

Training on 2006 IPCC Guidelines for preparing National GHG Inventory: General Reporting and Guidelines



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Overview on GHG Inventory

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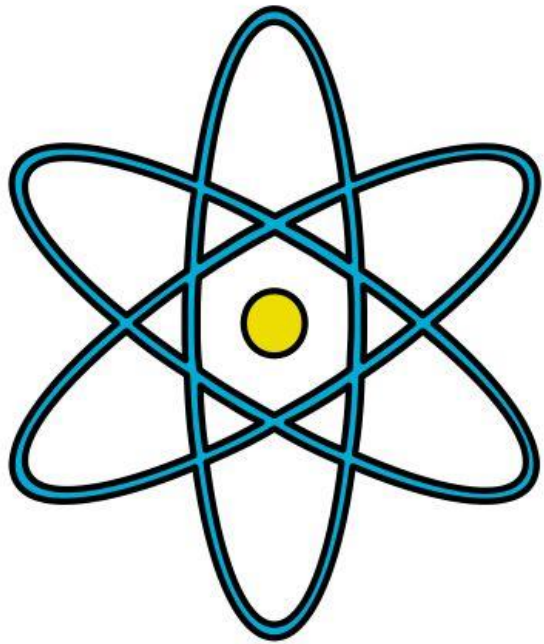
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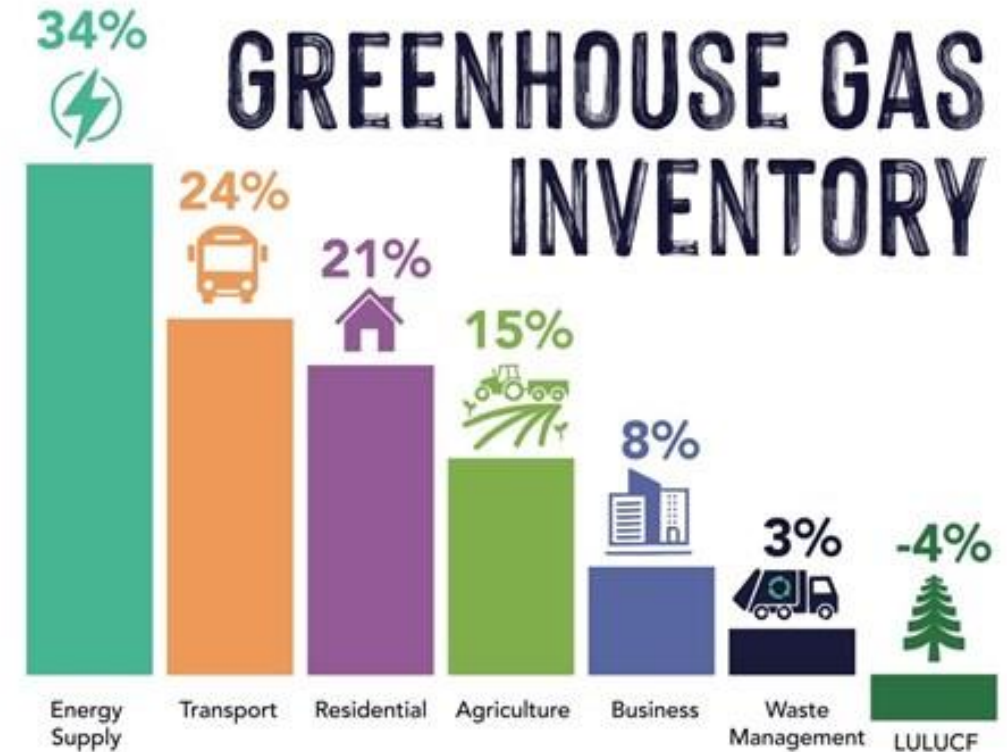


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1. Introduction to GHG inventory

WHAT IS GHG INVENTORY?

- ❑ A GHG inventory is a list of emission sources and the associated emissions quantified using standardized methods.
- ❑ The GHG inventory takes stock of all the climate warming emissions produced within the respective County boundaries by residents, businesses, and industry and breaks down emissions from different sources like transportation, buildings, and waste.



