
Overview of national GHG inventories: Scope and general principles

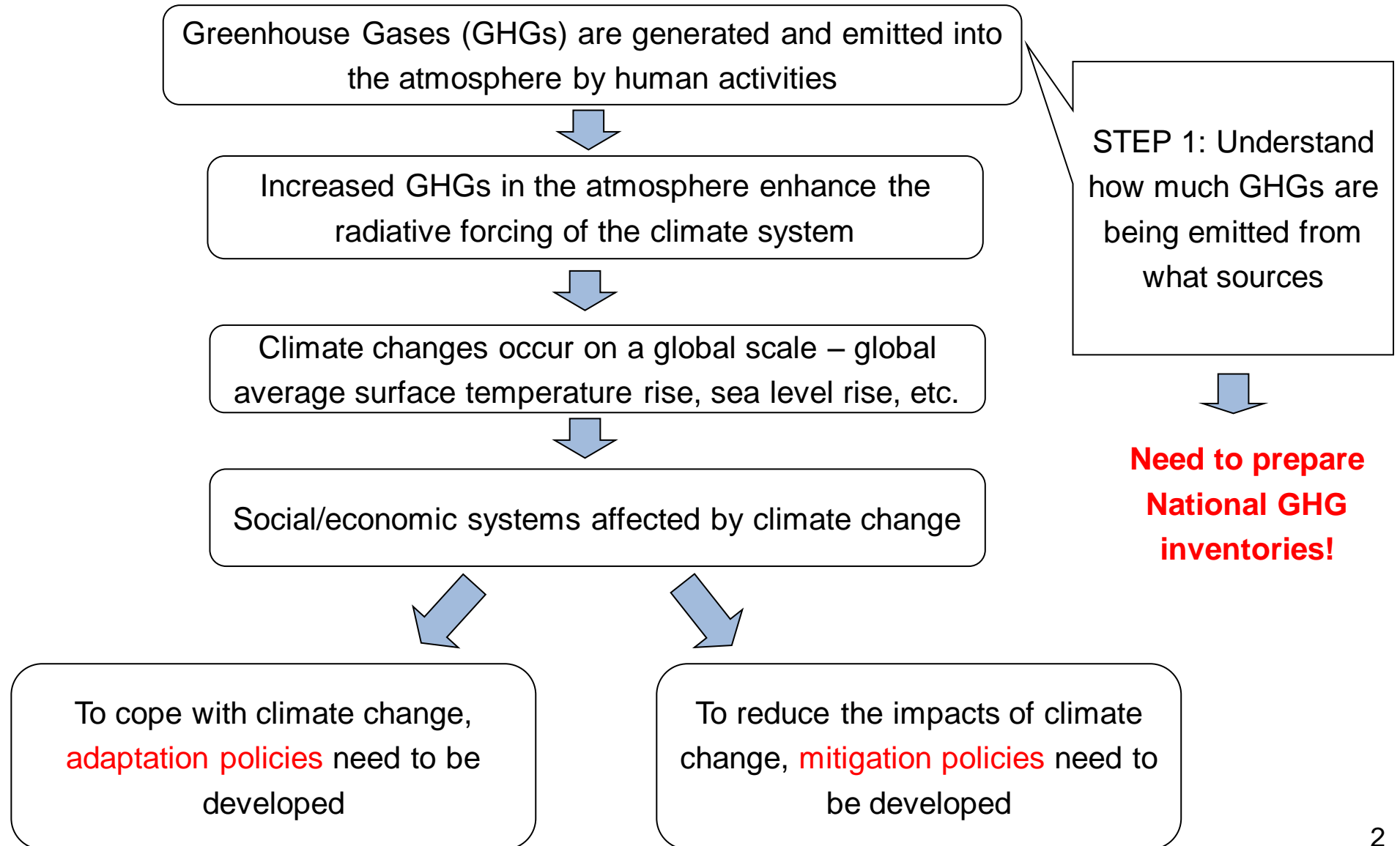
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Outline

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- Guidelines for national GHG Inventory preparation
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Background



What is a national GHG Inventory?

