# Nepal's Experience with NDC 3.0 and BTR1 Preparation

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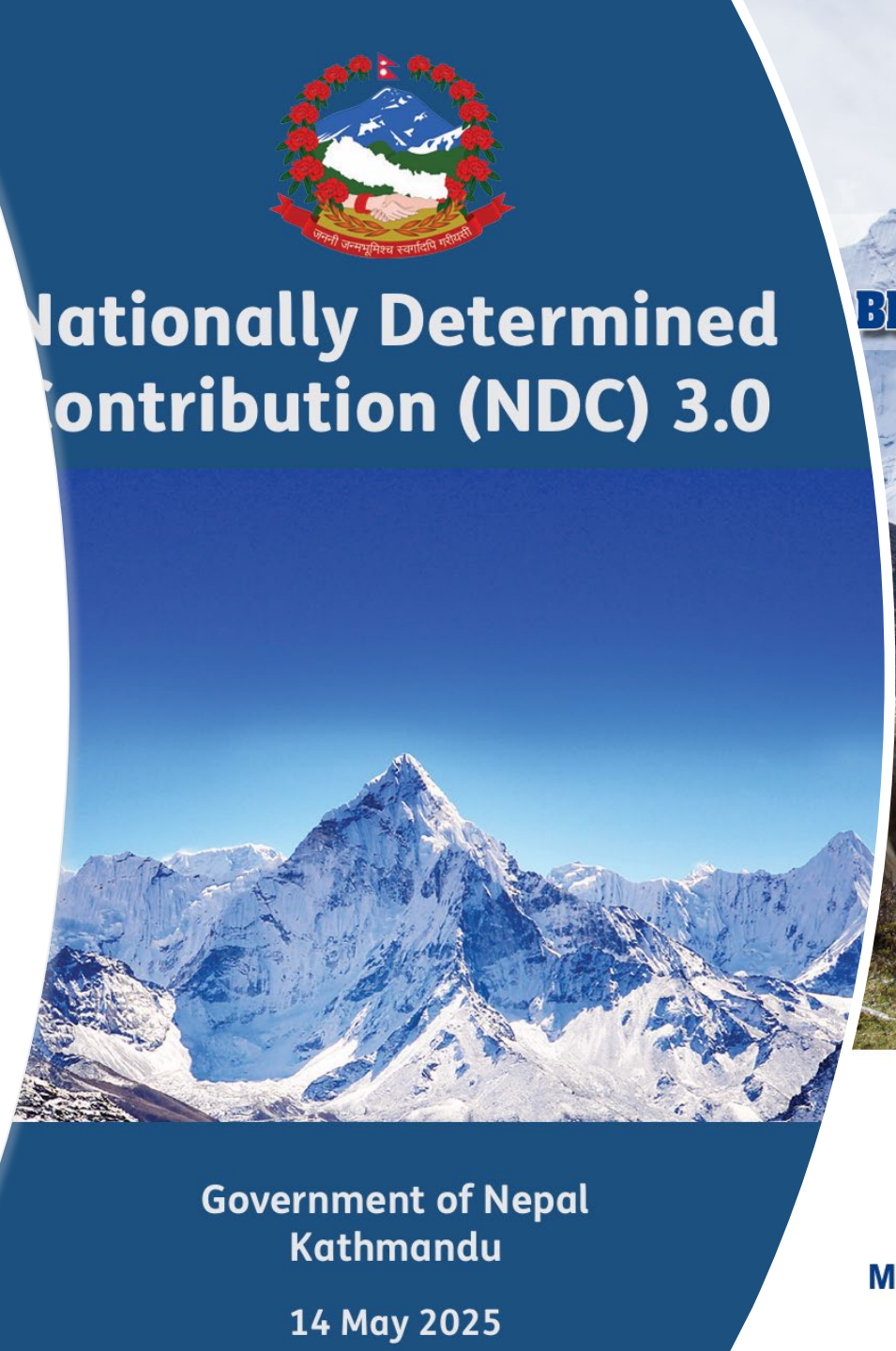



# Outline

National Circumstances

Institutional Arrangements

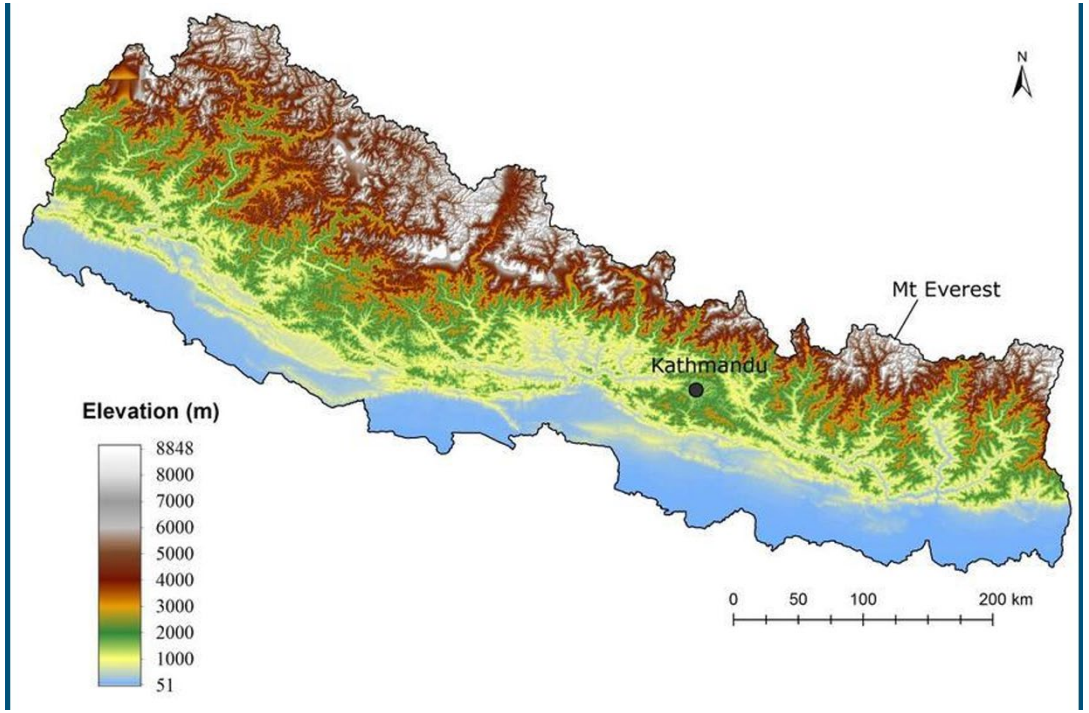
GHG Highlights

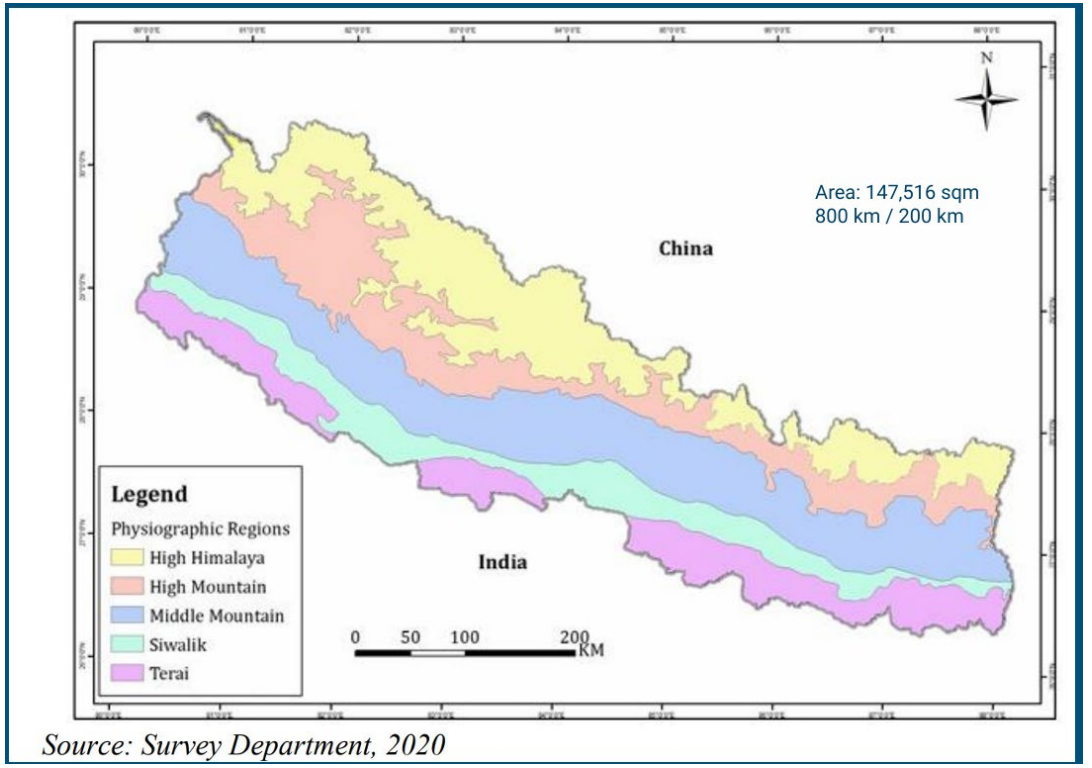
Nepal’s Ambition for 2030 (NDC 3.0)