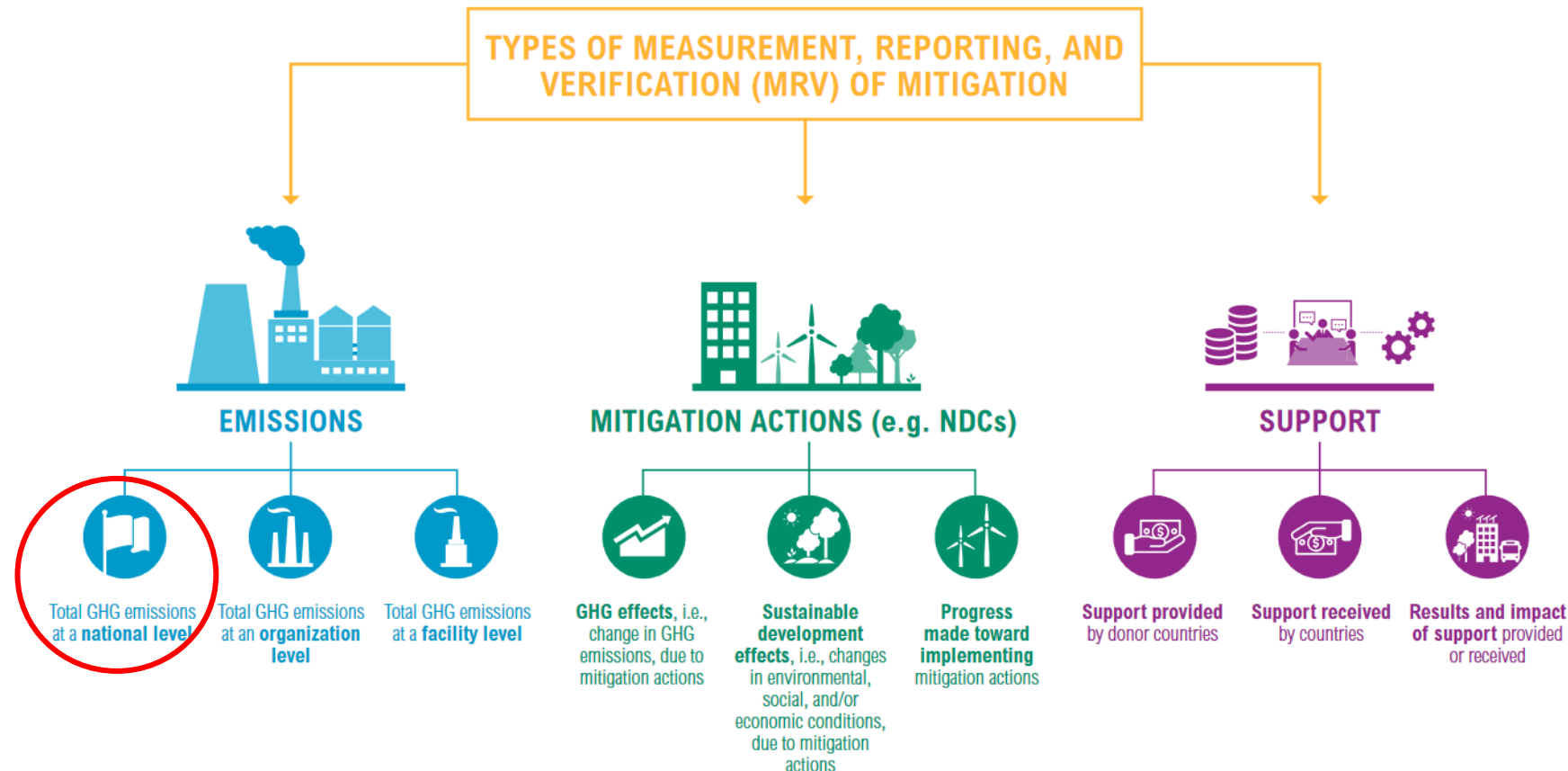
Where do our emissions come from?
How much?



WHY DO WE NEED GHG INVENTORY?

