

International perspective: Agriculture Inventory data and Management

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Outline

- Understand the international context of international climate policy with regards to Agriculture GHG compilation and Reporting
- IPCC Guidelines and UNFCCC Decisions including the Paris Agreement Common Tabular Tables (CTF) for Agriculture
- A Conceptual Framework for the Collection of Agricultural Statistics and Data and need for a legal/ institutional framework for agriculture data
- Agriculture data collection:
- ✓ A Framework for collecting Activity data- Example from Livestock/ other examples
- Online Data Management tools
- Key messages/Summary

IPCC Guidelines and UNFCCC Decisions- International Climate Policy Context (i)

- Countries report their greenhouse gas (GHG) emissions and removals from all sectors including Agriculture via national GHG Inventories, submitted to the United Nations Framework Convention on Climate Change (UNFCCC)
- GHG inventories are estimated and reported in accordance with international climate policy agreements and technical guidelines developed by the Intergovernmental Panel on Climate Change (IPCC)
- One way of tracking progress towards the NDCs is through national GHG inventories. GHG inventories play a key role in the transparency framework through which progress towards national and global climate goals will be tracked.
- The unique feature lies in the 'legal' nature of GHG inventories for developed countries, so-called Annex I parties, who submit annually their GHG inventories for reporting as per international climate policy agreements under the UNFCCC and its Kyoto Protocol.

IPCC Guidelines and UNFCCC Decisions- International Climate Policy Context (ii)

- At the COP 26 in Glasgow, Parties adopted on the “Guidance operationalizing the modalities, procedures and guidelines for the Enhanced Transparency Framework (ETF) referred to in Article 13 of the Paris Agreement”, in particular:
 - ✓ The common reporting tables for the electronic reporting of the information in the national inventory reports of anthropogenic emissions by sources and removals by sinks of GHG; (see excel files CFT);
 - ✓ The common tabular formats for the electronic reporting of the information necessary to track progress made in implementing and achieving nationally determined contributions under Article 4 of the Paris Agreement;
 - ✓ The common tabular formats for the electronic reporting of the information on financial, technology development and transfer and capacity-building support provided and mobilized, as well as support needed and received, under Articles 9–11 of the Paris Agreement.
 - ✓ The outlines for the biennial transparency report, national inventory document and technical expert review report; and
 - ✓ The training programme for technical experts participating in the technical expert review of biennial transparency reports.
- (Decision 5/CMA.3 - https://unfccc.int/sites/default/files/resource/cma2021_10a2_adv_0.pdf)
- The agriculture sector represents a unique challenge for national inventory compilers, especially in developing countries, due to significant difficulties in collecting activity data, compiling and regularly updating national statistics for agriculture, hence need for formalised data collection and management system

**What do countries need to do to have
a formalised system for agriculture
activity data collection**

A Conceptual Framework for the Collection of Agricultural Statistics/Data and need for an institutional framework

1

- The conceptual framework translates policy issues into statistical language by identifying the need for the survey framework to link the farm as an economic unit, the household as a social unit, and the land they occupy in the natural environment.

2

- The framework suggests that the fundamentals of the Global Strategy be based on three pillars (FAO 2010) below:

3

- The framework suggests that the fundamentals of the Global Strategy be based on three pillars: (i) identifying a minimum set of agriculture core data; (ii) the integration of agriculture into the national statistical system; and (iii) the sustainability of the agricultural statistical system through governance and statistical capacity building.
- Implementation of the Paris ETF means Parties increasingly are required to use a formalised data collection strategy and establishment of permanent institutional framework mandated by climate legislation/Data Sharing Agreements

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Why is a systematic approach required for data collection in Agriculture GHG compilation process (IPPC GPG): The 2006 IPCC Guidelines (Vol. 1 Ch. 2) identify the following principles underlying good practice in data collection

Data collection is an integral part of developing and updating an Agriculture GHG inventory



Formalised data collection activities should be established, adapted to national circumstances and reviewed periodically as part of implementing **IPCC good practice**



Data collection procedures are necessary for finding and processing existing data, as well as for generating new data by surveys or measurement campaigns



