

Cross Sectoral issues

28 March 2025

Noim Uddin, PhD
CBIT-GSP Pacific Coordinator

Executed by:



Funded by:

copenhagen
climate centre



Implemented by:



Cross sectoral issues

- Definition
- National circumstances
- Methodologies, parameters and data
- Key category analysis
- Time-series consistency and recalculations
- Uncertainty assessment

- Assessment of completeness
- QA/QC
- Emission factors
- Metrics
- Information on methods and cross cutting elements
- Sectors and gases
- Time series

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

National inventory report – MPGs

A. Definitions (17)

B. National circumstances and institutional arrangements (18-19)

C. Methods

1. Methodologies, parameters and data (20-24)
2. Key category analysis (25)
3. Time-series consistency and recalculations (26-28)
4. Uncertainty assessment (29)
5. Assessment of completeness (30-33)
6. Quality assurance/quality control (34-36)

D. Metrics (37)

E. Reporting guidance (38)

1. Information on methods and cross-cutting elements (39-46)
2. Sectors and gases (47-56)
3. Time series (57-58)

Executed by:



Funded by:

copenhagen
climate centre



Implemented by:



Definition

Para 17. The definitions used for the principles of inventories **shall** be the definitions provided for in the 2006 IPCC Guidelines, Volume 1, Chapter 1, Section 1.4

Transparency	There should be clear and sufficient documentation to enable individuals or groups other than the inventors to understand how the inventory was produced.
Completeness	Estimates should be declared for all relevant source and sink categories, and GHGs, across the country's entire territorial coverage.
Consistency	Estimates for different years, gases and categories should be made in such a way that differences between years and categories reflect actual differences in the emissions balance and should reflect actual annual fluctuations in emissions or removals, without being subject to changes resulting from methodological differences.
Comparability	Inventory should be reported in a way that allows comparison with inventories for other countries.
Accuracy	should not contain excessive or insufficient estimates, to the extent that it can be judged. This means investing all the effort needed to eliminate bias in estimates.

Executed by:



Funded by:

copenhagen
climate centre



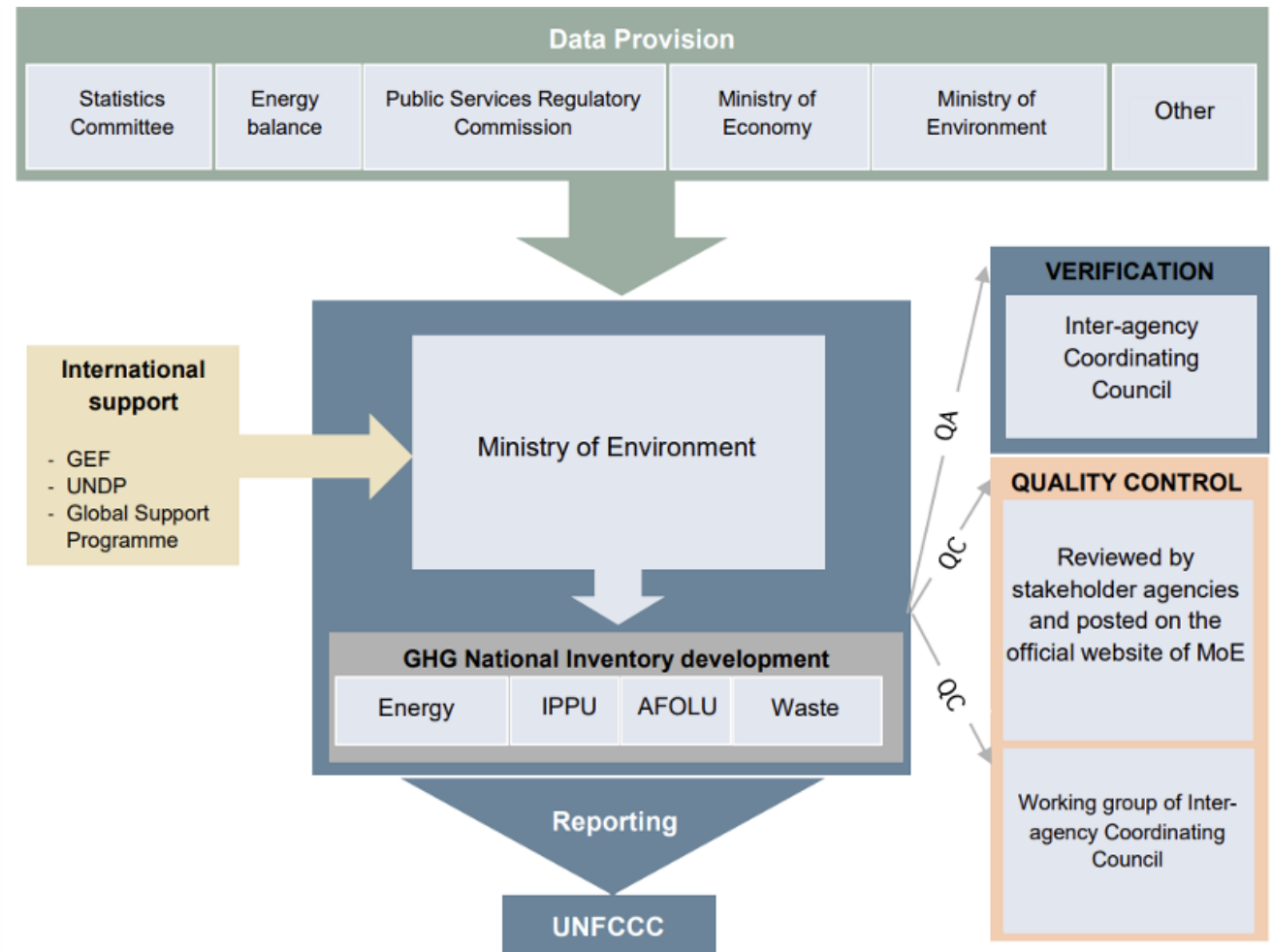
Implemented by:



National circumstances and institutional arrangements

Para 18. Each Party **should implement and maintain national inventory arrangements**, including institutional, legal and procedural arrangements that allow for continuous estimation, compilation and timely reporting of the national inventory in accordance with these MPGs.

National inventory arrangements may vary according to each Party's **national preferences and circumstances**, and change over time.



Institutional arrangements of GHG Inventory development in Armenia

Executed by:



Funded by:

copenhagen climate centre



Implemented by:



Methodologies, parameters and data

20. Each Party **shall** use the 2006 IPCC Guidelines and **shall** use any subsequent version or refinement of the IPCC guidelines agreed upon by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA). Each Party is encouraged to use the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands.

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

Methodologies, parameters and data

21. Each Party **shall** use methods from the IPCC guidelines (....)
Each Party **should** make every effort to use a recommended method (tier level) for key categories in accordance with those IPCC guidelines.

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

Methodologies, parameters and data

22. Each Party **may** use nationally appropriate methodologies if they better reflect its national circumstances and are consistent with the IPCC guidelines referred to in paragraph 20 above.

In these cases, each Party **shall transparently explain national methods, data and/or parameters selected.**

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

Methodologies, parameters and data

23. A Party **may be unable** to adopt a **higher tier method** for a particular key category owing to lack of resources. In such cases, the Party **may** use a tier 1 approach and **shall clearly document** why the methodological choice was not in line with the corresponding decision tree of the IPCC guidelines referred to in paragraph 20 above. The Party **should** prioritize for future improvement any key categories for which the good practice method elaborated in the IPCC guidelines referred to in paragraph 20 above cannot be used.

Executed by:



Funded by:

copenhagen
climate centre



Implemented by:



Methodologies, parameters and data

24. Each Party **is encouraged to use** country-specific and regional emission factors and activity data, where available, or to propose plans to develop them, in accordance with the good practice elaborated in the IPCC guidelines referred to in paragraph 20 above.

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

Key category analysis

- identification of key categories in national inventories enables limited resources available for preparing inventories to be prioritised. It is good practice to focus the available resources for the improvement in data and methods onto categories identified as key.
- in general, more detailed higher tier methods should be selected for key categories.
- it is good practice to give additional attention to key categories with respect to quality assurance and quality control (QA/QC)

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

Key category analysis

Para 25. Each Party **shall** identify key categories for the first and last year for which it reports, as provided for in Chapter II.E.3, including and excluding LULUCF categories, using approach 1, for both the level and trend assessment, by conducting an analysis of key categories in accordance with the IPCC guidelines.