- To align with the international agreement to limit climate change
- To set emission limits/ targets/ aims
- To monitor progress openly and transparently
- To understand the link between environmental pollution and its effects on the source of pollution
- To help cost-effective policy development (input to models)

- ❑ A national GHG inventory is a **key element of the national communication**.
- ❑ National GHG Inventory is an **MRV of GHG emissions**. It refers to estimating, reporting, and verifying actual emissions over a defined period of time (one year or a number of years).

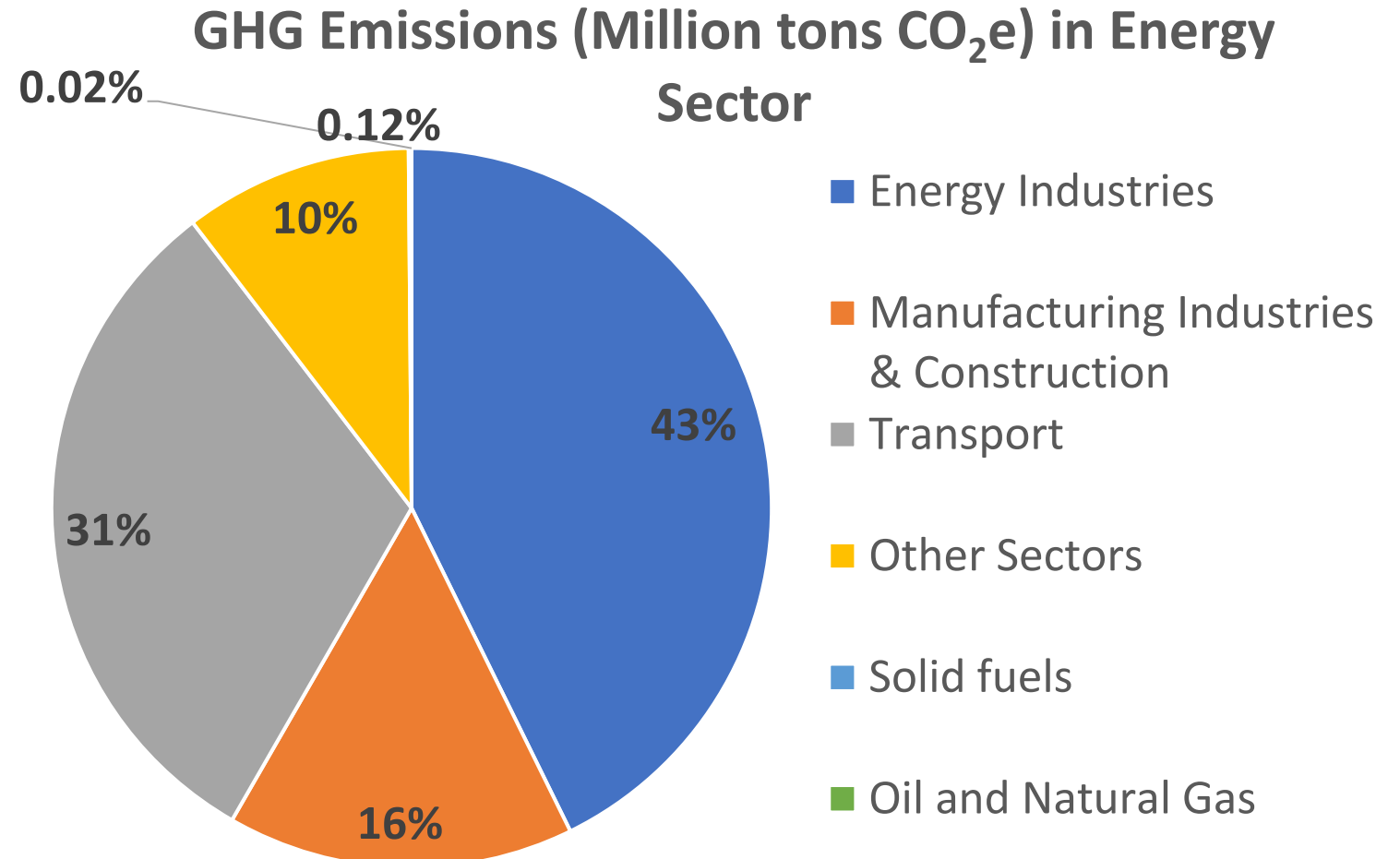


Total GHG emissions-2010 in the Philippines (Million tons of CO₂e)

