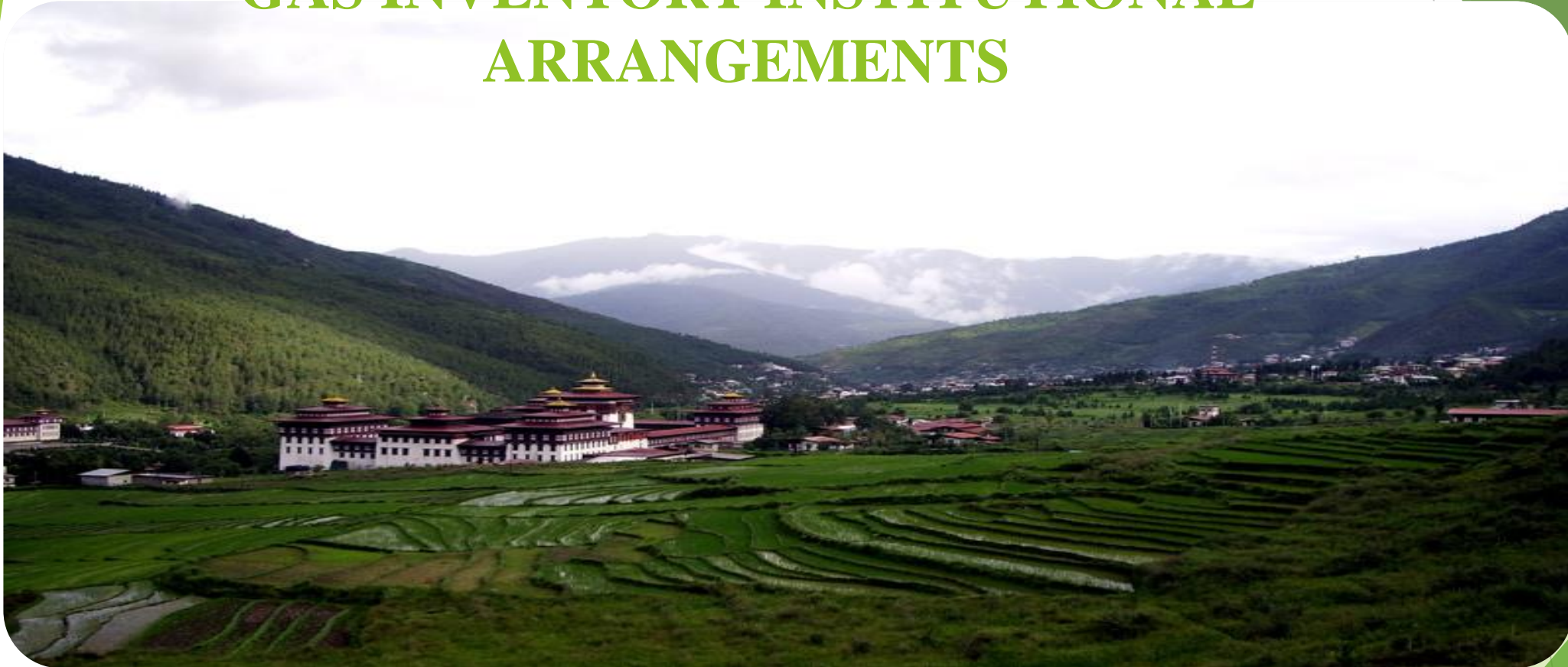


# 16th Workshop on GHG Inventories in Asia (WGIA16) - New Delhi, India

# **BHUTAN CARBON NEUTRAL & GREENHOUSE GAS INVENTORY INSTITUTIONAL ARRANGEMENTS**



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*Department of Industry & National Environment Commission Secretariat*

*Royal Government of Bhutan*

# CARBON NEUTRAL COMMITMENT

- ▶ Bhutan is a responsible nation and is committed to growth with environmental responsibility.



# CARBON NEUTRAL COMMITMENT

- ▶ The Kingdom of Bhutan first declared and committed to remain carbon neutral in 2009 (COP15) and reaffirmed to remain so in 2015 in COP 21 in Paris.
- ▶ Bhutan submitted the Intended Nationally Determined Contribution (now NDC) in 2016 and re-communicated our resolve to remain carbon neutral by ensuring that our emission of GHGs does not exceed the sink capacity of our forests.
- ▶ 70.5% of the land area is under forest cover, and the estimated sequestration capacity of our forest is 6.3 million tons of CO<sub>2</sub> while the emissions for year 2010 is about 2.6 million tons of CO<sub>2</sub> equivalent. Currently carbon negative.