- GHG inventories are a tool for countries
 - to understand the **level of national GHG emissions/removals**;
 - to use as a basis for **developing mitigation policies and measures**; and
 - to **track the progress** of mitigation policies and measures.
- It is an imperfect tool that needs to be **improved continuously**
 - Science of GHG sources/sinks is not fully understood. It is a work in progress.
 - Rules and guidelines for preparing GHG inventories has been updated to reflect new/improved science.
 - Parties also continuously work on inventory activities to fully understand their level of their emissions/removals

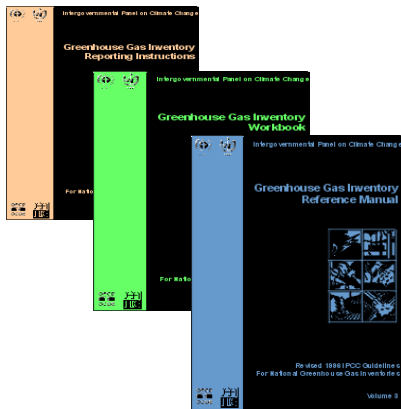
What is a national GHG Inventory?

National GHG Inventories (according to IPCC Guidelines):

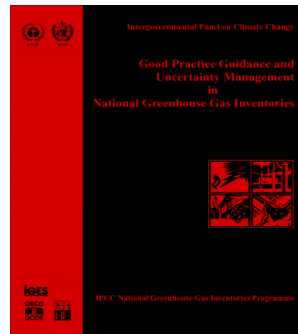
- Include CO₂, CH₄, N₂O, PFC, HFC, SF₆ (and NF₃)
- Include “anthropogenic (man-made)” emissions
- Include all sources/sinks within “national territories” from:
 - Energy
 - Industrial Processes and Solvent Use
 - Agriculture
 - Land-Use, Land Use Change and Forestry
 - Waste

Guidelines for national GHG Inventory preparation

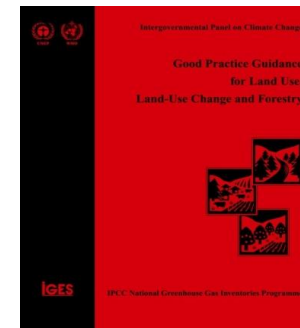
- Guidelines for GHG inventories have been updated to incorporate new science.
- Annex I / non-Annex I Parties have different requirements regarding guidelines.



Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories



Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories



Good Practice Guidance for Land Use, Land-Use Change and Forestry (GPG-LULUCF)



2006 IPCC Guidelines for National Greenhouse Gas Inventories

General Principles: “TACCC”

- The principles of **transparency, consistency, comparability, completeness and accuracy (TCCCA)** are fundamental in GHG inventory preparation.
 - Transparency
 - Assumptions and methodologies used for an inventory should be clearly explained to facilitate replication and assessment of the inventory by users. The transparency of inventories is fundamental to the success of the process for the communication and consideration of information
 - Consistency
 - An inventory should be internally consistent in all its elements for all years. An inventory is consistent, if the same methodologies are used for all years and if consistent data sets are used to estimate emissions or removals from sources or sinks
 - Comparability
 - Estimates of emissions and removals reported by Parties in inventories should be comparable among Parties. For this purpose, Parties should use the methodologies and formats agreed by the COP for estimating and reporting inventories

General Principles: “TACCC”

- Completeness
 - The inventory covers all sources and sinks, and all gases included in the IPCC Guidelines. Completeness also means full geographic coverage of sources and sinks of a Party
- Accuracy
 - Accuracy is a relative measure of the exactness of an emission or removal estimate. Estimates should be accurate in the sense that they are not systematically over or under true emissions or removals, as far as can be judged, and that uncertainties are reduced as far as practicable. Appropriate methodologies should be used, in accordance with the IPCC good practice guidance, to promote accuracy in inventories.