Data collection should cover values and their uncertainties

IPCC provide guidance on collection of existing national/international data and new data on EF, AD and uncertainty data collection- this covers:

1

- Developing a data collection strategy to meet data quality objectives regarding timeliness, and also consistency, completeness, comparability, accuracy, and transparency

2

- Data acquisition activities include generating new source data, dealing with restricted data and confidentiality, and using expert judgement

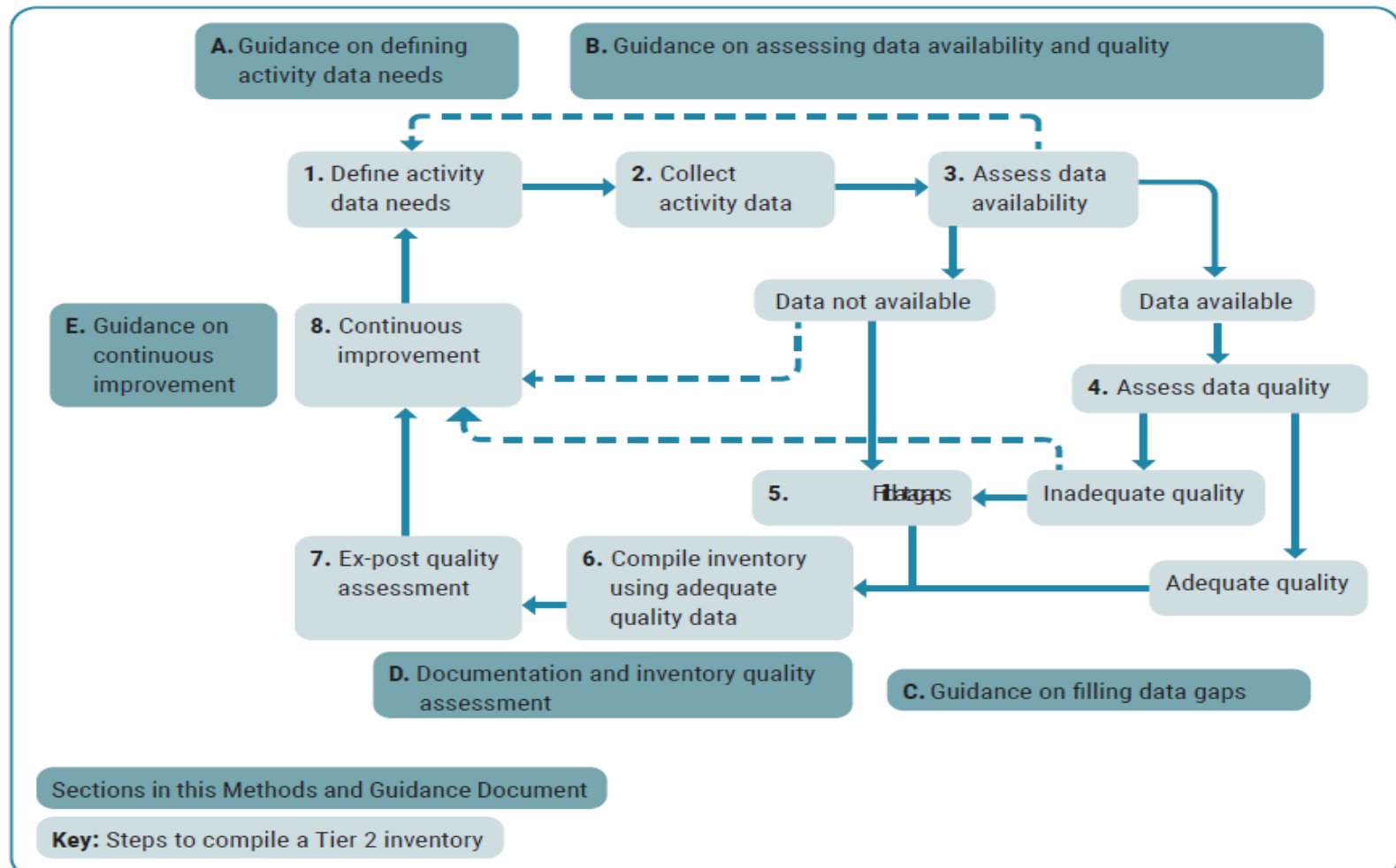
3

- Turning the raw data into a form that is useful for the inventory

Data collection for Agriculture GHG inventories

Data collection for Agriculture GHG inventories: Activity data compilation framework