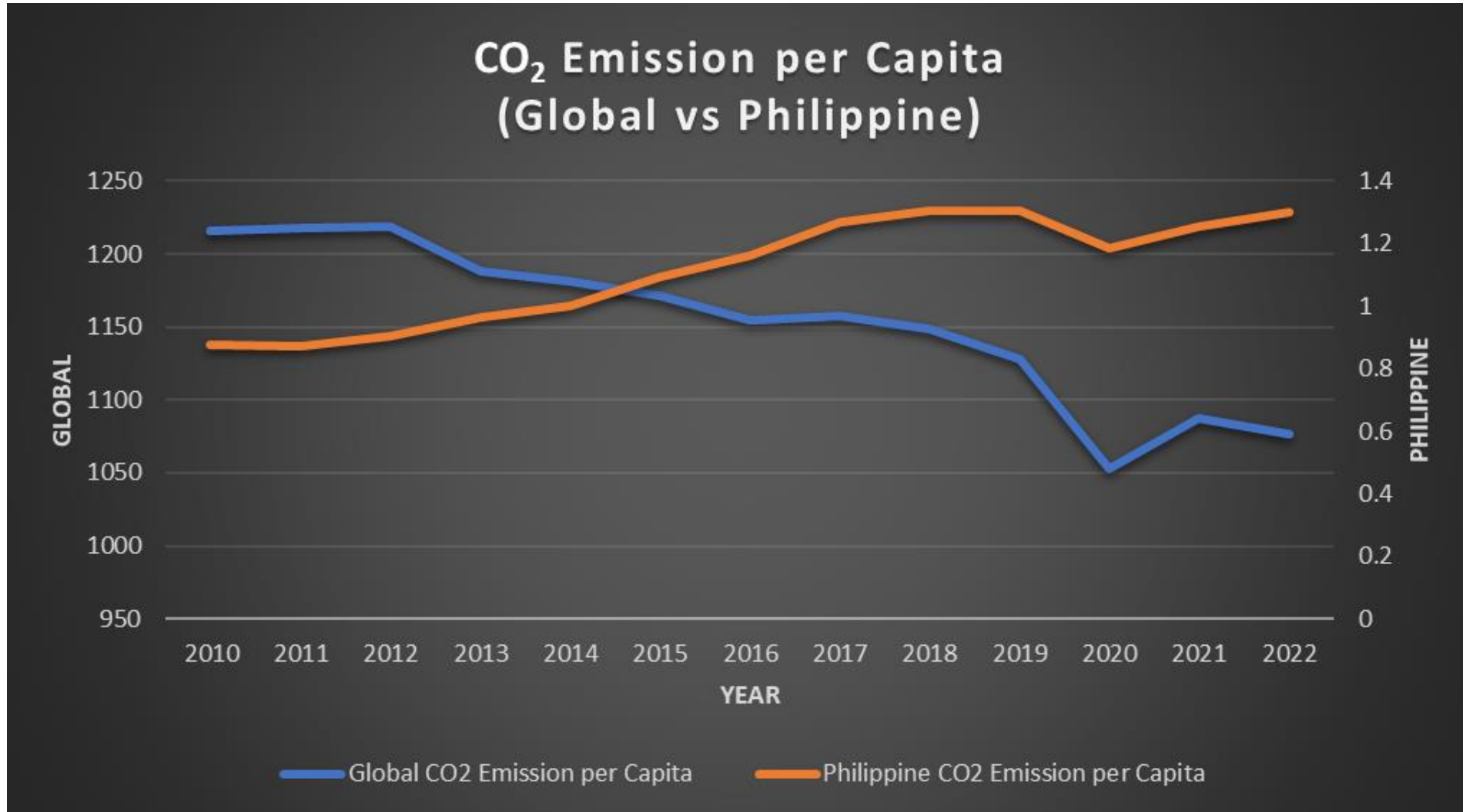
	<i>CO₂</i>	<i>CH₄</i>	<i>N₂O</i>	<i>HFCs</i>	<i>Total</i>
<i>Energy</i>	50.698	1.888	0.519	-	53.105
<i>Agriculture</i>	0.696	33.853	8.604	-	43.152
<i>Transport</i>	23.718	0.125	0.331	-	24.174
<i>Waste</i>	0.015	14.527	1.017	-	15.559
<i>IPPU</i>	7.564	0.009	0.019	0.771	8.363
<i>FOLU</i>	(37.016)	0.007	0.002	-	(37.007)
	<i>TOTAL</i>				<i>107.345</i>