# Strength- Environmental Laws & Legal aspects

## ▶ **Constitution of the Kingdom of Bhutan**

Article 5, page 11 & 12 mandates the protection and preservation of the natural environment and maintain a minimum of 60% of the total area under forest cover for all time.

## ▶ **Development Philosophy of Gross National Happiness emphasizes on:**

- ✓ Sustainable economic development;
- ✓ Preservation and promotion of culture and tradition;
- ✓ Conservation of environment;
- ✓ Good governance.

► **Environmental Assessment Act 2000**

This Act establishes procedures for the assessment of potential effect of strategic plans, policies, programs and projects on environment, and for the determination of policies and measures to reduce potential adverse effects and to promote environmental benefits.

► **National Environment Protection Act 2007**

An Act to provide for the establishment of an effective system to conserve and protect environment through the National Environment Commission or its successors

► **National Forest Policy 2011**

Bhutan is a net GHG sequester largely due to its vast forest cover. The National Forest Policy is geared towards sustainable management of forests including the maintenance of the health and vitality of forests and a minimum of 60 percent forest cover (as enshrined in the Constitution).

► **National Strategy and Action Plan for Low carbon development (carbon neutral strategy), 2012**

The National Strategy and Action Plan for Low Carbon Development was prepared to enable Bhutan to fulfill its commitment of remaining carbon neutral.

► **Economic Development Policy (2017)**

It is developed with a vision for green and self-reliant economy sustained by knowledge-based society guided by the philosophy of GNH (Gross National Happiness).

## Major Challenge

- ▶ As a landlocked country located in a fragile mountainous environment/ecosystem, Bhutan remains highly vulnerable to the impacts of climate change and will disproportionately bear the impacts of climate change.





- ▶ Bhutan in recent years has seen rapid economic development with industrialization and urbanization, which has led to increase in GHG emissions manifold.