Challenges Faced

Support Received

# National Circumstances



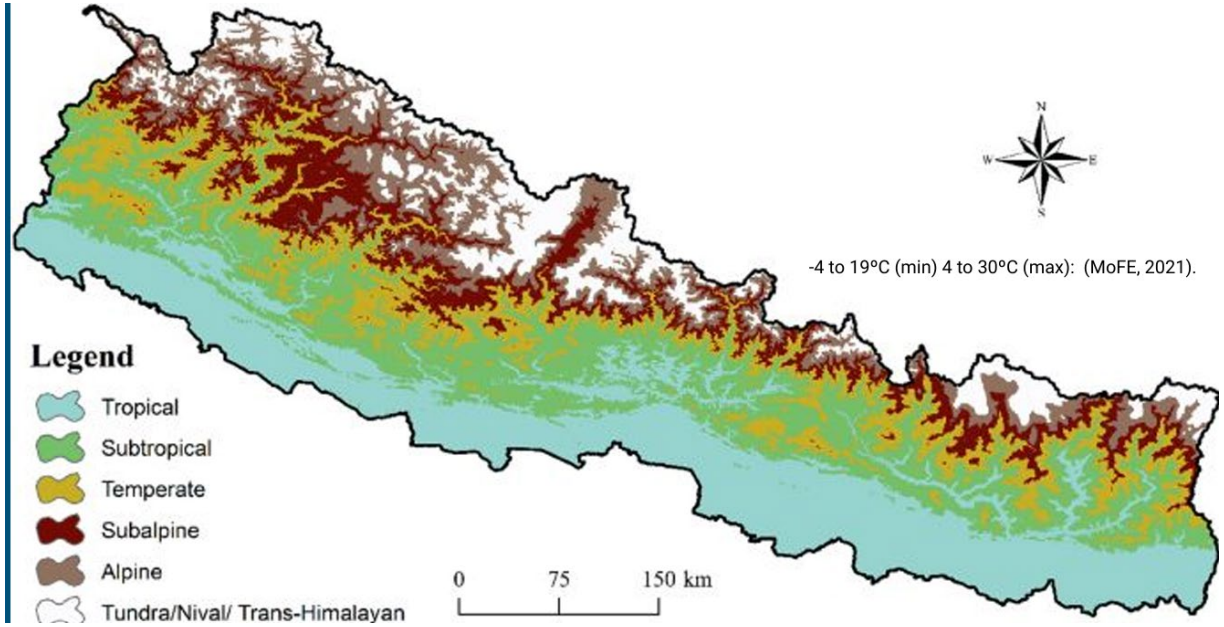

*Source: Survey Department, 2020*

# National Circumstances

**Climate Induced Extreme Events, and Disaster Incidents (2011-2023)**

| Incidents | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Avalanche | | 1 | 6 | 2 | 3 | | 1 | | 6 | | 3 | 3 | 8 |
| Fire | 495 | 1121 | 1021 | 957 | 625 | 1524 | 1497 | 2475 | 2867 | 2129 | 2694 | 2600 | 2915 |
| Flood | 259 | 45 | 266 | 65 | 15 | 230 | 338 | 80 | 206 | 98 | 154 | 55 | 156 |
| Forest Fire | | | | | | | | | | 7 | 64 | 83 | 266 |
| Heavy Rainfall | 96 | 136 | 57 | 21 | 15 | 114 | 95 | 247 | 103 | 360 | 358 | 169 | 175 |
| Landslide | 126 | 102 | 97 | 75 | 62 | 234 | 163 | 320 | 449 | 493 | 337 | 327 | 486 |
| Thunderbolt | 120 | 210 | 213 | 177 | 148 | 206 | 188 | 244 | 383 | 305 | 208 | 264 | 261 |
| Wind storm | | | 10 | 15 | 17 | 28 | 57 | 196 | 186 | 79 | 44 | 118 | 122 |
| **Grand Total** | **1096** | **1615** | **1670** | **1312** | **885** | **2336** | **2339** | **3562** | **4200** | **3471** | **3862** | **3619** | **4389** |

*Source: (NDRRP, 2023)* Till October 2023*



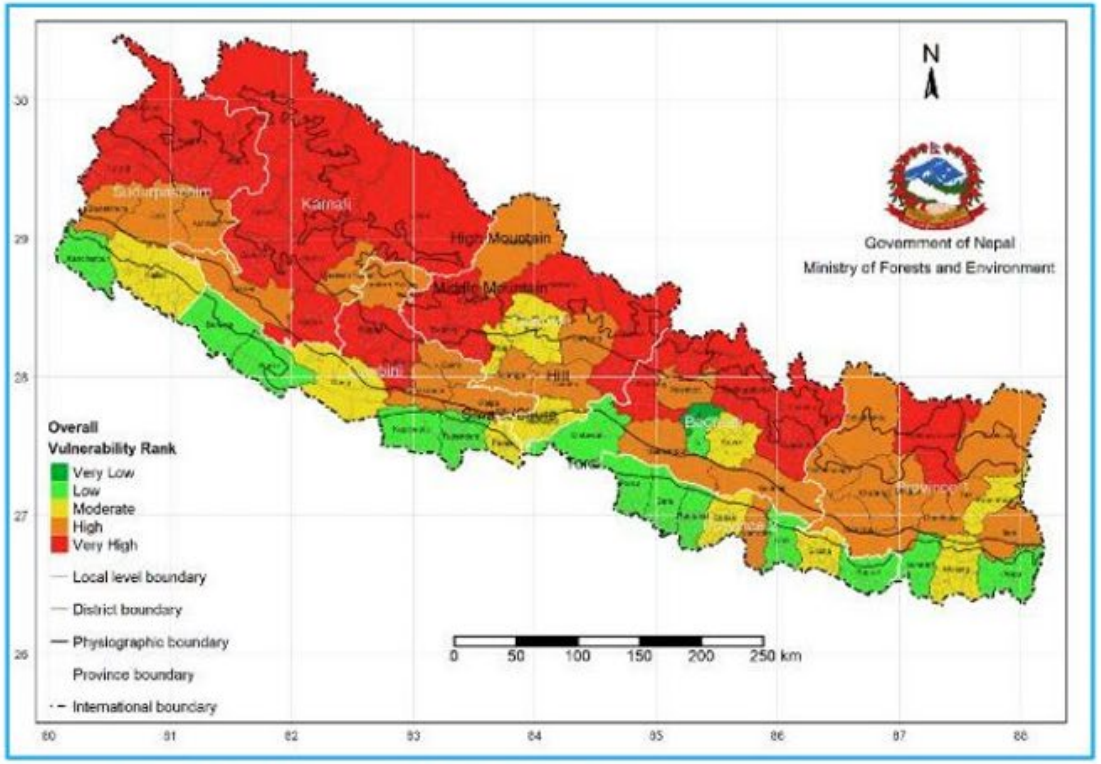
# National Circumstances

**Estimate Losses Due to the Extreme Events, and Disaster Incidents (2011-2023) in million (NRs.)**

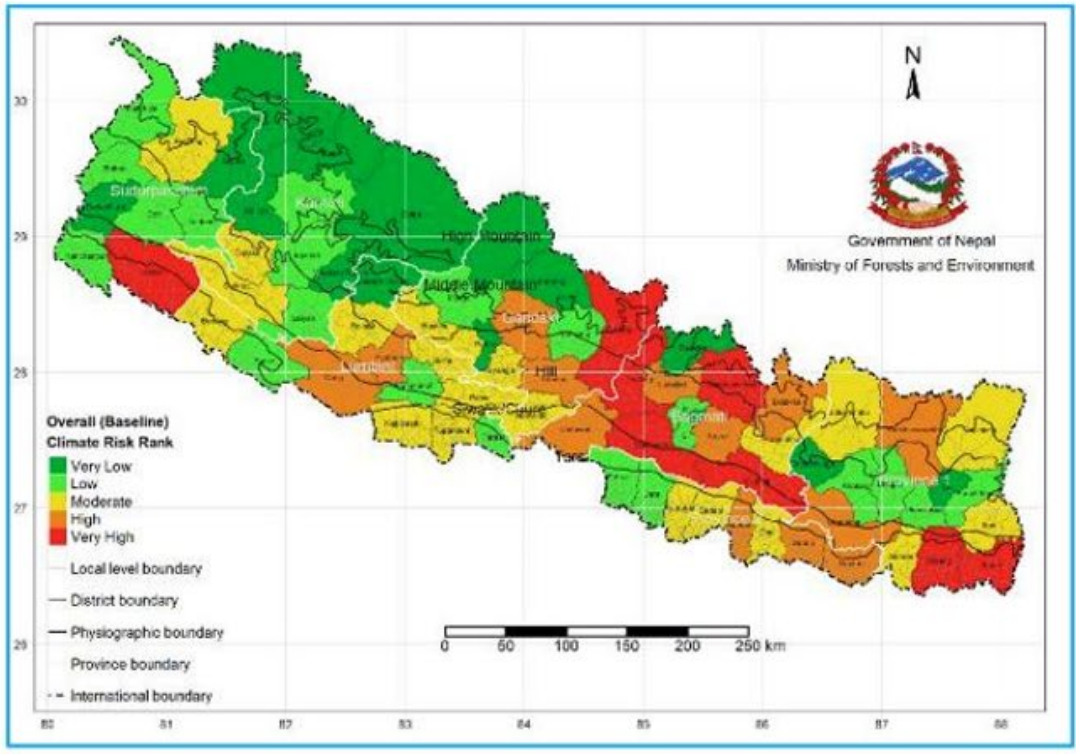
| Incidents | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Avalanche | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Fire | 400 | 1,208 | 1,854 | 1,712 | 920 | 1,924 | 2,358 | 4,064 | 3,070 | 1,556 | 2,231 | 2,578 | 1,859 |
| Flood | 512 | 21 | 20 | 14,918 | 17 | 31 | 26 | 35 | 1,063 | 49 | 115 | 15 | 261 |
| Forest Fire | - | - | - | - | - | - | - | - | - | 1 | 0 | 15 | 1 |
| Heavy Rainfall | 24 | 24 | 8 | 139 | 4 | 19 | 27 | 62 | 18 | 70 | 128 | 39 | 28 |
| Landslide | 46 | 21 | 169 | 24 | 1 | 810 | 62 | 130 | 405 | 51 | 35 | 88 | 57 |
| Thunderbolt | 4 | 4 | 3 | 10 | 1 | 3 | 9 | 6 | 12 | 9 | 18 | 9 | 9 |
| Wind storm | - | - | 2 | 12 | 0 | 25 | 13 | 38 | 77 | 14 | 7 | 53 | 170 |
| Grand Total | 986 | 1,277 | 2,057 | 16,815 | 943 | 2,812 | 2,496 | 4,335 | 4,646 | 1,750 | 2,534 | 2,796 | 2,385 |