Energy Sector

Sub- Sector	GHG Emissions in Million tons of CO ₂ e
Energy Industries	33.02
Manufacturing Industries & Construction	12.04
Transport	24.17
Other Sectors	7.94
Fugitive Emissions- Solid fuels	0.09
Fugitive Emissions- Oil and Natural Gas	0.013



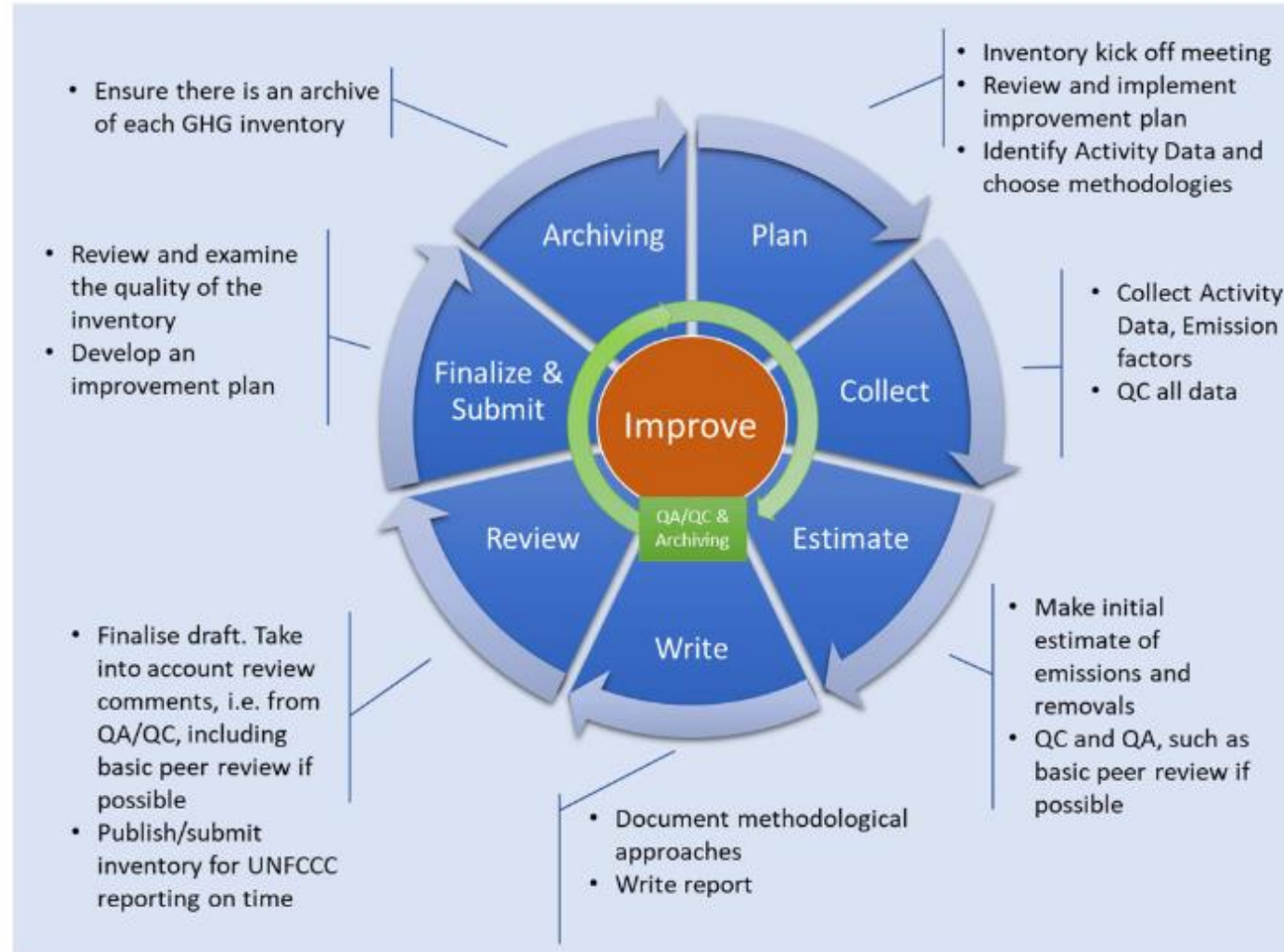
CO₂ Emissions per capita in Philippine vs Global (2010-2022)