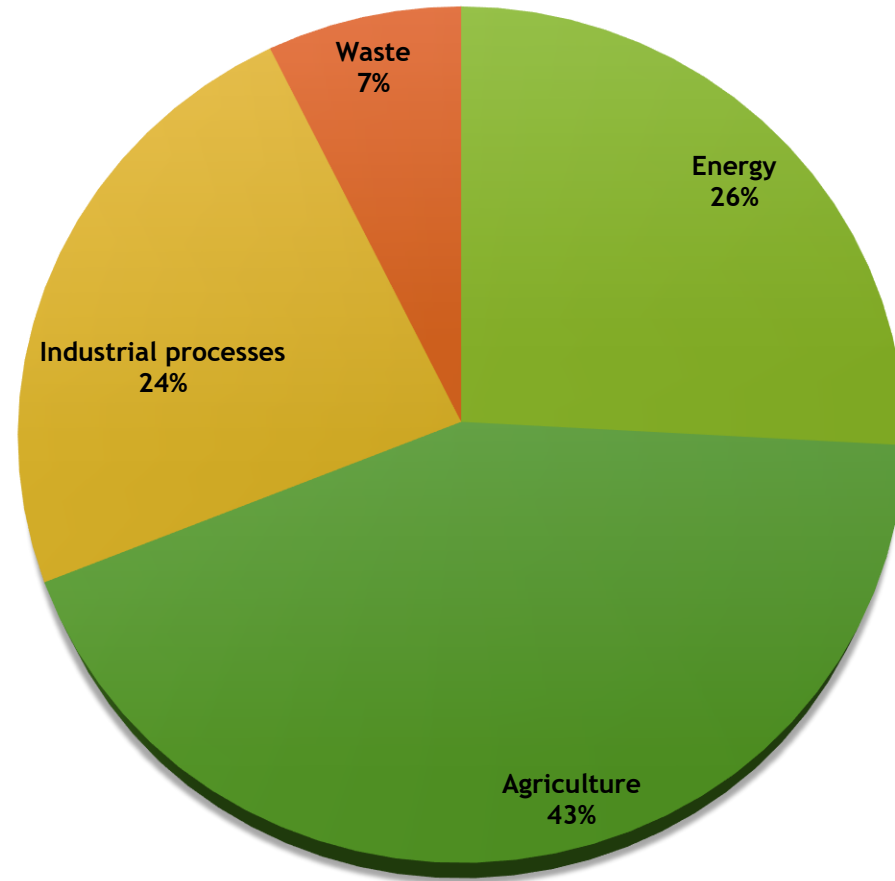


# GHG Emissions & Inventory

- ▶ Industrial and transport sectors account for highest emission growth in the country (from 0.24 million tons of CO<sub>2</sub> eq in 2000 to 0.6 million tons in 2013)