*Source: (NDRRP, 2023)* Till October 2023*

# National Circumstances




a) Vulnerable District



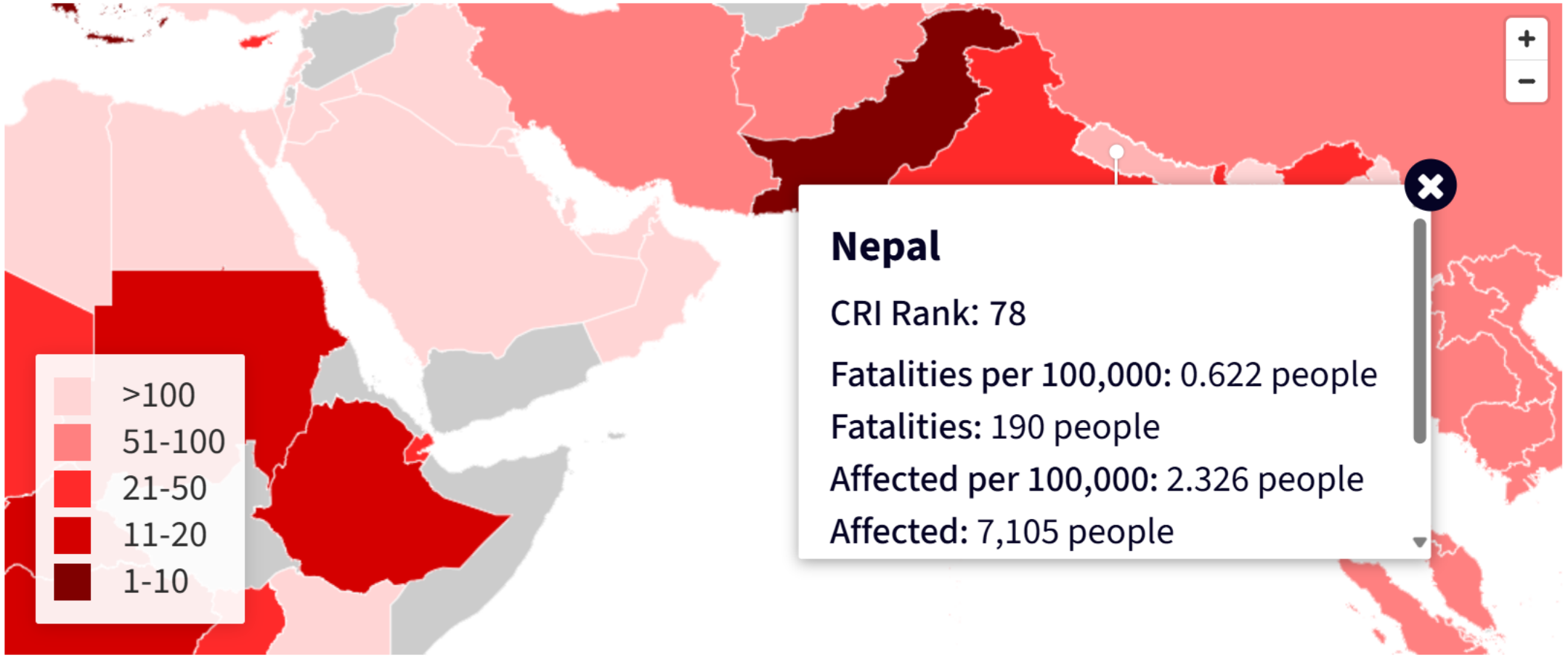

b) District on Risk

*Source: (MoFE, 2021)*

# National Circumstances

## Climate Risk Index: Most Affected Countries

2022 | 1993 – 2022

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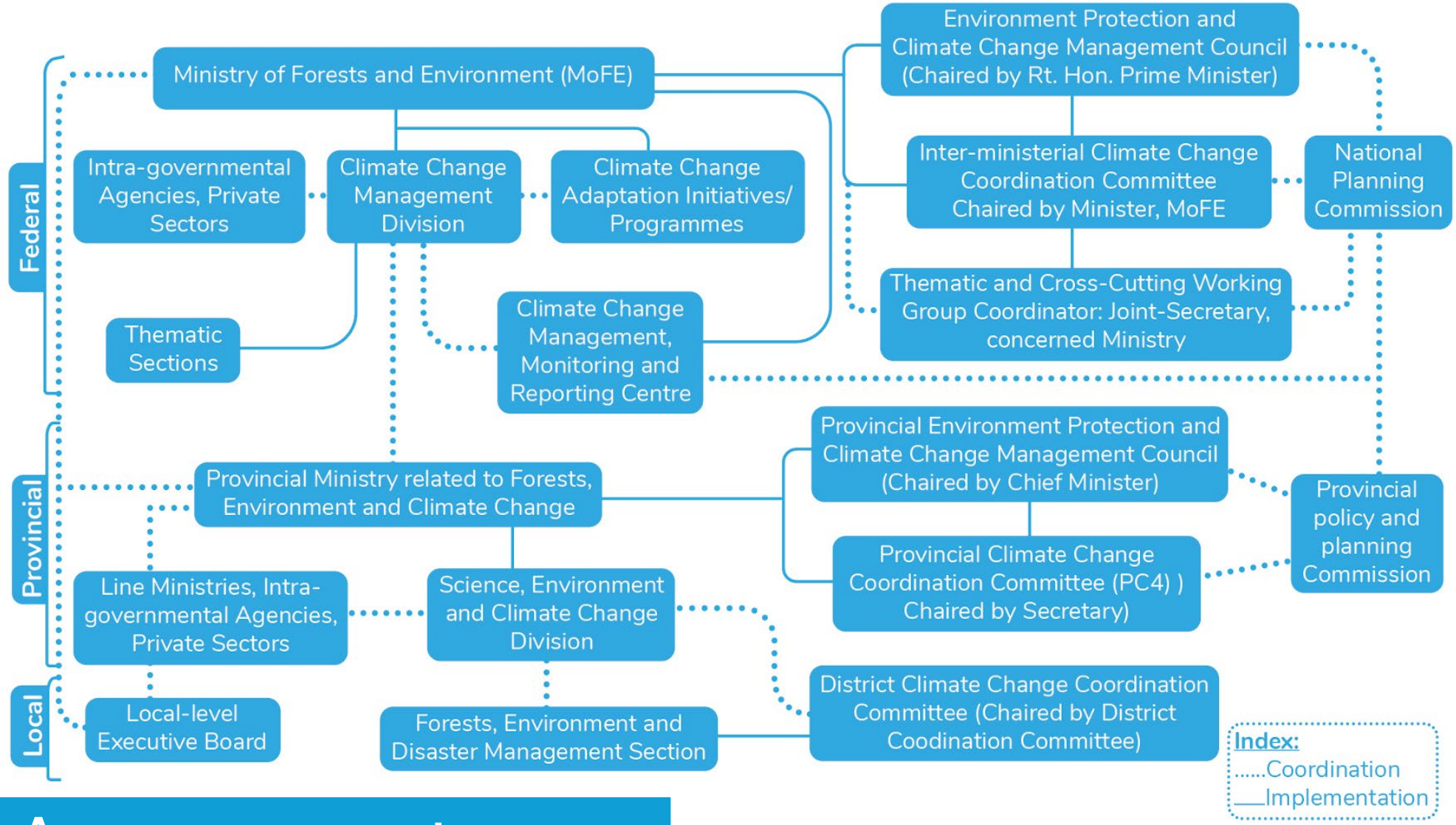
Source: Germanwatch 2025




# Institutional Arrangements

*(Source: GoN 2021-2050, NAP Report)*

Figure 6: Climate change coordination mechanisms in Nepal

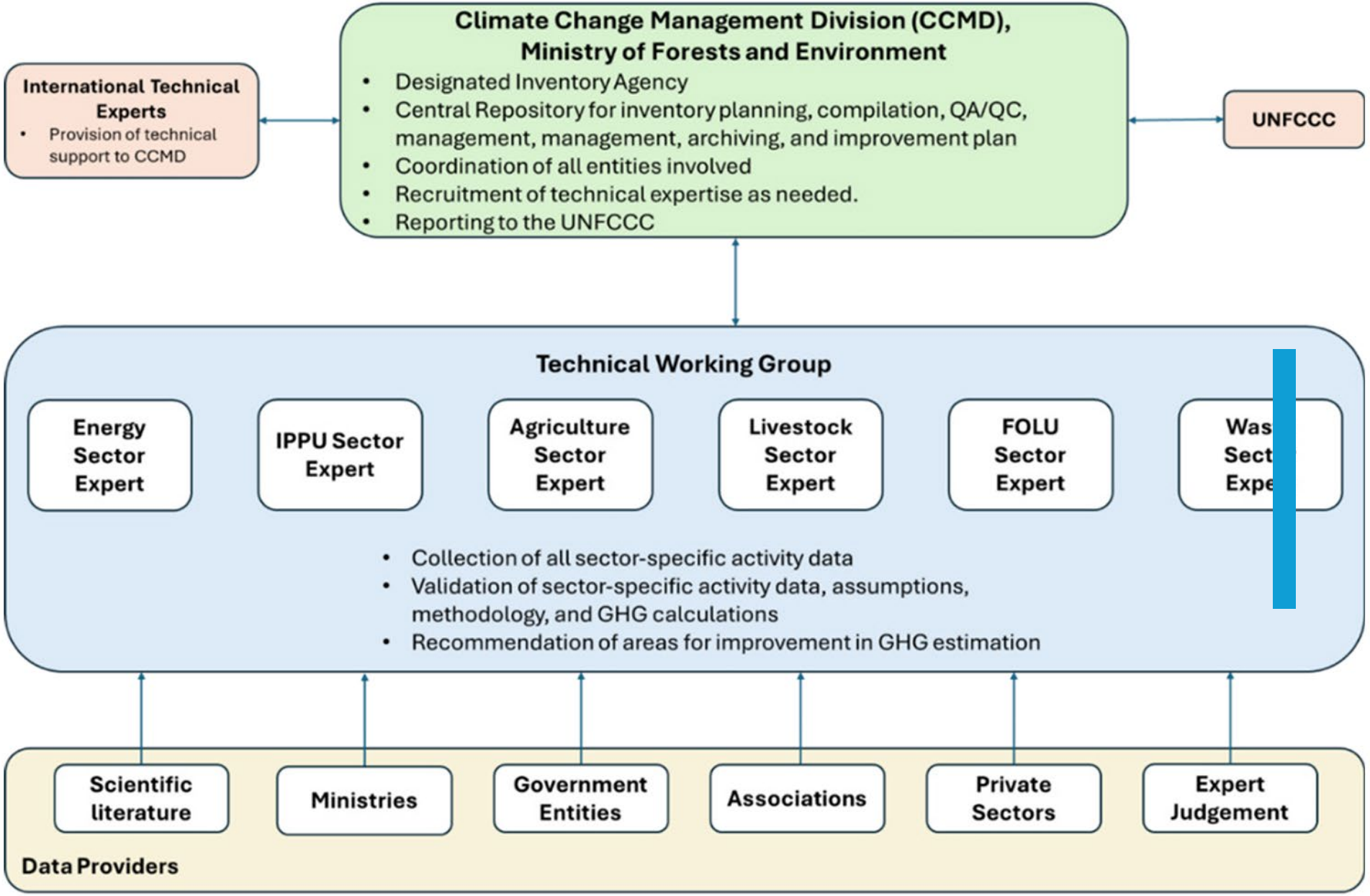



*Figure 7: Institutional arrangements for Nepal's national inventory preparation*