Source : [Per capita CO₂ emissions \(ourworldindata.org\)](https://ourworldindata.org)

National GHG Inventory Management System

A way to structure all the steps and elements needed to estimate, report, review, archive, and improve estimates of GHG emissions and removal.



IPCC Inventory Software

IPCC Inventory Software was first released in 2012. Initially, it was designed to be a simple tool implementing only Tier 1 methods according to the 2006 IPCC Guidelines

The latest version, 2.901, has been released on February 14, 2024

- ❑ All Methodological Tiers and approaches according to the 2006 IPCC Guidelines,
- ❑ Calculation of Indirect CO₂ and N₂O emissions according to the 2006 IPCC Guidelines and its 2019

Refinement

- ❑ Interoperability functionality with the UNFCCC CRT Reporting tool (Energy Sector, Waste sector, Agriculture categories)

More Features of IPCC Inventory Software

- ❑ allows for each source/sink to use either a **single methodological Tier or a mix of Tiers**
- ❑ allows, in each equation, to **input user-specific values for EFs and parameters**
- ❑ allows different categories/sectors to be developed simultaneously
- ❑ implements **AR5 GWP₁₀₀** values (and allows any other user-specific metric to be applied)
- ❑ stores the **entire set of information of National GHG Inventory within a single database**

2. Requirements for GHG inventories for Non-Annex I countries

Para. 6 of Decision 17/CP.8

Each non-Annex I Party shall, in accordance with **Article 4, paragraph 1 (a), and Article 12, paragraph 1(a)** of the Convention, communicate to the Conference of the Parties a national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases (GHGs) not controlled by the Montreal Protocol.

Methodologies and Tiers that should be used by non-Annex I Parties

- Non-Annex I Parties should use the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories.
- According to the IPCC Guidelines, parties can use,
 - ✓ Different methods (tiers) included in the Guidelines, giving priority to methods which provide most accurate estimates, depending on national circumstances and the availability of data.
 - ✓ National methodologies where they consider which can reflect their national situation, provided that these methodologies are consistent, transparent and well documented
 - ✓ Default methodologies which include default emission factors and in some cases default activity data

What Non-Annex I Parties should include in their GHG Inventory?

- Procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories.
- Estimates of anthropogenic emissions of CO₂, CH₄ and N₂O by sources and removals by sinks.
- Information on anthropogenic emissions by sources of HFCs, PFCs and SF₆.
- Anthropogenic emission by sources of other greenhouse gases such as CO, NO_x and non-methane volatile organic compounds (NMVOCs).
- Other gases not controlled by the Montreal Protocol, such as SO_x, included in the IPCC Guidelines.

What Non-Annex I Parties should include in their GHG Inventory? Cont.

- Any large differences between the two approaches of sectoral and the reference approaches
- Emissions from international aviation and marine bunker fuels separately
- Information on methodologies used in the estimation of anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol, including a brief explanation of the sources of emission factors and activity data
- The inventory sectoral tables and worksheets of the IPCC, in both electronic and hard copy format
- Information on the level of uncertainty associated with inventory data and their underlying assumptions, and to describe the methodologies used, if any, for estimating these uncertainties



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