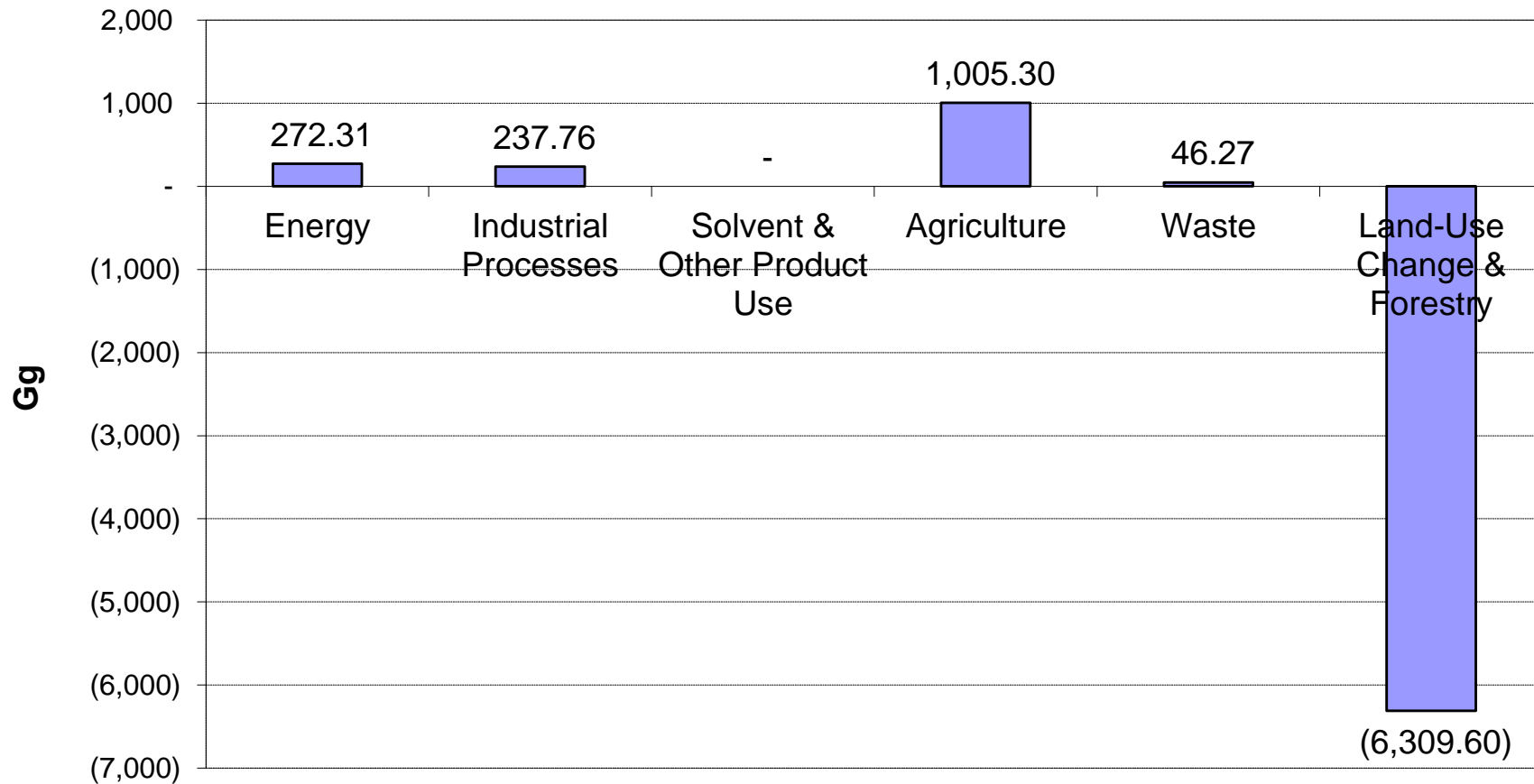


# Percentage contribution by Sectors (CO2)

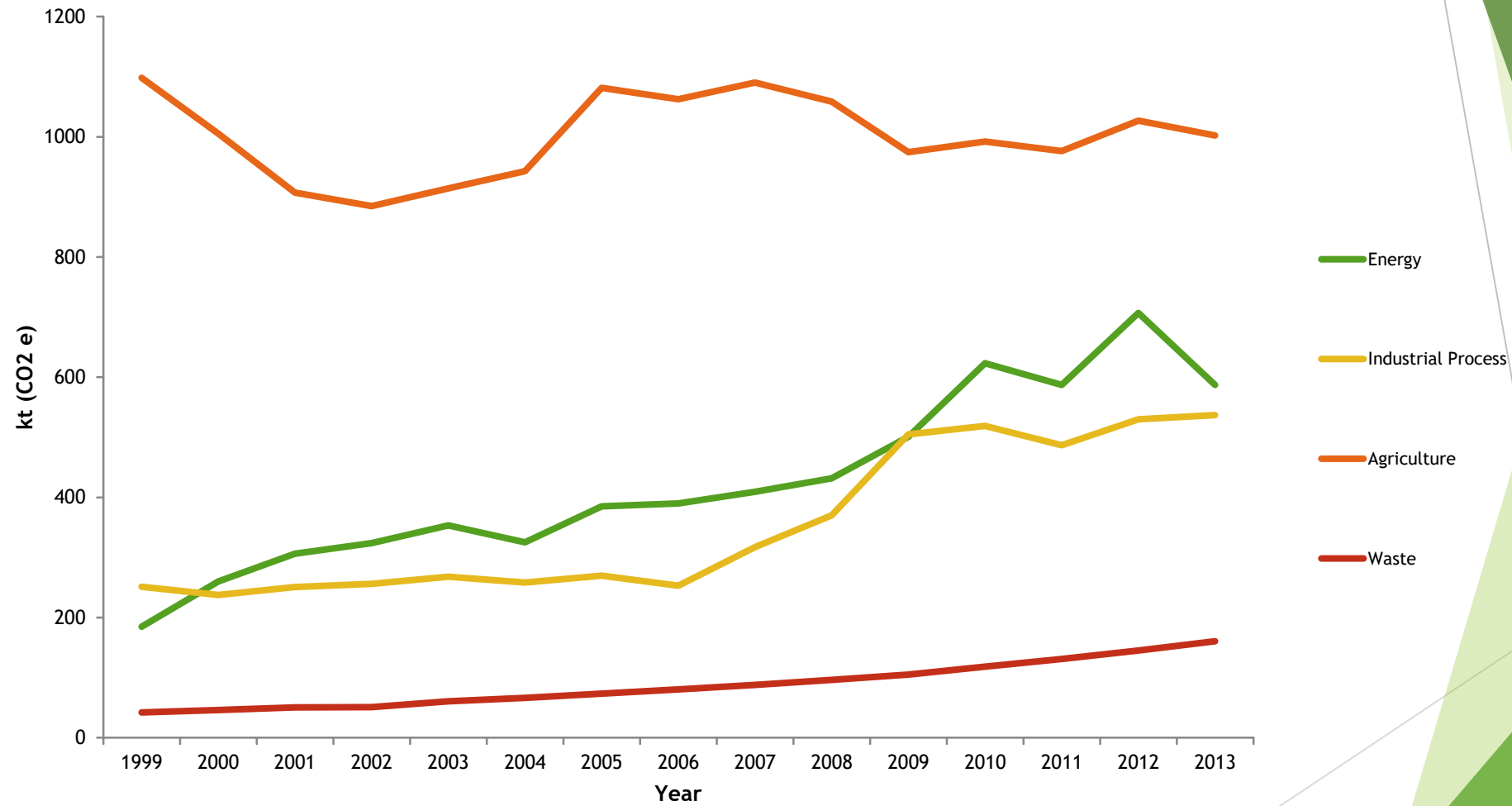


# GHG Emissions in CO<sub>2</sub>equivalent (2000) including LUCF

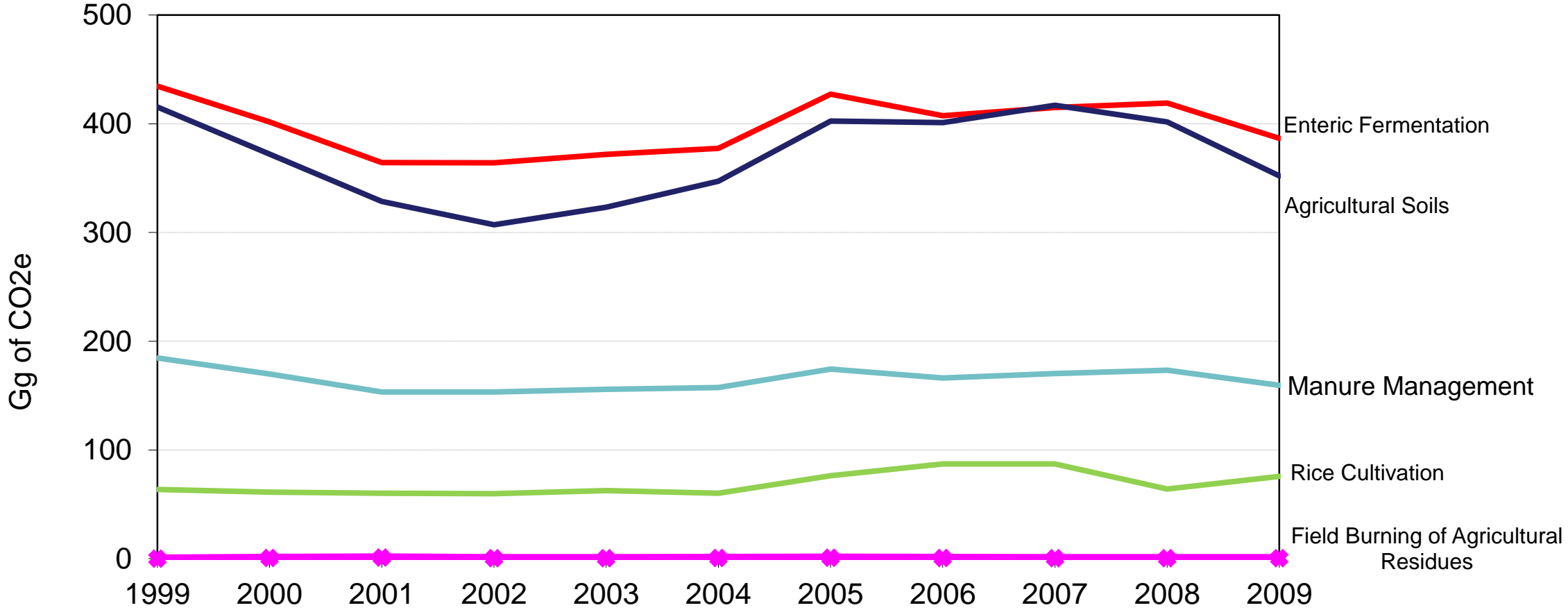