# Institutional Arrangements

# Greenhouse Gas Inventory

IPCC Guideline 2006 Applied

IPCC software used

Sector Covered

- AFOLU
- Energy
- IPPU
- Waste

Recalculation of Emission

Projection till 2050

# Green House Gas Inventory

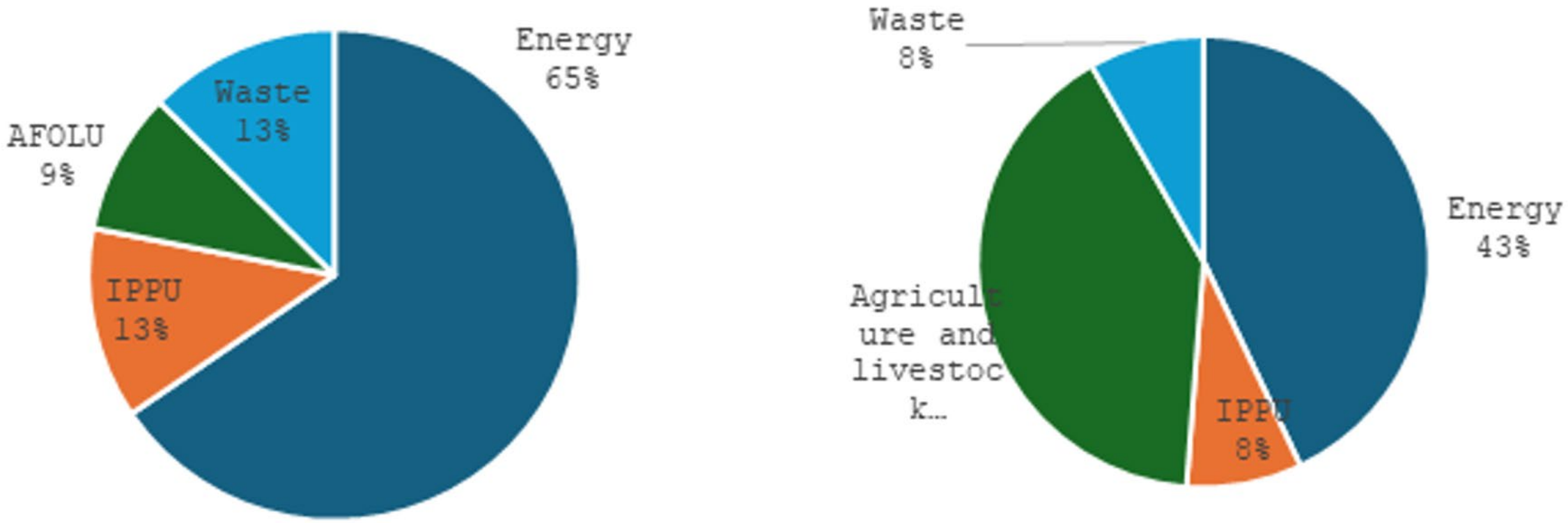
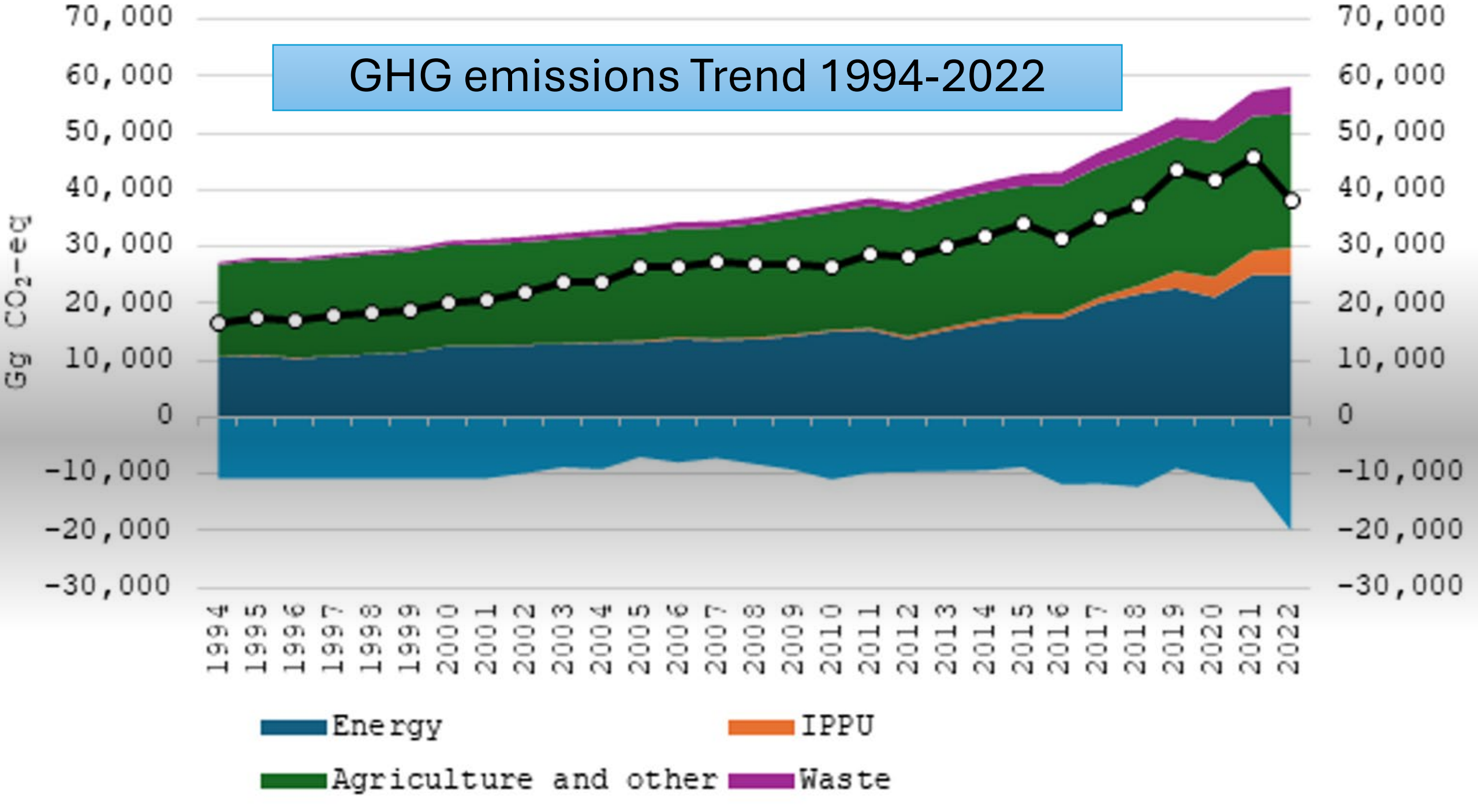
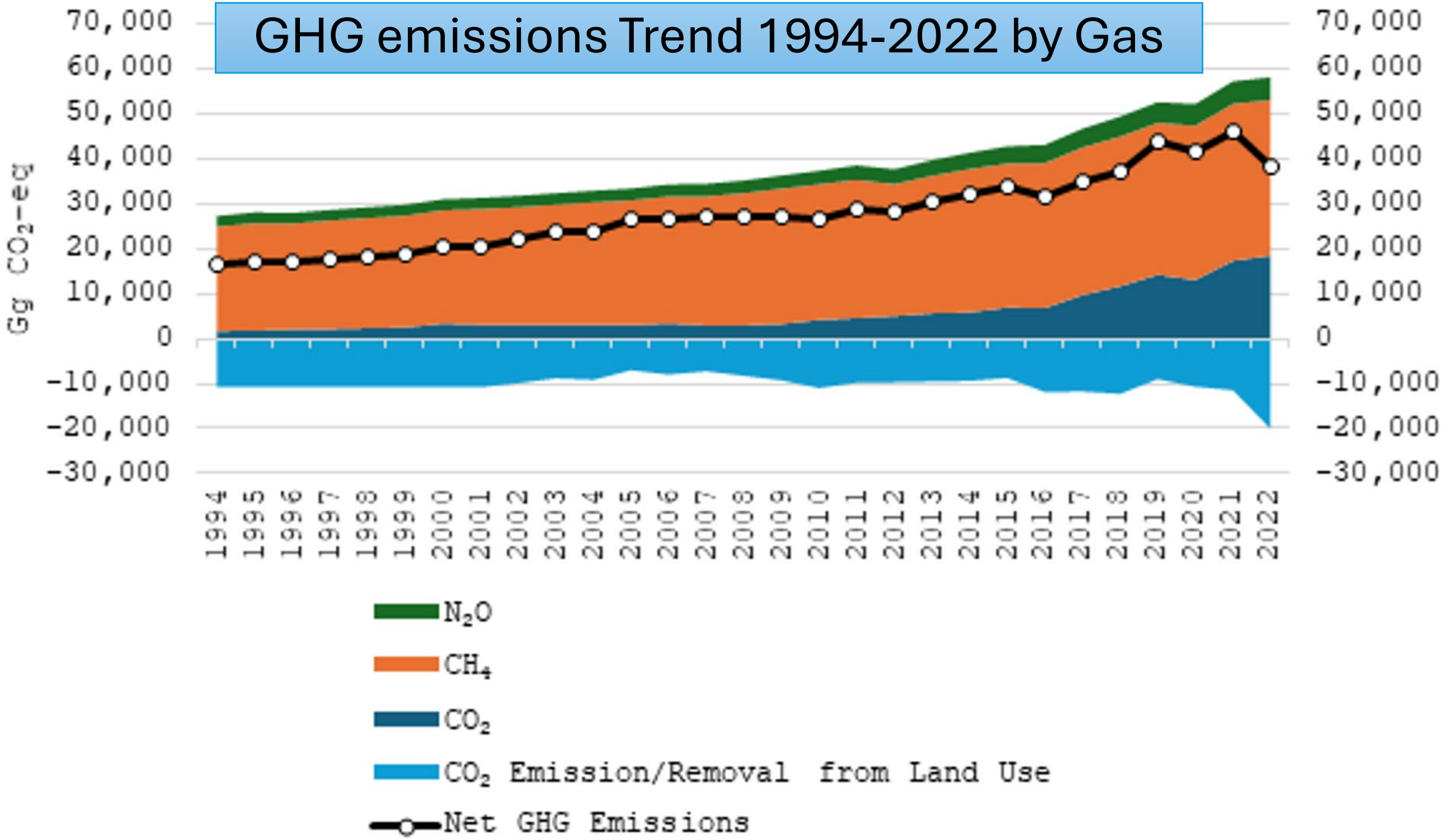



Figure : Shares of GHG emissions from different sectors in 2022 (BTR1)