Flexibility: Parties [...] will be able to identify their key categories using a threshold of not less than 85% instead of the 95% threshold in the IPCC guidelines, allowing them to focus on improving fewer categories and prioritising their resources.

Executed by:



Funded by:

copenhagen
climate centre



Implemented by:



Time series consistency and recalculation

26. To ensure time-series consistency, each Party should use the same methods and a consistent approach to underlying activity data and emission factors for each reported year.

Executed by:



Funded by:



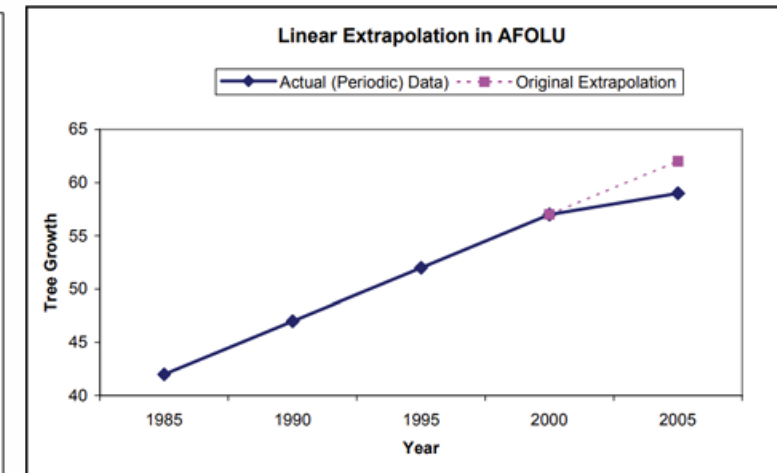
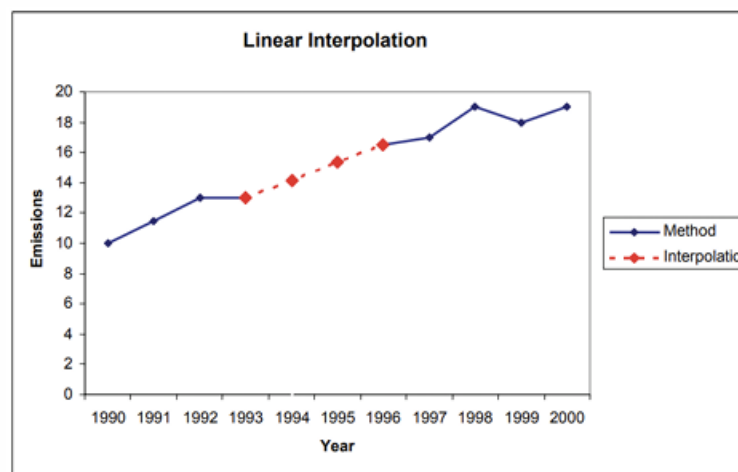
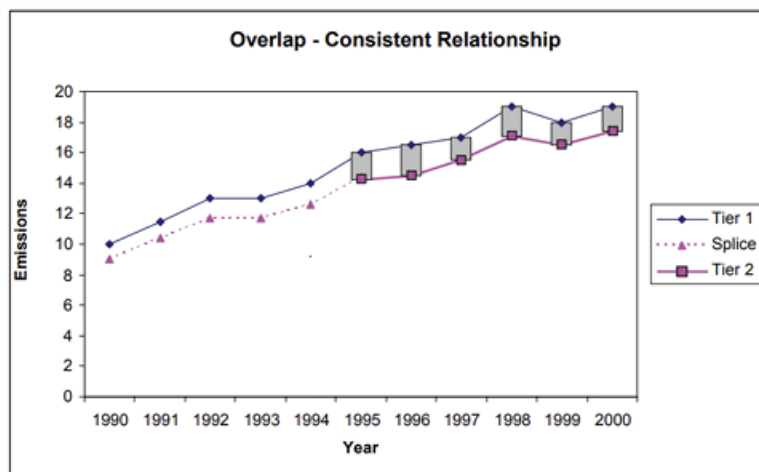
Implemented by:



copenhagen
climate centre

Time series consistency and recalculation

Para 27. To the same end, each Party **should** use surrogate data, extrapolation, interpolation and other methods consistent with the **splicing techniques** contained in the IPCC guidelines, in order to estimate missing emission values resulting from a lack of activity data, emission factors and other parameters.