**GHG Emissions CO<sub>2</sub> Equivalent in 2000 (with LUCF)**



# Emission trend by source till 2013



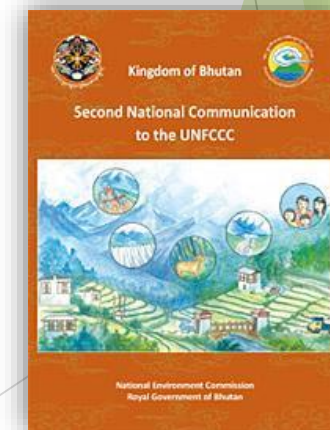
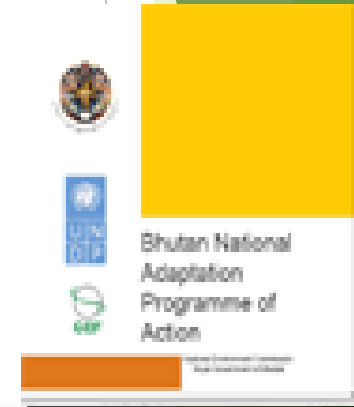
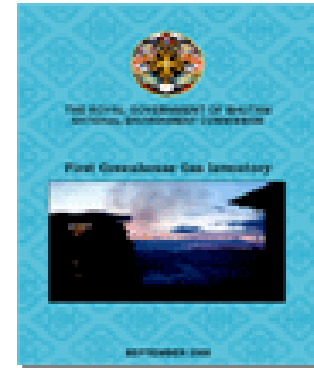
# Emission Trends in Agriculture