➤ Figure 1: Adapted from FAO and GRA : Livestock Activity Data Guidance (L-ADG)(2020)



Data collection for Agriculture GHG inventories (i)

Framework for AD collection is based on several steps

Framework for activity data compilation is based on several steps

- **Step 1: Define activity data needs.** This step involves for example deciding what livestock subcategories to represent in the inventory, livestock population by animal type, cropland areas and amounts of fertilisers applied, area of organic soils
- **Step 2: Collect activity data.** This step involves identifying stakeholders who may be able to provide data, establishing institutional arrangements for obtaining data, and gathering all the available relevant data.(Agriculture Data templates/MoU/Data Sharing Agreements)
- **Step 3: Assess data availability.** This step involves systematically assessing what data is available to characterise livestock sub-populations in a consistent way over time or crop production data. It may result in identifying information gaps when no data is available.
- **Step 4: Assess data quality.** This step involves assessing the quality of available data. It may result in identifying data quality gaps, i.e. when there is available data but it is of inadequate quality.

Data collection for Agriculture GHG inventories (ii)

Framework for AD collection is based on several steps

- **Step 5: Fill data gaps.** This step involves filling data gaps due to lack of information or lack of adequate quality data either by using existing data or by collecting new data.
- **Step 6: Compile the inventory using adequate quality data.** Data that has been collected and assessed as of adequate quality are used to compile an initial inventory, which should be transparently documented, and quality control activities are implemented.
- **Step 7: Inventory quality assessment:** This step uses data quality assessment, quality assurance, and uncertainty analysis to identify priorities for inventory improvement.
- **Step 8: Continual improvement.** This step involves drafting and implementing an inventory improvement plan. The plan may also include efforts to improve the availability or quality of national livestock statistics to meet the needs of future inventories.

Online Data Management tools: National GHG Inventory Management System (NGHGIS)

- Increasing a number of countries are developing online National GHG Inventory Management System (NGHGIS)

An example from South Africa

- The NGHGIS has been designed to ensure transparency, consistency, comparability, completeness and accuracy of the GHG inventory. It ensures the quality of the inventory through planning, preparation and management of inventory activities.
- The NGHGIS has been set up in a web-based, collaborative platform that allows for document management, sharing and storage.
- The main components of the NGHGIS are the (a) organisational structure; (b) inventory preparation work plan where responsibilities are assigned; (c) data supplier and stakeholder lists; (d) input datasets (linked to the stakeholder list) providing information on required data, MOU's, and data due dates; (e) quality assurance and quality control (QA/QC) objectives, checks, logs and tools; (f) emission calculation method statements; (g) GHG inventory outputs which include estimation files, a trend viewer and a public website; and (h) improvement plans.
- The web-based system, new institutional arrangements and data flows have been proposed, the legal landscape has been mapped, draft MOUs for data suppliers have been drawn up and a detailed QA/QC plan has been developed.
- The NGHGIS includes the development of the data collection plan and technical guidelines for the Agriculture, Forestry and Other Land Use (AFOLU)

Key messages/Summary

- Understand the international climate policy context with regards to Agriculture GHG compilation and Reporting (UNFCCC COP Decisions and IPPC Methods and Guidance)
- Familiarise with Paris Agreement Common Tabular Tables (CTF) for Agriculture
- Use of Conceptual Framework for the Collection of Agricultural Statistics/ Data and
- Need for a legal/ institutional framework to mandate agriculture data collection on a regular basis
- Need to design a framework for activity data collection and data collection templates for agriculture
- Online data Management tools: National GHG Inventory Management System (NGHGIS) or Web Platforms