



# South African \_ Development of a GHG Inventory National System & Tools

Presentation at the UNDP Webinar  
Tuesday, 22 April 2014



# Presentation Overview

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- Background (linkages with the National Climate Change Response Policy)
- How South Africa achieved a GHG Inventory System
- National Inventory Unit: Structure and Responsibility
- Process for defining roles and responsibilities within the national system
- Process based Institutional Arrangements – LULUCF sector example
- Concluding remarks

# Background

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▪ What does the National Climate Change Response Policy (NCCRP) say about the GHG Inventory:

- **Executive Summary** (key elements in the overall approach to mitigation) and section 6.1.7 – “**Establish a national system** of data collection to provide detailed, complete, accurate and up-to-date emissions data in the form of a Greenhouse Gas Inventory and a Monitoring and Evaluation System to support the analysis of the impact of mitigation measures.
- **Introduction and in relation to international obligations (UNFCCC)** – “**Monitor and periodically report to the international community the country’s GHG inventory**; steps taken and envisaged to implement the UNFCCC; and any other information relevant to the achievement of the objective of the UNFCCC, including information relevant for the calculation of global emission trends”
- **Section 6.7** – “The DEA in partnership with the South African Weather Service, the host of the SAAQIS, will **prepare a GHG Emissions Inventory annually**. The inventory will **conform to the IPCC’s 2006** or later guidelines, and will be **periodically reviewed by an international team of experts**. The inventory will also undertake and report analyses of emissions trends, including detailed reporting on changes in emissions intensity in the economy and a comparison of actual GHG emissions against the benchmark national GHG emission trajectory range described in section 6.4”
- Section 6.7 – “The **emissions inventory will be a web-based GHG Emission Reporting System** and **will form part of the National Atmospheric Emission Inventory component of the SAAQIS**. It will be developed, tested and commissioned within two years of the publication of this policy”

# How South Africa achieved a GHG Inventory System

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- Approach to designing the national system
  - An assessment of national circumstances (to identify strengths and weaknesses)
  - **Institutional mapping and mandate analysis – reduces the cost of generating data particularly when government research and information institutions are involved**
  - Motivate internally for establishment of a national Inventory Unit (NIU) – very important to build on existing capacity
- Emission Inventory tools
  - Were possible try to align with existing tools (e.g. air quality management tools - this helps to reduce costs and reporting burden for industry)
  - In the South African case, more than 80% of industry reporting for air quality account for more than 70% of greenhouse gas emissions

# How South Africa achieved a GHG Inventory System (cont.)

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## ■ Data collection processes

- We have build data collection processes based on our previous ad-hoc inventory compilation;
- Signing of MoUs with data providers, reporting guidelines for industry and establishment of quality assurance/quality control (QA/QC) procedures
- For the past three years, we held 1-week long free training courses on the use of IPCC guidelines so that data providers and relevant government officials understand the data we need and how it can assist with their planning as well
- Working with emitting sectors to define reporting guidelines that will be followed over time and documented

## ■ Inventory management process

- Defined job descriptions for members of the National Inventory Unit (sectoral –experts are key to the functioning of the national inventory system)
- Developed an Electronic Document Management System (EDMS) to document sources of data, inventory compilation, and facilitation of the QA/QC process for all IPCC sectors)
- The EDMS is also used as an inventory planning and archiving tool as well.

# National Inventory Unit: Structure & Responsibility

	Structure	Responsibilities
SAGIMS Management	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Inventory Manager</div>	Internal & External Communication; Facilitate Emission Factor submissions to EFDB; Strengthen relationships with data providers; Manager SAGIMS review process (see sec D2); Review SAGIMS operation policy; Monitor and review ERP's; Ensure effective and efficient operation of SAGIMS;
Data Collection & Inventory Compilation	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: 150px; height: 40px; margin: 0 auto;">Energy &amp; IPPU specialist</div> </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: 150px; height: 40px; margin: 0 auto;">Agriculture &amp; Forestry Specialist</div> </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: 150px; height: 40px; margin: 0 auto;">Waste specialist</div> </div> </div>	Preparation of Data Collection Plans; Liaise with data providers; Provide technical support to data providers; Keep abreast with IPCC methodology Developments; Develop inventory improvement plans; Prepare annual inventory plans.
Information Management	<div style="border: 2px solid green; padding: 10px; width: fit-content; margin: 0 auto;"> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">System Administrator</div> <p style="color: red; font-weight: bold; margin-top: 5px;">Within SAAQIS</p> </div>	Effective and efficient data management; Resolve of SAGIMS system errors; Ensure quality control of data in accordance with SAAQIS requirements; Inform on SAGIMS element requirements (e.g. auditing); Prepare reports as per the request on inventory manager or specialists.