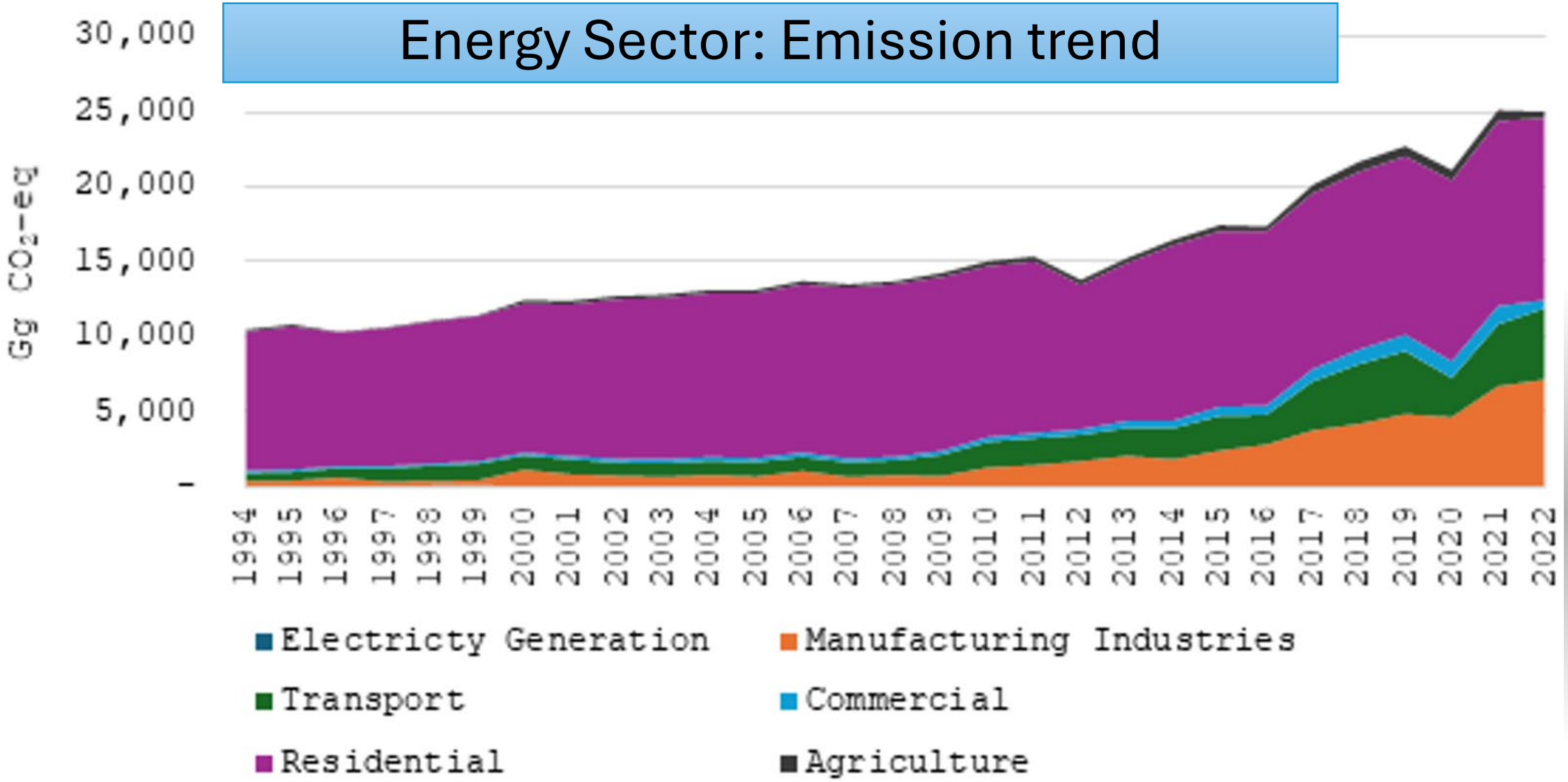
# GHG emissions Trend 1994-2022



# GHG emissions Trend 1994-2022 by Gas

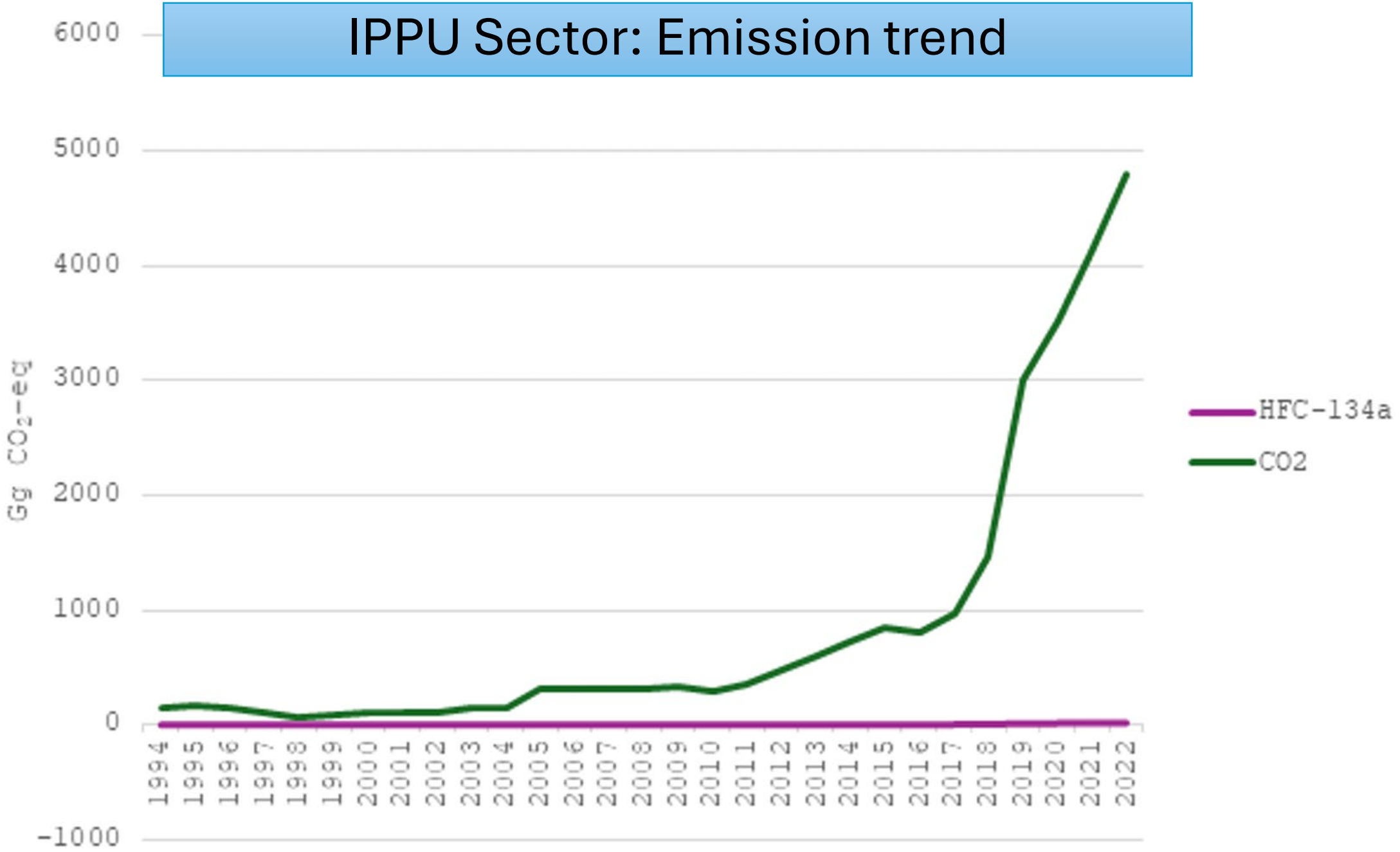


# Energy Sector: Emission trend

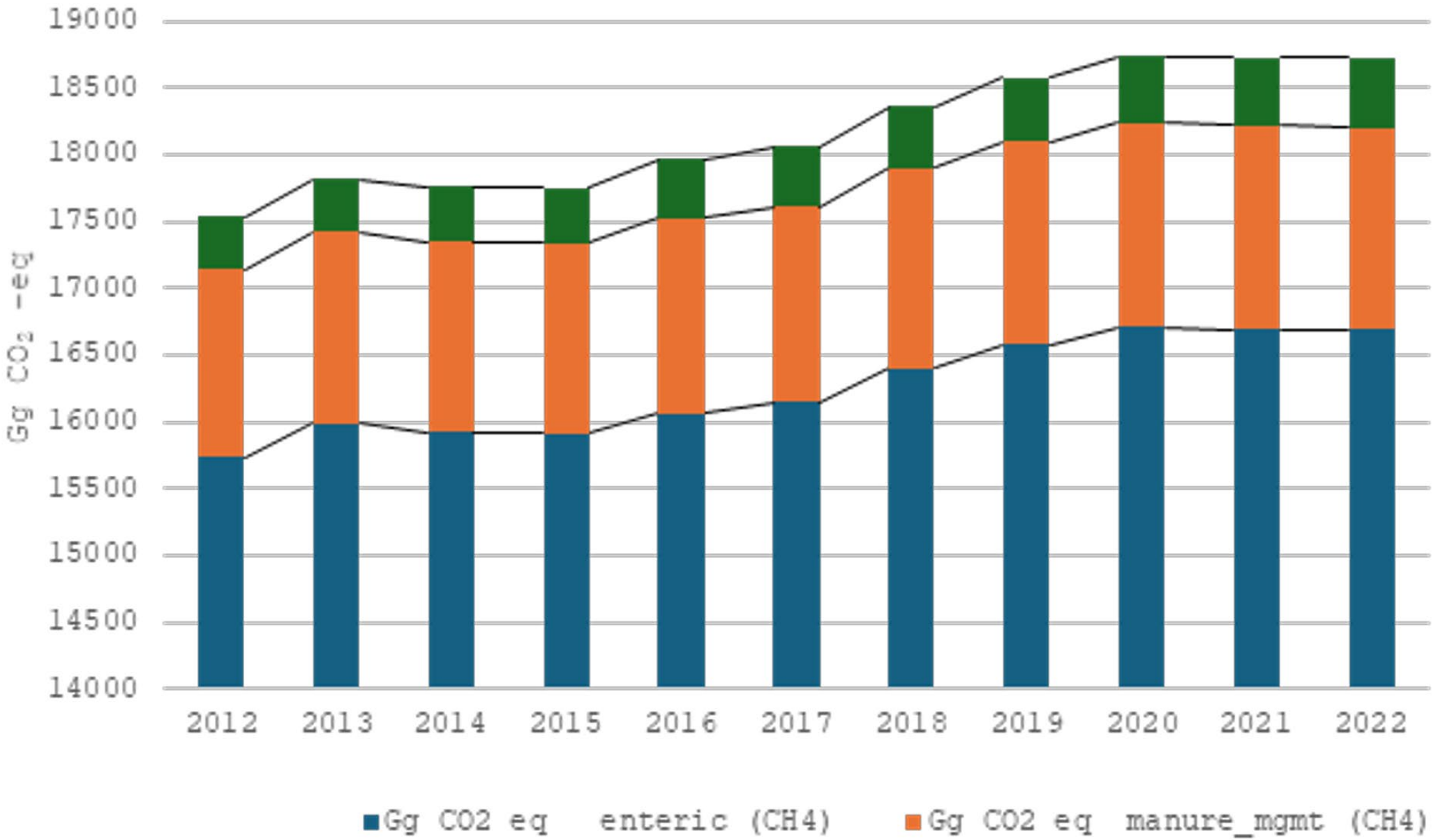



*GHG emissions in energy sector by sub sectors from 1994 to 2022*

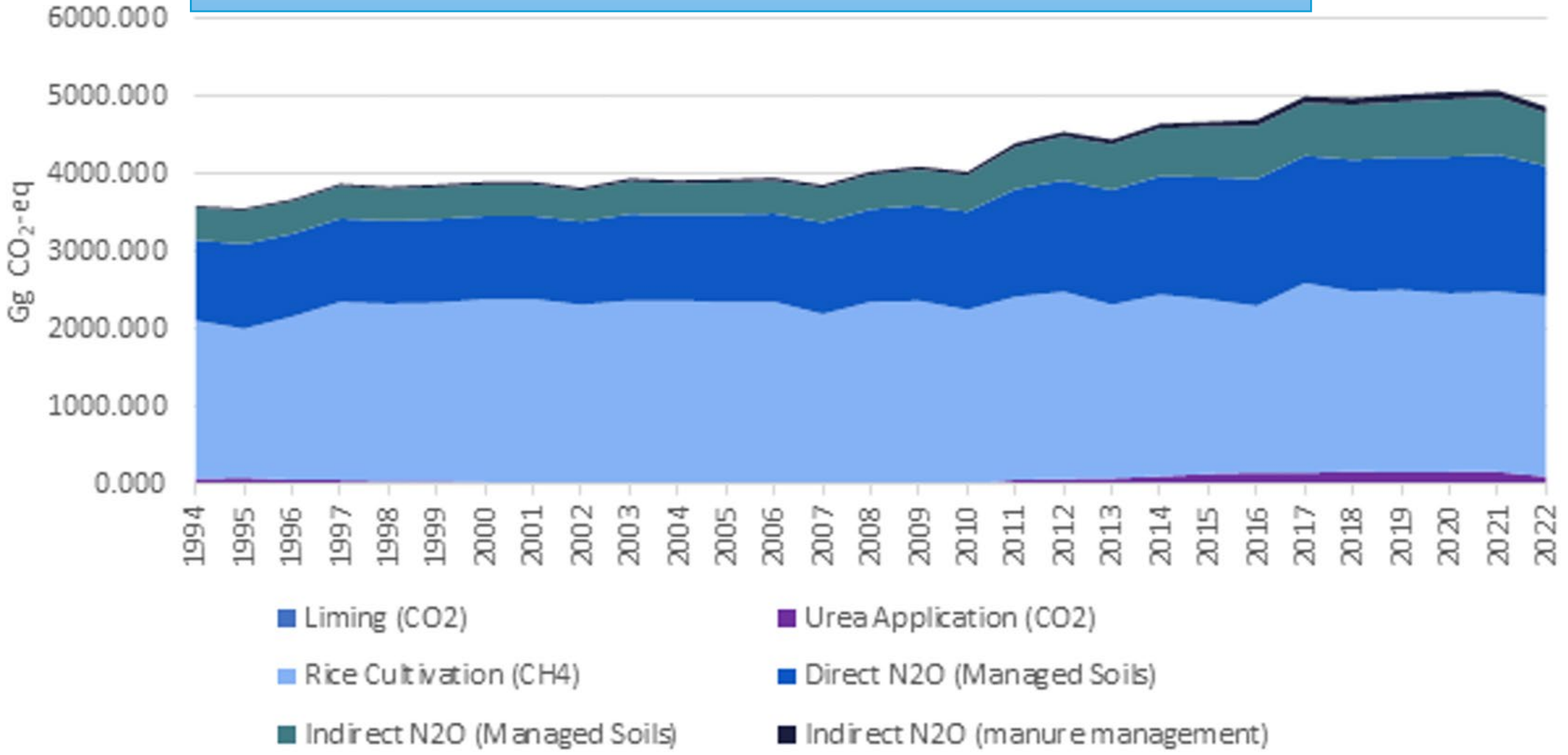
# IPPU Sector: Emission trend



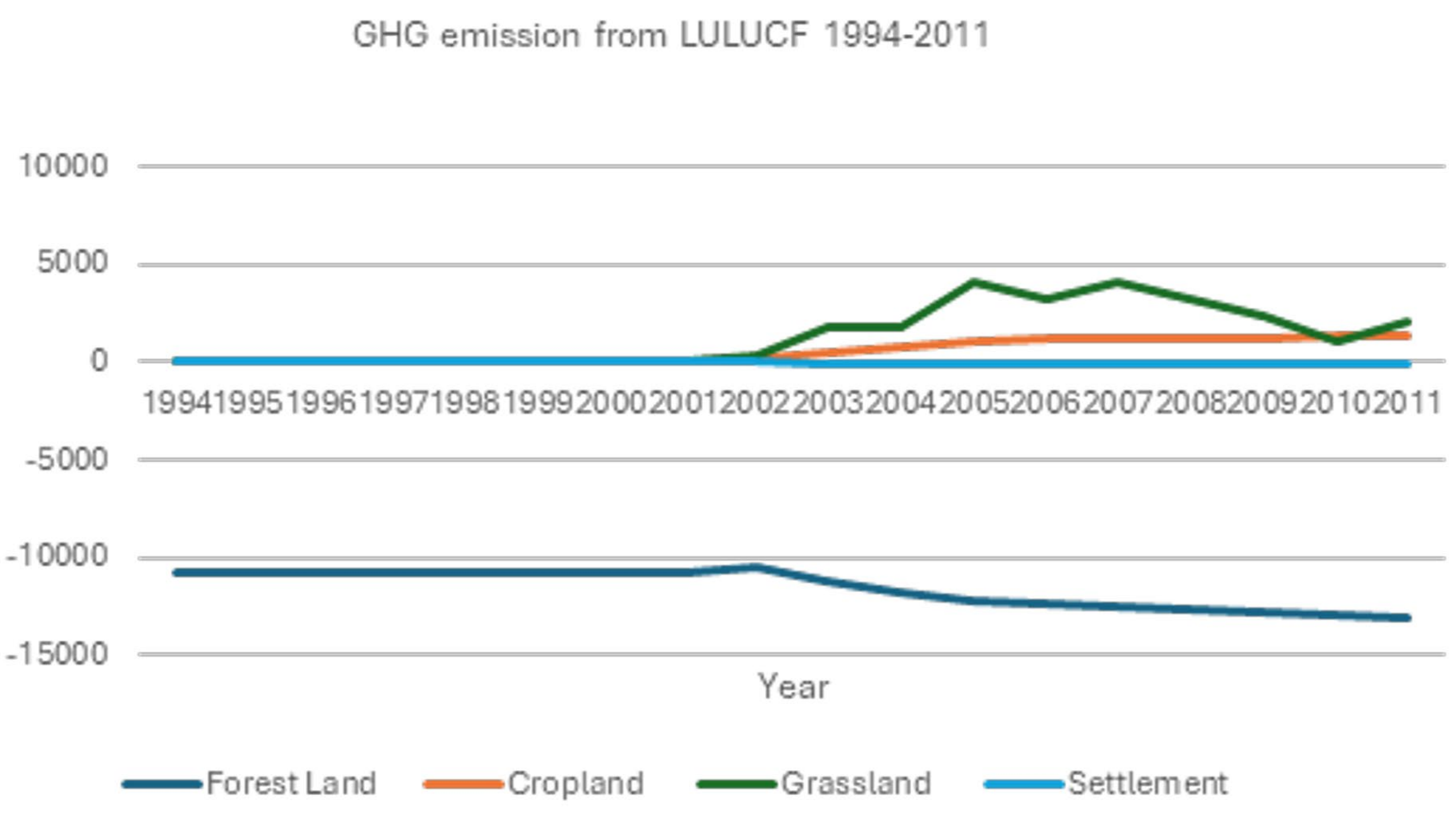