- ▶ Although emission from agriculture sector still has the highest emission share, it has remained constant over the past decades and is considered the “survival” emission for food production.
- ▶ During the period 2000-2013, emissions from the energy sector increased by 191.6% from 0.270 million tons of CO<sub>2</sub>e in 2000 to 0.79million tons of CO<sub>2</sub>e in 2013. During the same period, emissions from industrial processes increased by 154.3% from 0.24 million tons of CO<sub>2</sub>e to 0.6 million tons of CO<sub>2</sub>e. Emission from waste management also increased by 247.54% from 0.047 million tons of CO<sub>2</sub>e to 0.16 million tons CO<sub>2</sub>e.
- ▶ However, at the current juncture of the country’s development as a least developed country, emissions from industry and transport sector are developments seen as imperatives to fight poverty and enhance the economic security of the country

# Obligations under UNFCCC

- ▶ Initial National Communication from Bhutan
  - ✓ Submitted to UNFCCC in 2000
- ▶ National Adaptation Programme of Action
  - ✓ Submitted in 2006, and revised priority submitted in 2012 as NAPA II
- ▶ Second National Communication
  - ✓ 4 year duration from Nov 2007, Submitted in COP17 (Dec 2011)
- ▶ Third National Communication and BUR (on-going)





# Institutional Arrangement - TNC

- ▶ Project Coordinated by National Environment Commission Secretariat
- ▶ National Taskforces
  - ✓ GHG Inventory Taskforce (thematic working group members)
  - ✓ Multi-Sectoral Technical Committee for Climate Change (MSTCCC)
- ▶ Consultants hired for separate chapters guided by the taskforce and NECS.
- ▶ Review by task forces and MSTCCC.

# Data Collection process for TNC

- ▶ Sector specific taskforce assigned to collect activity data
- ▶ Data Producers awareness on activity data requirements
- ▶ Activity data collection form reviewed once every year.
- ▶ Online submission or data archival system to be instituted (Draft module)

# Activity data archival system module (draft)

► Eg. Iron & Steel

**Worksheet**

Worksheet

**Sector:** Energy  
**Category:** Manufacturing Industries and Construction  
**SubCategory:** Iron and Steel  
**Year:** 2018

Energy Consumption									
Organization/Firm...	Fuel Type	Fuel	Consumption A	Units	Conversion Factor B	Consumption (Gg) C=(A*B)	NCV (Tj/Gg) D	Consumption (Tj) E=C*D	Consumption (ToE) F=E*23.885
	(All Fuels)	Crude Oil		m3					

Import Export

List of supporting documents

Data Entry Information

Provider's Name <Please Select>

Organization & Title <Not Set>




# Cement production(draft module)

**Sector:** Industrial Processes and Product Use

**Category:** Mineral Industry

**SubCategory:** Cement Production

**Year:** 2018

Organization/Firm/Industry	A			
	Quantity of Cement Produced (t)			
				

Import

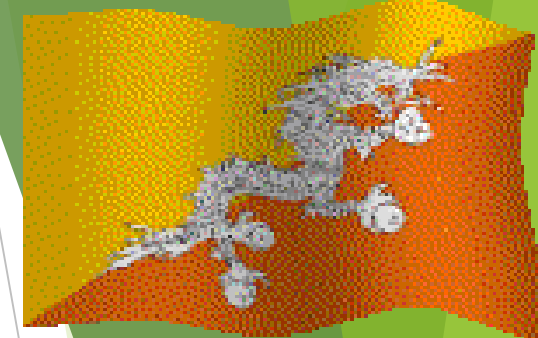
Export

of supporting documents

Data Entry Information

Provider's Name <Please Select>

Organization & Title <Not Set>



**THANK YOU,  
TASHI DELEK!!**

