Climate MRV for Africa – Phase 2
Development of National MRV System Procedural Set-Up: Database & Reporting

Lead partner

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National Inventory Reports (NIR)

National Inventory Reports (NIR)

- National Inventory Reports (NIR) are a key input into:
  - National Communications (NC)
  - Biennial Update Reports (BUR)

- NIRs also provide Policy Makers with Key Data & Information related to:
  - Progress towards meeting international & domestic policy targets;
  - Information on mitigation actions & their effects;
  - Other information for domestic & international reporting.

NIR Documentation

NIR documentation should indicate:

- How & why data & methods selected
- Data sources & references;
- Data assessment & manipulation processes
- Why data sources were chosen for inventory
- Why other sources were not chosen
- Why recalculations were made & what they were;
- Document responses to internal & external review comments.

Source: Managing National GHG Inventory Process, National Communications Support Unit, 2005

Data & Information Templates

Information & Data Templates

Concise format is important, in order to:

- Standardize tasks;
- Ensure roles & responsibilities of all stakeholders clearly defined;
- Provide objective & efficient system for future improvements;
- Present information in consistent, transparen complete & timely manner;
- Starting point for future teams;
- Create transparency in a Party's institutional arrangements.

Source: Toolkit for non-Annex I Parties on establishing & maintaining institutional arrangements for preparing NC & BUR

Standard Reporting Templates

Standard reporting templates specify what GHG inventory or MRV should include & in what format:

- Name, location, contact information, reporting period
- Emission information (total, by source/gas/activity, uncertainty)
- Input data fuel/waste/production etc.
  - Data collection (metering data, invoices, production protocols);
  - Sampling of materials/fuels;
  - Laboratory analyses of fuels/materials;
  - Maintenance & calibration of meters;
- Methodologies & equations for calculations;
- QA/QC procedures.

Template Guidance & Locations

- UNFCCC Non-Annex I Inventory software (NAIIS) – downloadable on IPCC 1996
- IPCC Inventory Software – downloadable spreadsheets based on IPCC.
- EU Reporting Templates, download from: http://ec.europa.eu/clima/policies/ets/monitoring/index_en.htm
- Training Materials for Preparation of NCs from non-Annex I Parties, Templates for Mitigation Assessments
  - Template B: Institutional Arrangements for Mitigation Activities
  - Template C: Mitigation Assessment Methods & Data Sources
  - Template D: Mitigation Analysis Archiving System