# Livestock Sector : Emission Trend



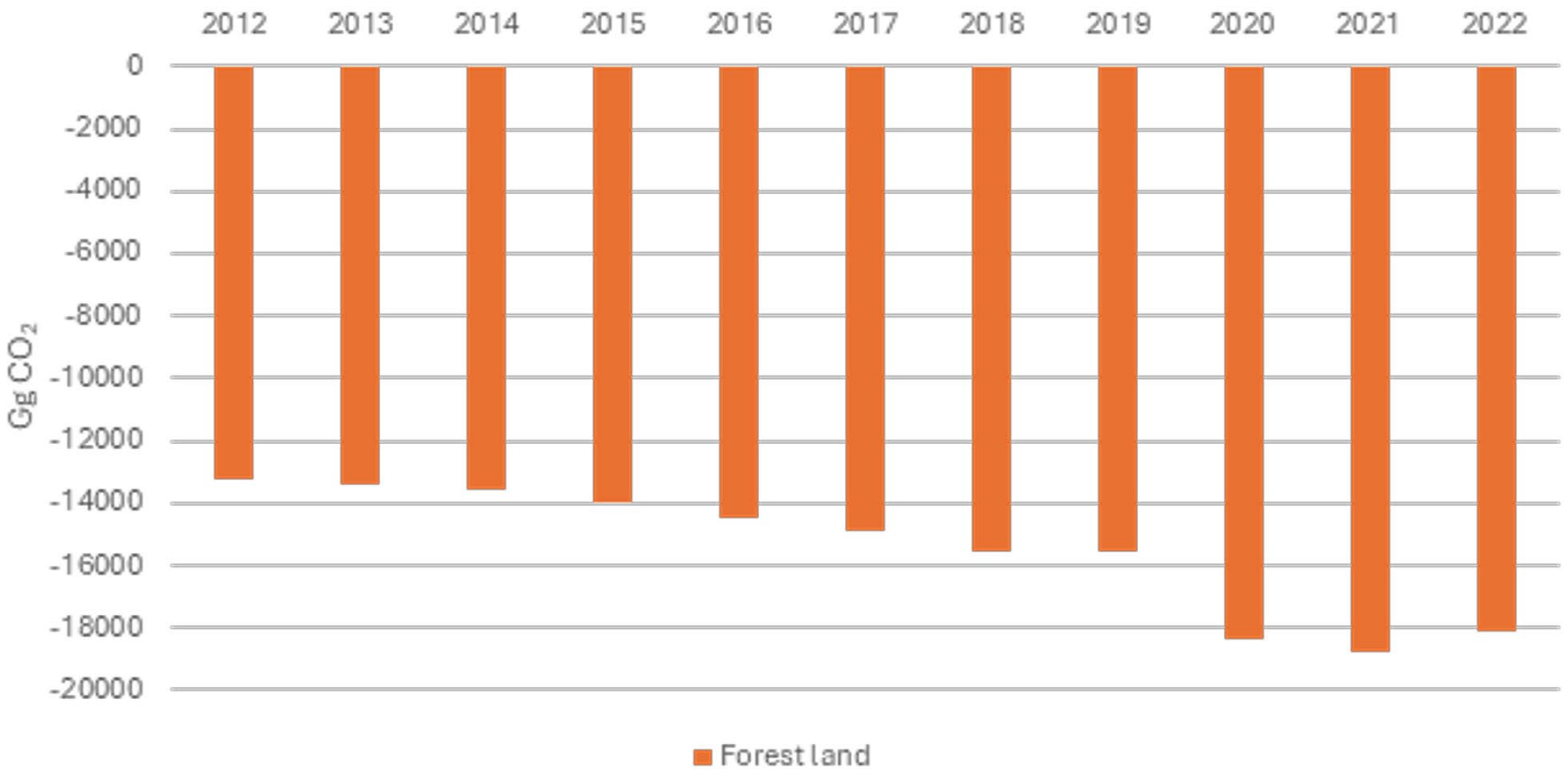
# Agriculture Sector : Emission Trend




*GHG emission trend in agriculture sector from year 1994-2022*

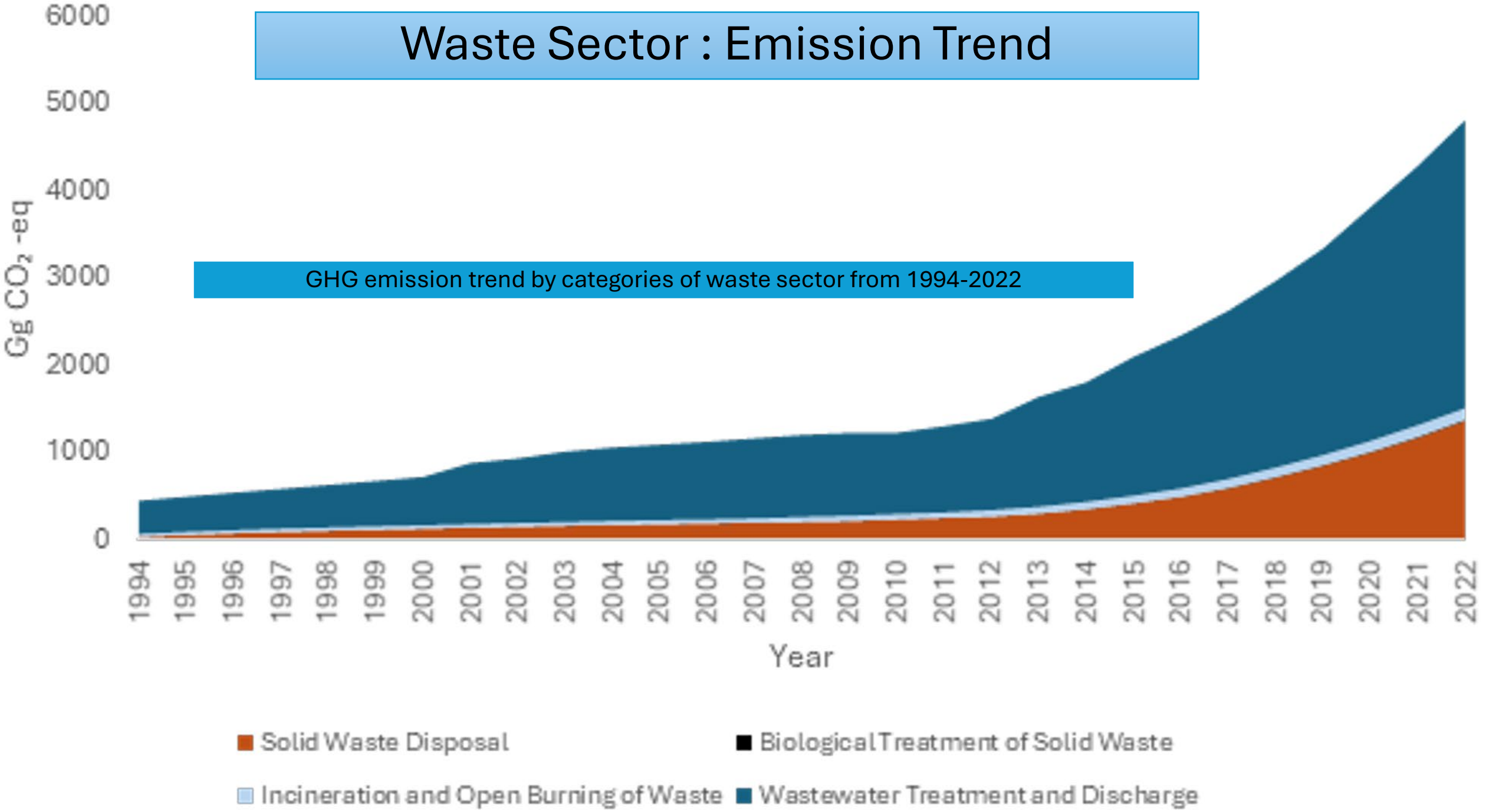

GHG emission from LULUCF 1994-2011
10000
5000
0
-5000
-10000
-15000
1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011
Year
Forest Land
Cropland