Executed by:



Funded by:

copenhagen
climate centre



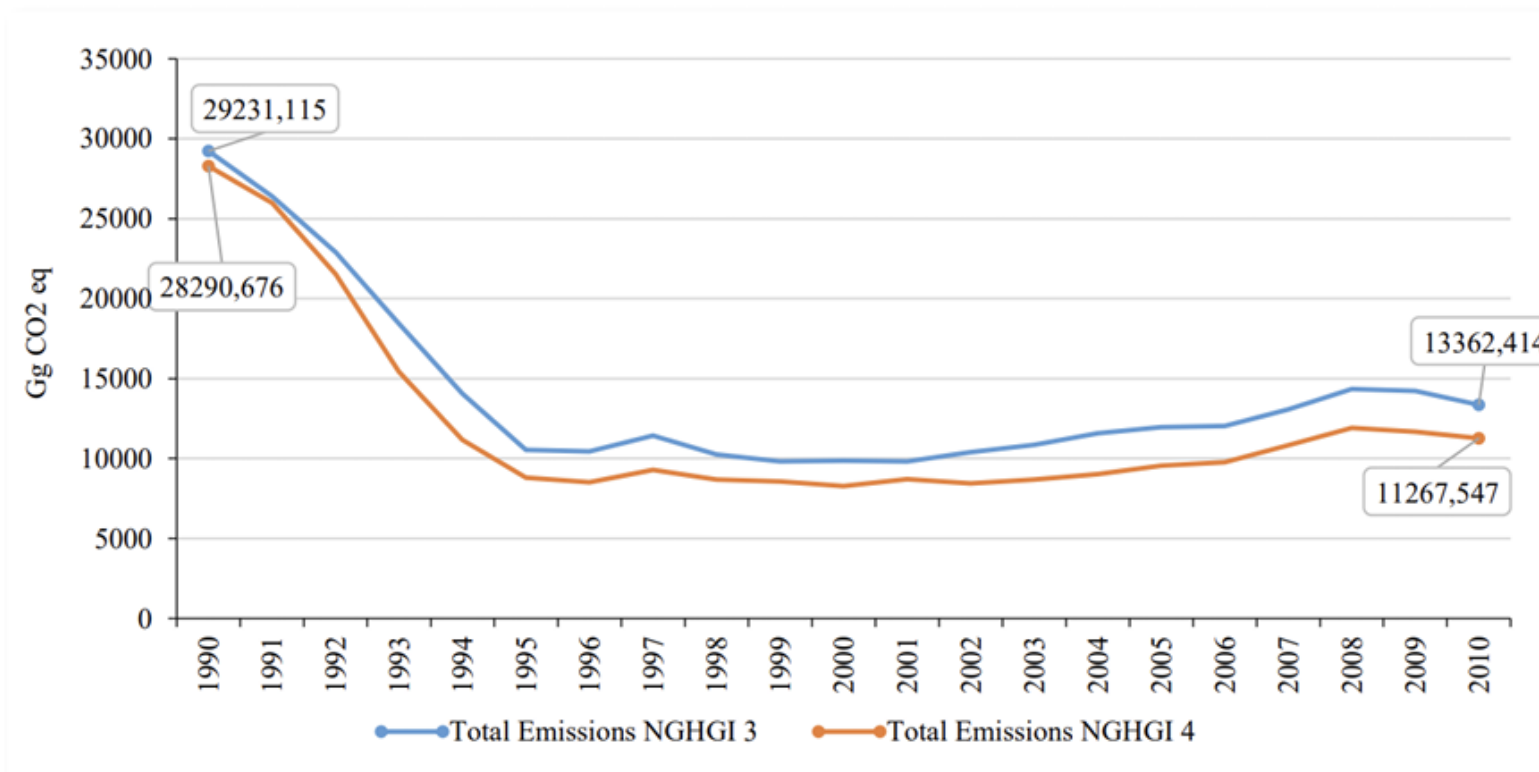
Implemented by:



Time series consistency and recalculation

28. Each Party **shall** perform recalculations in accordance with the IPCC guidelines referred to in paragraph 20 above, ensuring that changes in emission trends are not introduced as a result of changes in methods or assumptions across the time series.