Example 1: South African Emission factor template

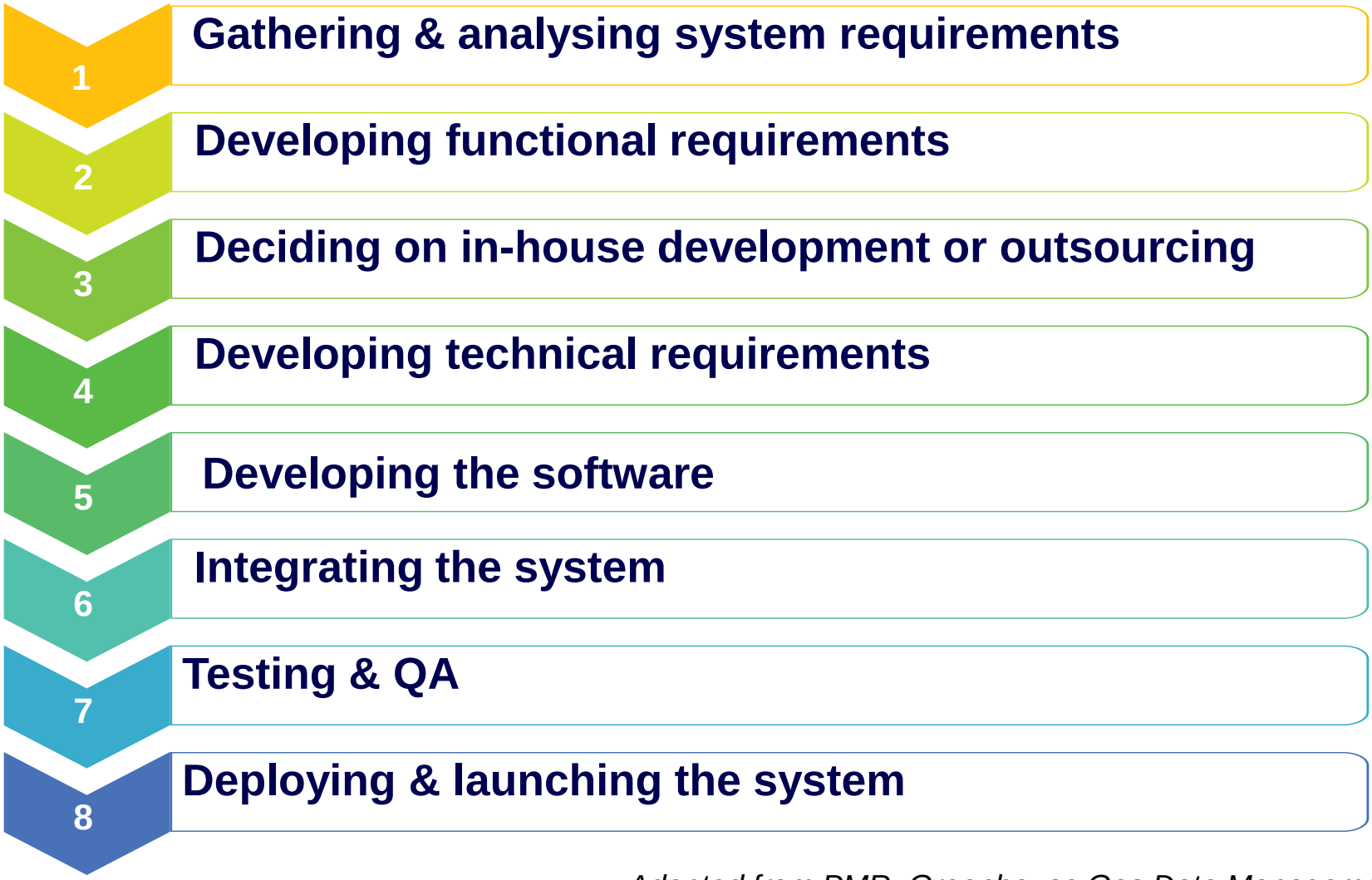
REQUEST FOR REVIEW OF EMISSION FACTOR		
Administrative information		
Data Provider		
Data Provider Country:		
Data Provider Contact		
Date Calculated		
Date submitted to competent authority by Data provider		
Technical information		
Greenhouse gas		
Parameter	Type / name	
	Value	
	Unit	
	95% confidence interval	
Method	Technique/standard	
	Date(s) of measurement	
	External QA/QC	
	Comments data provider	
	Comments others (e.g. independent verifier)	

Databases

Key considerations in designing a database

- Ensuring the system is **flexible** enough to respond to future requirements & regulatory changes;
- **Building** or **buying** a GHG data management system;
- Mitigating the **costs of acquisition, development & maintenance**;
- **Integrating data** from other data sets or systems;
- Consider **data related laws (e.g., confidentiality)** in country.

Development process for database



Adopted from PMR, Greenhouse Gas Data Management: Building Systems for Corporate/Facility-Level Reporting, 2016

Public access to web-based reporting platforms

Information	Ghana	Ethiopia	EU	US
Public access to data	X	X	X	X
Data available on centralised online platform (Web-based)	X	X	X	X
Data available on downloadable format (excel/csv/pdf)	X	X	X	X
Searchable database	X		X	X
Individual GHGs	X		X	X
Facility level		X	X	X
Corporate level				X
Sector level	X	X	X	X
Geography based	X	X	X	X

Platforms

Platforms

- A data management system provides access to data/information from various sources (hard copy to electronic programmes)
- Should also support QA/QC, track nation GHG emissions over time, & support analyses, measuring, monitoring & reporting