Grassland
Settlement

# LULUCF Sector : Emission Trend



# Waste Sector : Emission Trend

GHG emission trend by categories of waste sector from 1994-2022



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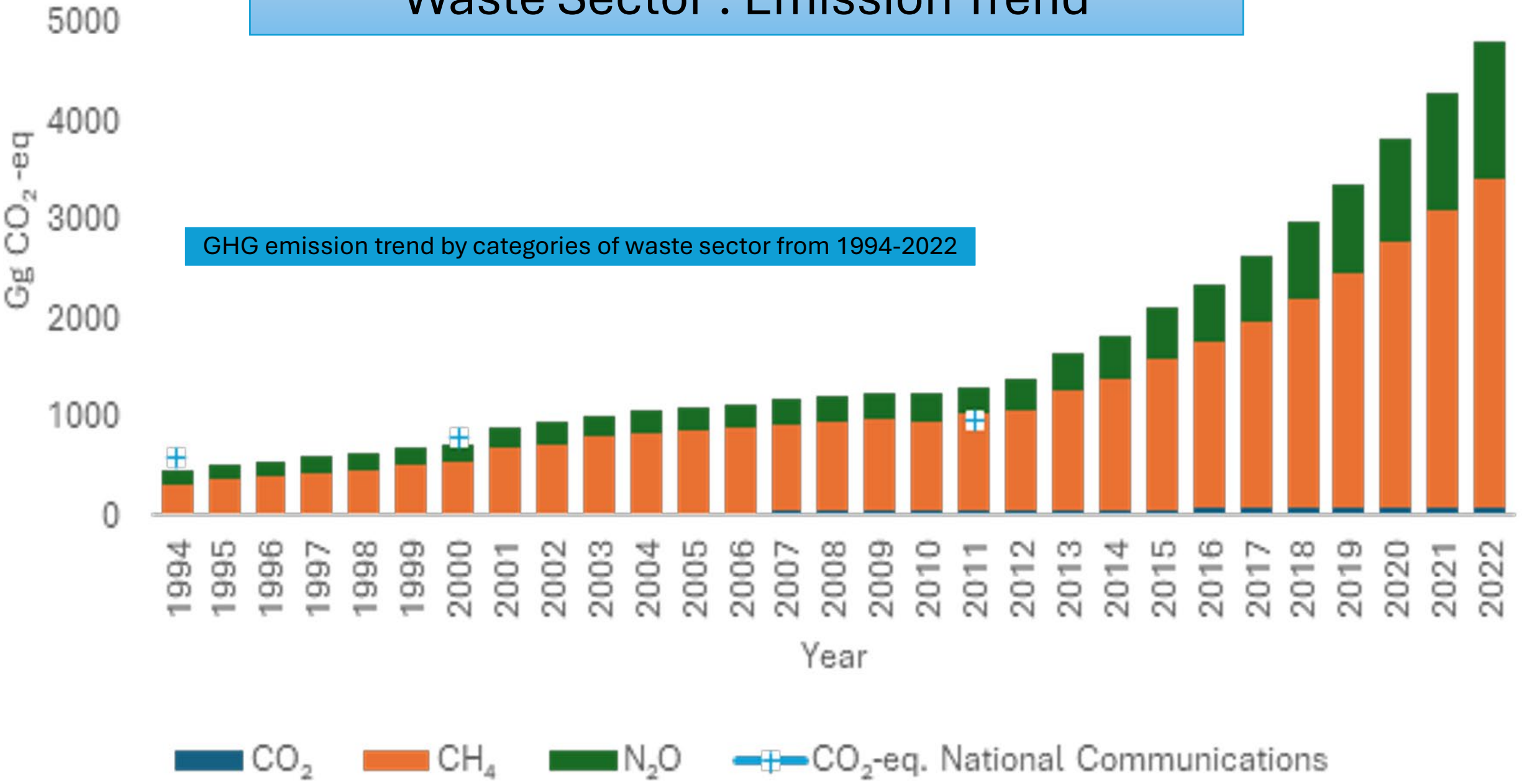
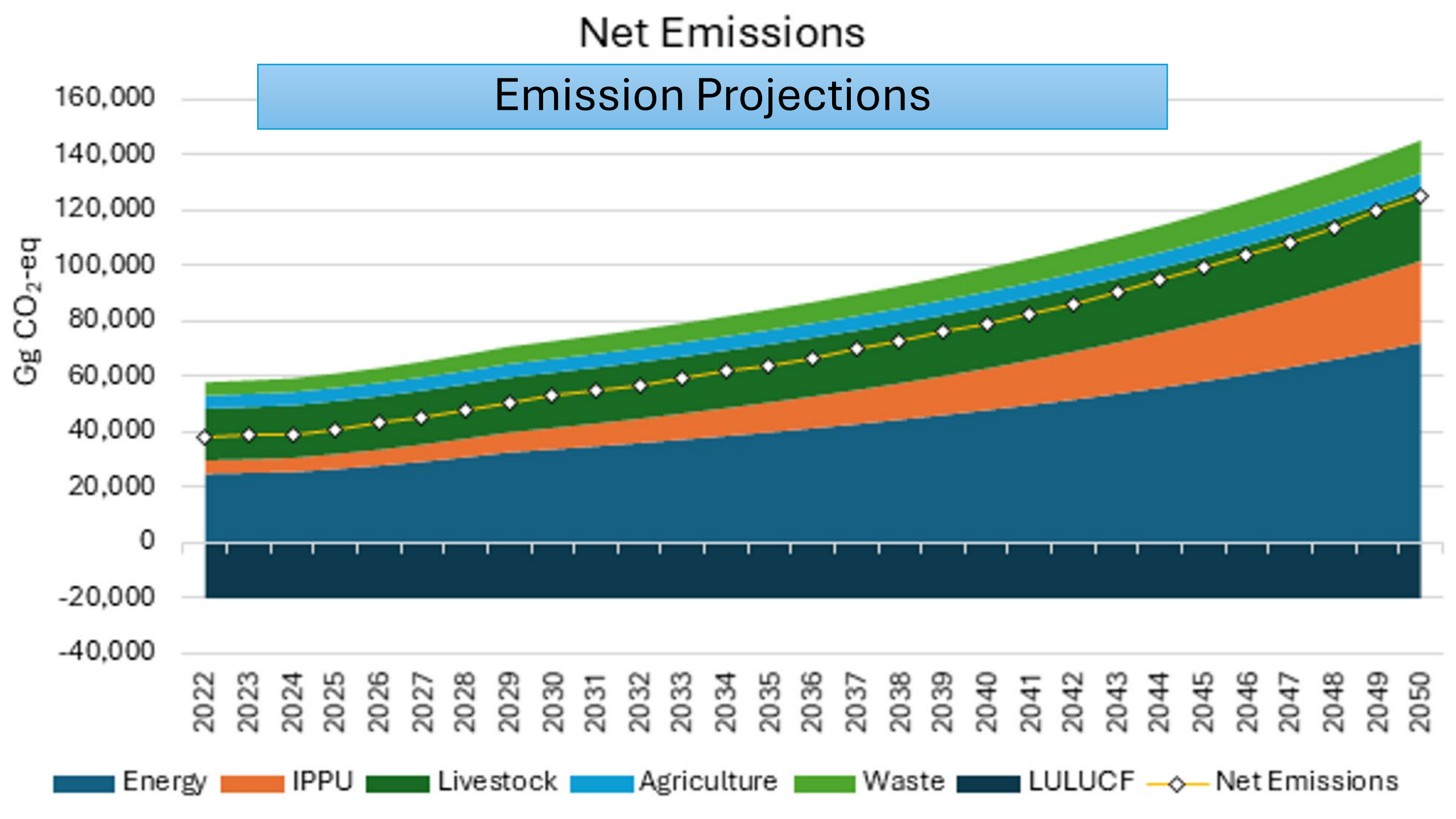
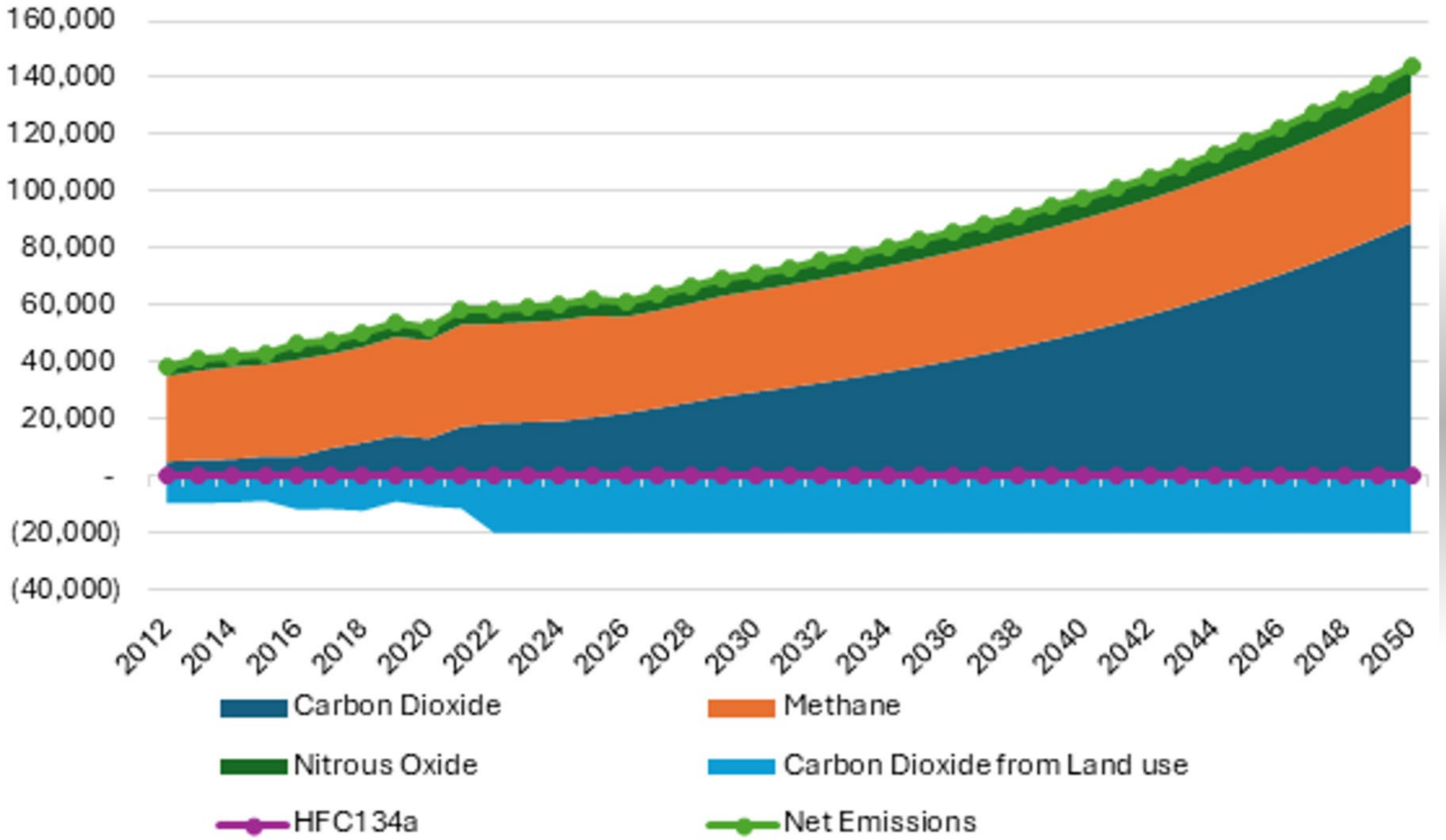
GHG emission trend by categories of waste sector from 1994-2022