General Principles: Notation keys

- For categories where a numerical value is not reported, the Party should report the appropriate notation keys instead.
 - NO :not occurring
 - Activities or processes in a particular category that do not occur within a country.
 - NE :not estimated
 - Existing emissions and removals which have not been estimated. Where NE is used in an inventory for emissions or removals, the Party should indicate why they have not been estimated.
 - NA :not applicable
 - Activities in a given category that do not result in emissions or removals of a specific gas.

General Principles: Notation keys

- IE :included elsewhere
 - Emissions by sources and removals by sinks estimated but included elsewhere in the inventory instead of the expected category. Where IE is used in an inventory, the Party should indicate where in the inventory the emissions or removals from the displaced category have been included and the Party should explain such a deviation from the expected category;
- C :confidential
 - Emissions by sources and removals by sinks of greenhouse gases which could lead to the disclosure of confidential information.

General Principles: The “Tier” approach

- The Tier approach applies to all sectors of the GHG inventory. A Party is allowed to use an appropriate Tier taking into account their national circumstance such as availability of data and country specific scientific information.
 - Tier 1 method uses a standard equation and default emission factors/parameters with activity data.
 - Tier 2 method in many cases uses a similar approach as Tier 1, but often applies country specific emission factors/parameters and activity data.
 - Tier 3 method uses more complex methods, such as models, and estimate emissions/removals at a finer level.
- A Party can use a different tier for each source of emission and sink of removal
- Higher tiers provide a more detailed estimation method and are generally considered to provide more accurate result with lower uncertainty.

General Principles: Decision Trees

- The decision trees formalize the choice of the estimation method most suited to national circumstances. It also provides information on choice of emission factors and activity data, and on the associated uncertainty ranges.
- Typically, higher tier (Tier 2 and 3) methods are suggested for key categories.
- In some cases, the Party may be unable to adopt a higher tier method due to lack of resources. This may mean that they are unable to collect the required data for a higher tier or are unable to determine country specific emission factors and other data needed for Tier 2 and 3 methods.
- In these cases, a Tier 1 approach can be used. The Party should in these cases document why the methodological choice was not in line with the decision tree.

General Principles: Continuous improvement

- GHG inventory preparation is a continuous process where improvements are made according to
 - The availability of new data
 - The development/improvement of methodologies
 - Correction of any mistakes identified through QA/QC procedures
 - The change of the IPCC Guidelines applied to for national GHG inventory preparation

- Recalculation of previous inventory data is not only accepted, but encouraged if they improve the quality of the GHG inventory.

The UNFCCC context: BUR and ICA

- Cancun Agreement (2010): **Decision 1/CP.16**.
 - **Decision 1/CP.16 III.B. paragraph 60 (b)**

Parties not included in Annex I to the Convention should submit their national communications to the Conference of the Parties, ..., **every four years**
 - **Decision 1/CP.16 III.B. paragraph 60 (c)**

Developing countries, consistent with their capabilities and the level of support provided for reporting, should also submit **biennial update reports** containing updates of **national greenhouse gas inventories, including a national inventory report** and information on mitigation actions, needs and support received
 - **Decision 1/CP.16 III.B. paragraph 63**

Conduct **international consultations and** analysis of biennial reports under the Subsidiary Body for Implementation

The UNFCCC context: Reporting GHG inventory

- The basis for preparing and reporting national GHG inventories in BURs is specified in paragraph 41 of decision 2/CP.17 and paragraphs 3-10 of the BUR guidelines contained in annex III to decision 2/CP.17

Paragraph	Content
2/CP.17 para 41	Target year of the GHG inventory
BUR Guidelines para 3	Use of the UNFCCC guidelines for national communications
BUR Guidelines para 4	Use of the UNFCCC guidelines for national communications
BUR Guidelines para 5	Reporting updated data on activity levels
BUR Guidelines para 6	Tables to be reported
BUR Guidelines para 7	Reporting a consistent time series
BUR Guidelines para 8	Reporting GHG inventories for previous submission years
BUR Guidelines para 9	Reporting the national inventory report
BUR Guidelines para 10	Reporting additional information