Data, Database, Data Management Platform

- Simple data, information storage system (e.g., computer)
- Simple data, information multiple access system (e.g., intranet on simple server serving one site with multiple users, multiple access, including VPN – virtual presence network – for off-site users)
- Multiple access, multiple site “hosted” server (physical intranet with dial in, other “hard-wired” user access)
- Web-based system (e.g., hosted server with web-based access)

Web – Based Platforms

- A web-based system can:
  - facilitate programme management
  - handle large volumes,
  - allow access to multiple users,
  - support efficient data processing
  - First step in development of web-based system is careful consideration of features it should have, & whether the system will be independent or integrated with other data management systems.

Platforms in African Countries – Ghana G-CARP

- G-CARP “Ghana’s Climate Ambitious Reporting Programme”
- Web-based virtual platform
- Database – historic data, NCs, etc. publicly accessible
- All key agencies tied to EPA node through web-based platform

Platforms in African Countries – Ethiopia CRGE

- National Policy “Climate Resilient Growth Economy (CRGE) – 2011
- Primary national development policy today
- Each key ministry has annual GHG mitigation targets & must report
- All key federal ministries have CRGE GHG targets & must report
- Each MDA linked to Min. Environment on virtual platform, evolving to national GHG reporting platform

Archiving

Archiving

- Archiving is essential for national GHG inventories, reporting & MRV – “paper trail” to track all data, sources, assumptions
- Archiving should be documented both electronically & “on paper”, all organised in a easily-followed, logical fashion, with “off-site” back-ups of electronic files.
- It is important that the archiving system is transparent, well designed & well managed.
- The archive should reside at, & be managed by, the coordinating entity (with off-site, 3rd party back-up).

Example table for archiving tasks, responsibilities, & schedule

Table D.1: Archive Tasks, Responsibilities, & Schedule for [Country] Subtask	Date Due	Task Completed	
		Initials	Date
Archiving Coordinator			
Create official archive located in [insert location of master versions of hard copy & electronic files].			
Communicate archiving plan & set deadlines.			
Collect copies of all data references.			
Request missing references from category leads.			
Compile electronic versions of spreadsheets used to estimate emissions reductions by sector.			
Collect copies of draft versions of mitigation analysis document.			
Collect copies of final versions of mitigation analysis document.			
Compile electronic versions of final versions of mitigation analysis document.			
Collect copies of expert review comment response documents from each category lead.	[EXTRACT]		
Collect copies of public review comment response documents from each category lead.			
Catalogue all documents using a unique tracking number & index.			
Collect completed Institutional Arrangements for Mitigation Activities & Documentation of Mitigation Assessment Methods & Data.			

Background materials recommended as additional reading:

- 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Volume 1 General Guidance & Reporting
- https://mitigationpartnership.net (case studies & good practice guidelines)
- The Monitoring & Reporting Regulation – General guidance for installations, EC, available at: http://ec.europa.eu/clima/policies/ets/monitoring/docs/gd1_guidance_installations_en.pdf
- Draft Technical Guidelines for MRV of GHG by Industry in South Africa, available at https://www.environment.gov.za/sites/default/files/legislations/technicalguidelines_monitoringreporting&verification_ghg.pdf
- EU reporting templates: http://ec.europa.eu/clima/policies/ets/monitoring/documentation_en.htm
- US EPA, Developing a National Greenhouse Gas Inventory System, https://www.epa.gov/climatechange/national-ghg-inventory-capacity-building#Templates

Discussion

1. From paper to "host-web server" (internet-based data/information systems) - where we started and where we are now?
2. What is possible with today's infrastructure, technology and systems?
3. How to integrate the 11 regional offices in the national GHG database (form, frequency and way of reporting)?
4. How to integrate CRGE GHG reporting with the MEFCC national GHG database: (one platform for both or two system that “talk to each other”) discuss potential benefits and problems?
5. What are the challenges in operationalising the planned web-based system: identify the skills and resources required at each stage of MRV system (from templets to database) and how to overcome barriers, if any?

Thank you!

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