CBIT-GSP
CLIMATE TRANSPARENCY

Capacity Building Initiative for Transparency - Global Support Programme (CBIT-GSP) : Asia Region

Time Series and Recalculation

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Time Series

- The time series is a crucial part of the greenhouse gas inventory, providing historical emissions trends and tracking national emission reduction strategies. It is essential to estimate emissions consistently, using the same method and data sources in all years. Using different methods and data could introduce bias, as it may reflect real changes in emissions or methodological refinements.
- An inventory is not just an estimate of a single year. It includes estimates for a number of years (time series of estimates)
  - Information on historical emissions trend
  - Tracking the effects of strategies to reduce emissions at the national level
- Annual estimates should be comparable
  - Should reflect the real annual fluctuations in emissions and removals

Time Series

- Therefore, emissions and removals in time series should be estimated consistently
  - Use of the same method and data sources in all years, where possible
- However, it is not always possible to use the same method and data sets for the entire time series due to a lack of data
- Emission inventories can track changes in emissions and removals through changing activity levels or changing emission rates, or both. The way in which such changes are included in methodologies can have a significant impact on time series consistency.
  - Changes in activity levels
  - Changes in emission rates
  - Capture, destruction, or combustion of emissions

Quality of Time Series and Documentation

- Comparison of the results of multiple approaches where it is possible to use more than one approach
  - Plotting and comparing the results of splicing techniques on a graph is useful
  - If alternative splicing methods produce different results, should consider which result is most realistic
- Comparison of recalculated estimates with previous estimates can be a useful check on the quality of a recalculation
  - However, higher tier methods may produce different trends than lower tier methods because they more accurately reflect actual conditions
- All recalculations and measures taken to improve time series consistency should be documented and reported
  - Reason of the recalculation
  - Effect of the recalculation on the time series
  - Splicing techniques used

Recalculation

- **Methodological changes** in a category involve switching to a different tier from the previous one, often driven by the development of new data sets. For instance, a country may use a higher tier method for an industrial category due to site-specific emission measurement data.

- **Methodological refinement** occurs when an inventory compiler uses the same tier to estimate emissions but applies it using a different data source or level of aggregation. For example, new data may allow for further disaggregation of a livestock enteric fermentation model, resulting in more homogenous animal categories or more accurate emission factors.

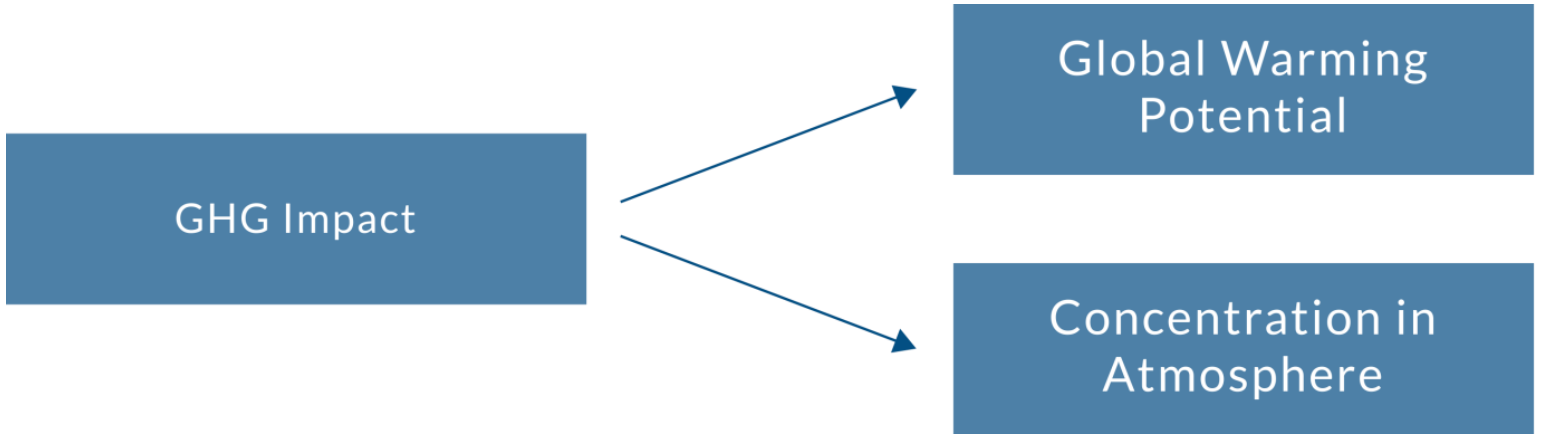
Recalculation

- **It is good practice to change or refine methods when:**
  - Available data have changed
  - The previously used method is not consistent with the IPCC guidelines for that category
  - A category has become key
  - The previously used method is insufficient to reflect mitigation activities in a transparent manner
  - The capacity for inventory preparation has increased
  - New inventory methods become available
  - Correction of errors

Global Warming Potential (GWP)

WHY ARE SOME GREENHOUSE GASES MORE POTENT THAN OTHERS?

The concentration level of a greenhouse gas in the atmosphere and the Global Warming Potential (GWP) of that gas combine to determine the impact it has on global warming.

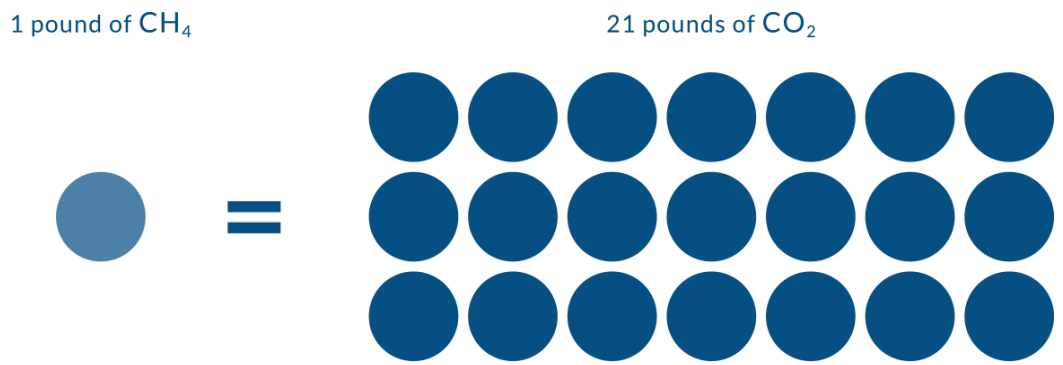


Global Warming Potential (GWP)

GLOBAL WARMING POTENTIAL (GWP)

Has the rather confusing definition of the "amount of warming that a gas will cause in the next 100 years, compared to the same volume of carbon dioxide."

GLOBAL WARMING EFFECT OF METHANE VERSUS CARBON DIOXIDE



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Global Warming Potentials (GWP)

Global warming potential (GWP) values relative to CO_2

Industrial designation or common name	Chemical formula	GWP values for 100-year time horizon		
		Second Assessment Report (SAR)	Fourth Assessment Report (AR4)	Fifth Assessment Report (AR5)
Carbon dioxide	CO_2	1	1	1
Methane	CH_4	21	25	28
Nitrous oxide	N_2O	310	298	265

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www.climate-transparency-platform.org

Thank you for your attention !

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Please reach out to us for any question, comments or suggestions!

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