Net Emissions
Emission Projections
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
-20,000
-40,000
Gg CO2-eq
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
Energy
IPPU
Livestock
Agriculture
Waste
LULUCF
Net Emissions

# Emission Projections by Gas till 2050



# Progress on Second NDC 2020

| Sector | Target/Indicator | Unit | Reference Value (2020) | Target Value (2025/2030) | Progress Made (2024/2025 data) |
|---|---|---|---|---|---|
| **Energy** | Clean Energy Generation | MW | 1400 | 15000 (by 2030) | 3450 (23%) till Jan 2025 [1] |
| | Share of Clean Energy in Total Energy Demand | % | N/A | 15% (by 2030) | 10.33% [1] |
| **Transport** | Electric Vehicle Sales (Private) | % | N/A | 25% (2025), 90% (2030) | 12.38% of imported in FY 2022/23 [1] |
| | Electric Vehicle Sales (Public) | % | N/A | 20% (2025), 60% (2030) | 29% (met 2025 target) in FY 2022/23 [1] |
| | Electric Rail Network | KM | N/A | 200 (by 2030) | 112 km track laid, 52 km in operation [1] |
| **Residential Cooking & Biogas** | Households using Electric Stoves (primary mode) | % | 5 | 25 (by 2030) | Data on primary use not available [1] |
| | Improved Cookstoves (ICS) installed | Numbers | N/A | 500,000 (by 2025) | 1,423,242 efficient mud cook stoves installed [1] |
| | Household Biogas Plants installed | Numbers | N/A | 200,000 (by 2025) | 21,806 additional by July 2023 [1] |
| | Large-Scale Biogas Plants installed | Numbers | N/A | 500 (by 2025) | 357 (71%) till July 2023 [1] |
| **Forestry** | Forest Cover | % | 44.74 | 45 (by 2030) | 46.08% (exceeded target) [1] |
| **Waste Management** | Wastewater treated per day | Liters/day | 2.1% | 380 million (by 2025) | 50 million [1] |
| | Faecal Sludge managed per year | cubic meters/year | <1% | 60,000 (by 2025) | 250 (nascent stage) [1] |
| **Agriculture** | Soil Organic Matter Content | % | 2 | 3.95 (by 2030) | Progress emerging [1] |
| | Mulberry & Fruit Orchard Areas | Ha | 1,000,000 | 6000 (by 2030) | Progress emerging [1] |
| | Improved Cattle Sheds | Number | 23 | 500,000 (by 2030) | Progress emerging [1] |
| | Organic Fertilizer Production Plants | Number | N/A | 100 (by 2030) | Progress emerging [1] |

# NDC 3.0 Major Mitigation Targets

## Energy Generation & Supply:

- Expand renewable electricity generation capacity to **14,031 MW by 2030** and **28,500 MW by 2035**.
- Reduce transmission and distribution losses to **11.50% by 2030** and **10.50% by 2035**.

## Cooking and Heating:

- Increase electric cookstove use to **2.1 million households** and **15,000 institutions by 2035**.
- Expand improved cookstoves (ICS) use to **1 million households by 2035**.

## Transport:

- Achieve **95% sales of Battery Electric Vehicles (BEVs)** for private passenger vehicles and **90% for public passenger vehicles by 2035**.
- Develop **100 km of integrated electric bus, trolley, and light rail transit system** in Kathmandu Valley by 2035.
- Build **300 km of electric rail network by 2035**.

## Industry:

- All iron and steel industries to adopt **electricity-based furnaces by 2035**.
- Convert **70% of industrial boilers to electricity-based by 2035**.

## Agriculture, Forestry and Other Land Use (AFOLU):

- Maintain at least **46% of total land area under forest cover by 2035**.

## Waste:

- Treat **510 million liters of wastewater per day** and **370,000 cubic meters of faecal sludge per year by 2035**.

# Challenges in GHG Inventory

**Poor Data Quality:** Lack of granular data, technology info, and localized emission factors, leading to high uncertainties.

**Systemic Data Gaps:** Inconsistent data across sectors and history, hindering advanced methodology adoption.

**Technical & Resource Constraints:** Difficulty upgrading to Tier 2 methods due to limited human and financial resources.

**Weak Quality Assurance:** Inadequate mechanisms for ensuring inventory accuracy and reliability.

**Limited Institutional Capacity:** Issues with centralized data management, unclear roles, and low agency awareness.

# Challenges in Adaptation

- **Major Financial Shortfall:** Significant gap between adaptation needs (USD 47.4B by 2050) and domestic funding (USD 1.5B).
- **Limited Technical Expertise**
- **Poor Coordination between three tiers of Government**
- **Need for Localized Data**
- **Weak Policy Implementation**
- **Weak Institution for financial flow**

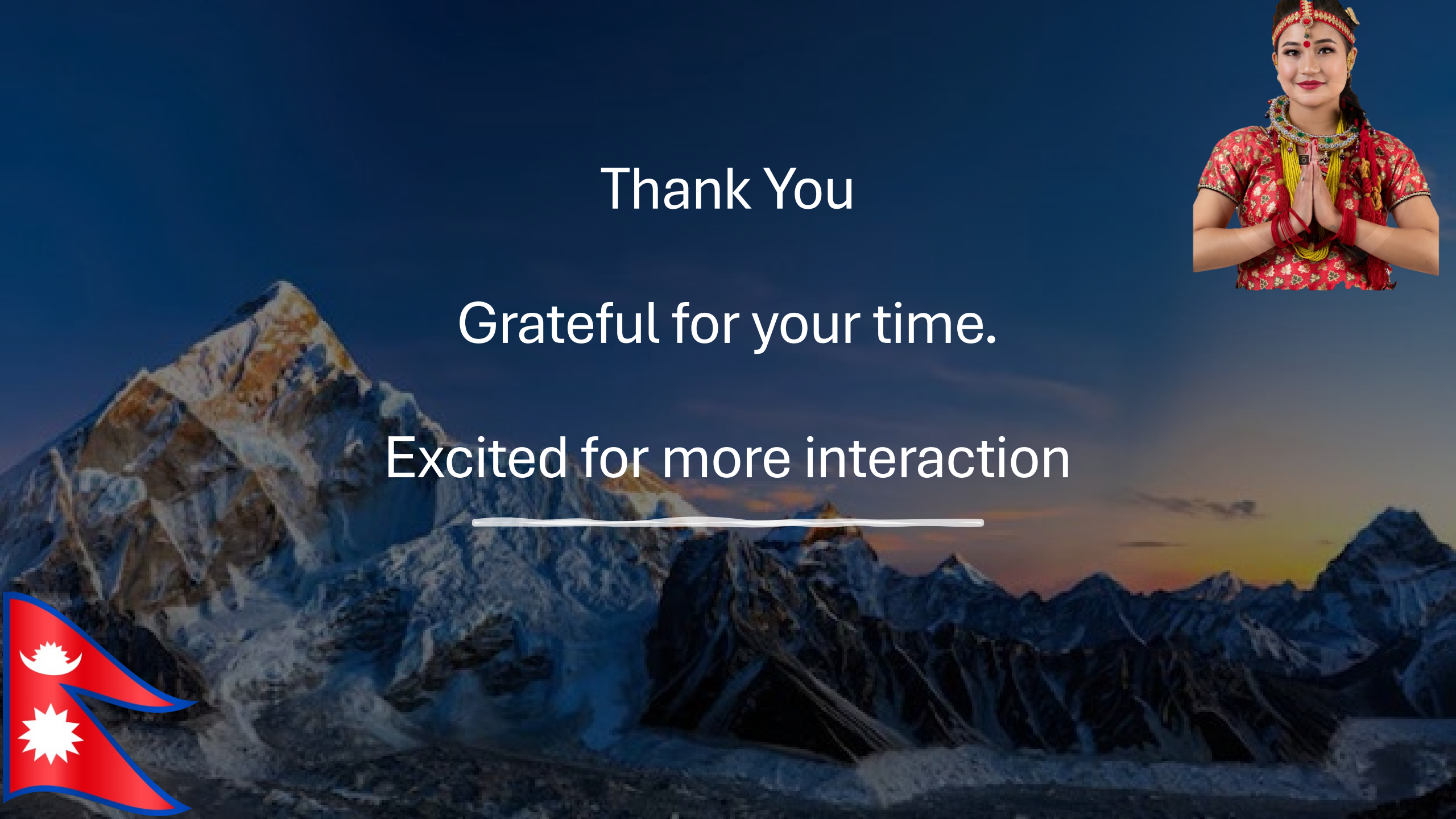
# Challenges in NDC 3.0 Preparation

- Cross Sectoral coordination
- Lack of Base line information
- Quantification of Targets
- Multiple Interests groups

# Supports Received

BTR Preparation Project

CBIT project


Thank You
Grateful for your time.
Excited for more interaction