The difference in the assessments of the 3rd and 4th NGHGI of the total GHG emissions of Kyrgyzstan in the period 1990-2010²⁵



Executed by:



Funded by:

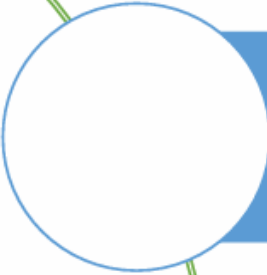
copenhagen
climate centre



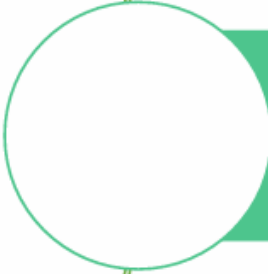
Implemented by:




Assessment of uncertainty



29. Each Party shall **quantitatively estimate and qualitatively discuss the uncertainty** of estimates of emissions and removals for all categories, including inventory totals, at least for the first and last year of the time series referred to in paragraphs 57 and 58.



Each Party shall also estimate the **trend uncertainty of emission and removals** estimates for all categories, including totals, between the start year and the last year of the time series, using at least method 1 as stipulated in the IPCC guidelines.



Flexibility: Parties may submit, at a minimum, a qualitative uncertainty analysis of the main categories, using the IPCC guidelines, where quantitative input data are not available to quantitatively estimate the uncertainties; they are encouraged to submit a quantitative uncertainty estimate for all inventory categories.

Completeness assessment

30. Each Party **should** indicate the sources and sinks (categories, pools and gases) that are not considered in the national inventory report but for which estimation methods are included in the IPCC guidelines referred to in paragraph 20 above and explain the reasons for such exclusion.

31. Each Party **shall** use notation keys where numerical data are not available when completing common reporting tables, indicating the reasons why emissions from sources and removals by sinks and associated data for specific sectors, categories and subcategories or gases are not reported.

33. Once emissions or removals have been estimated for a category and if they continue to occur, each Party **shall** report them in subsequent submissions.

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

Quality Control and Quality Assurance

- Quality Control (QC) is a system of routine technical activities to assess and maintain the quality of the inventory as it is being compiled. It is performed by personnel compiling the inventory. The QC system is designed to: (i) Provide routine and consistent checks to ensure data integrity, correctness, and completeness; (ii) Identify and address errors and omissions; (iii) Document and archive inventory material and record all QC activities.
- Quality Assurance (QA) is a planned system of review procedures conducted by personnel not directly involved in the inventory compilation/development process. Reviews, preferably by independent third parties, are performed upon a completed inventory following the implementation of QC procedures.

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

QA/QC in MPGs

- **34. Each Party shall** elaborate an inventory QA/QC plan in accordance with the IPCC guidelines referred to in paragraph 20 above, including information on the inventory agency responsible for implementing QA/QC; those developing country Parties that need flexibility in the light of their capacities with respect to this provision are instead encouraged to elaborate an inventory QA/QC plan in accordance with the IPCC guidelines referred to in paragraph 20 above, including information on the inventory agency responsible for implementing QA/QC.

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

QA/QC in MPGs

- 35. **Each Party shall** implement and provide information on general inventory QC procedures in accordance with its QA/QC plan and the IPCC guidelines referred to in paragraph 20 above; those **developing country Parties that need flexibility** in the light of their capacities with respect to this provision are instead **encouraged to implement and provide information on general inventory QC procedures in accordance with its QA/QC plan and the IPCC guidelines** referred to in paragraph 20 above. In addition, Parties **should apply category-specific QC procedures in accordance with the IPCC guidelines** referred to in paragraph 20 above for key categories and for those individual categories in which significant methodological changes and/or data revisions have occurred. In addition, Parties should implement QA procedures by conducting a basic expert peer review of their inventories in accordance with the IPCC guidelines referred to in paragraph 20 above.