# EI reporting Guidelines (how to arrive at them and what they influence)

## INPUTS

### IPCC Guidelines



#### Technical Guidelines:

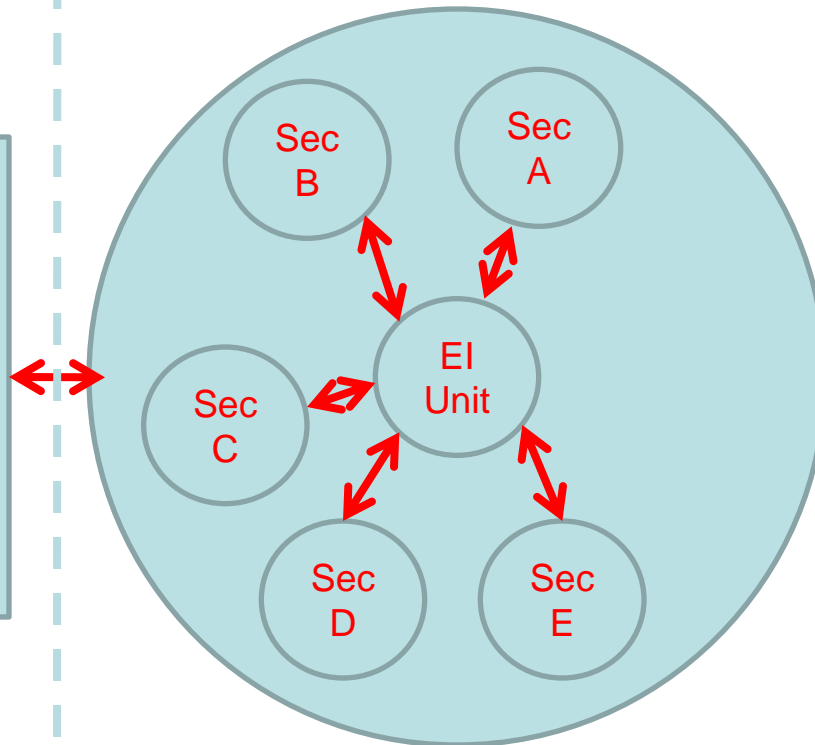
- Methodologies
- Emission Factors
- Activity Data description
- Heuristics (rule of thumb or Assumptions)
- Good Practice Guidance (QA/QC, Uncertainty, Time series guidance, Recalculations, etc)



AP Technical Guidelines  
(e.g. US-EPA\_AP42)

**Here we have to address the question of which technical guidelines will become mandatory**

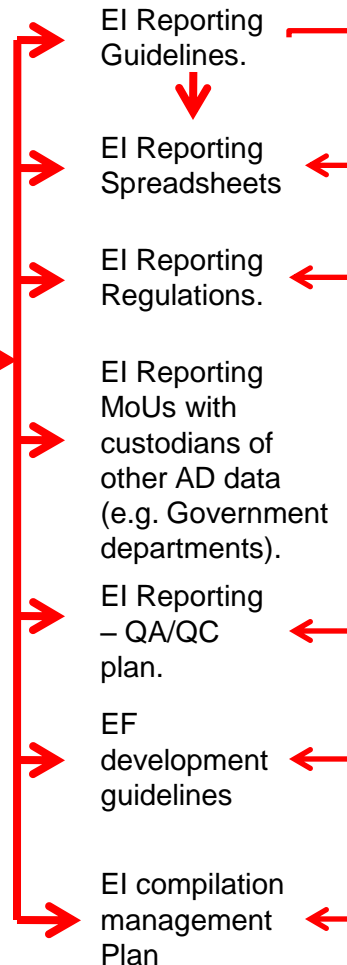
## PROCESS



Umoya-Nilu and EI unit works with Sectors to develop Sectoral reporting spreadsheets.

## OUTPUTS

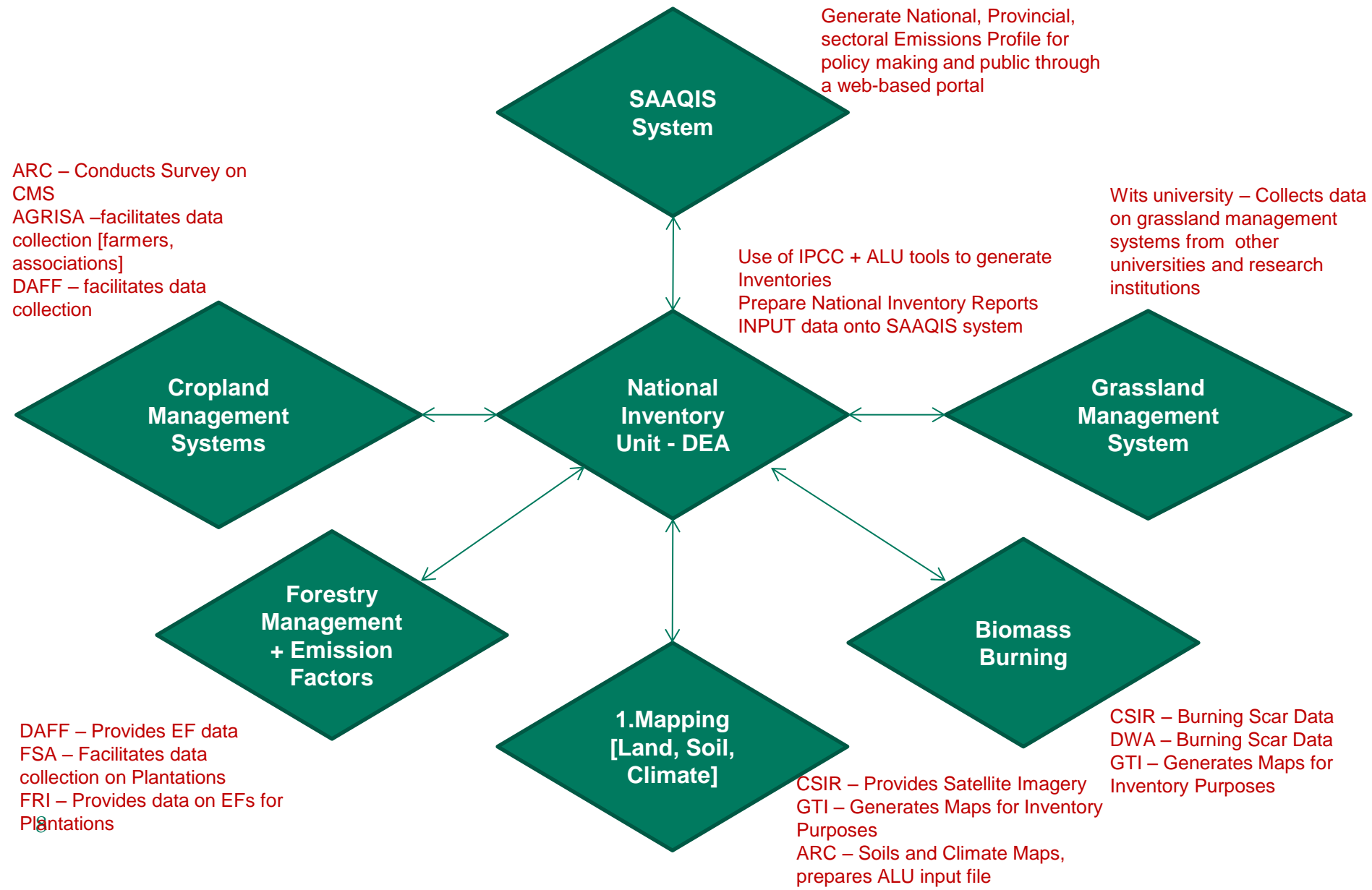
EI Reporting Guidelines.



environmental affairs

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA

# IAs - Process Orientated LULUCF (Process 2)





# Concluding remarks

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- We have developed a national system that is founded on:
  - Our previous ad-hoc inventory compilation process
  - National circumstances that makes the national system unique and responsive to our data collection challenges
- In a developing country like ours, it is fundamentally important that we build on existing institutions that have been set-up to carry mandates that impact on the compilation of the GHG inventory
- Data collection tools are essential if the intention is to develop a sustainable GHG inventory compilation process
- A well-defined stakeholder/sector engagement process ensures that data collection is informed by sector-specific methodological guidance. This process is also important for the purposes of developing GHG inventory tools

**Thank You**  
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