Executed by:



Funded by:

copenhagen
climate centre



Implemented by:



QA/QC requirements

- QA/QC plan
- QC procedures
 - Emissions factor QC
 - Activity data QC
 - Calculation-related QC
- QA procedures
- QA/QC and uncertainty estimates
- Reporting

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

Quality Control Activities

- Check that assumptions and criteria for the selection of activity data, emission factors, and other estimation parameters are documented
- Check for transcription errors in data input and references
- Check that emissions and removals are calculated correctly
- Check that parameters and units are correctly recorded and that appropriate conversion factors are used.
- Check the integrity of database files
- Check that the movement of inventory data among processing steps is correct

Executed by:



Funded by:

copenhagen
climate centre



Implemented by:



Quality Assurance Activities

- Reviews, preferably by independent third parties, are performed upon a completed inventory following the implementation of QC procedures.
- Reviews verify that measurable objectives were met, ensure that the inventory represents the best possible estimates of emissions and removals given the current state of scientific knowledge and data availability, and
- Support the effectiveness of the QC program.

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

Quality Control and Quality Assurance Activities



- Check that uncertainties in emissions and removals are estimated and calculated correctly
- Check time series consistency
- Check completeness
- Trend checks
- Review of internal documentation and archiving

Executed by:



Funded by:



Implemented by:



Examples of QA/QC (Samoa – BUR1)

3.1.4. Quality Assurance and Quality Control (QA/QC)

The study considered various quality assurance and quality control measures during the development of this inventory to assure the inventory's accuracy and continually enhance the quality. For example, data quality and relevance are evaluated; correct data management and inclusion into Excel workbooks is ensured; the numbers and estimates are checked for accuracy, and clear documentation is provided.

The emission estimates reported in this study were developed using the best available data and methodology. For example, past reports and studies of equivalent detail and complexity were referred to, relevant data inputs were re-evaluated, and targeted data comparisons were conducted across several data sources. The estimation was calculated in the spread sheet. To make QA/QC easier, the spreadsheets are equipped with built-in automated error checks. An extensive review process will take place before this report is finalized in order to ensure that all results transcribed from the workbooks are accurate.

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

Examples of QA/QC (Vanuatu – BTR1)



1.5. Brief general description of QA/QC plan and implementation

A Quality Assurance/Quality Control (QA/QC) Plan is a review mechanism that is an integral part of the process and was devised in order to improve transparency, consistency, comparability, completeness, and accuracy of national greenhouse gas inventory. An internal QA/QC plan was developed, and roles and responsibilities were defined for the First Biennial Transparency Report and GHG Inventory Team Members. The QA/QC process and review mechanism implemented at all levels of data collection, inventory preparation and reporting.

The inventory team routinely conducted checks consistency of the data and information provided by the different stakeholders (line ministries, government departments, Organizations, Public and private sector etc), to ensure data integrity, correctness, and completeness. In case of discrepancy or incompleteness, the inventory team consulted the relevant stakeholders and experts to reduce the data uncertainty, appropriate corrections, address errors and omissions. The sub-sectoral and sectoral calculations of GHGs were shared with the Technical Working Groups (TWGs) for technical review of categories and sub-category activity data, emission factors, estimation parameters, and calculation methods. The inputs provided by the TWGs were addressed and GHG emission reduction calculation was revised. On finalization of the GHG Inventory calculations, a draft report was prepared and shared with the TWGs.

Executed by:



Funded by:

 copenhagen climate centre



Implemented by:



GHG Inventory

Cross sectoral issues	National GHG inventory
Methodologies, parameters and data	
Key category analysis	
Time-series consistency and recalculations	
Uncertainty assessment	
Assessment of completeness and notation keys	
QA/QC	
Emission factors	
Metrics	

Executed by:



Funded by:



Implemented by:



Group discussion

Discuss with peers and list following:

- Current practice on QA/QC by the coordinating agency or agency responsible
- Challenges in terms of conducting QA/QC on documents which were prepared by external experts/consultants
- Any good practice or tips to overcome challenges.

After discussion with peers, each country will share findings (2 mins per country)

Executed by:



Funded by:



Implemented by:



copenhagen
climate centre

Thank you for your attention

For more information

<https://climate-transparency-platform.org>

Noim Uddin, PhD

CBIT-GSP Pacific Coordinator

Email: sknoim.uddin@un.org

Tel: +61 418 200 513

Executed by:



Funded by:

copenhagen
climate centre



Implemented by:

