Good Practice on data collection and documentation

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International Partnership on Mitigation and MRV
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Presentation overview

- Background
- Data collection process (IAs, web-based reporting tool, regulations)
- Documentation of procedures (Tools used)
- Conclusion

Background

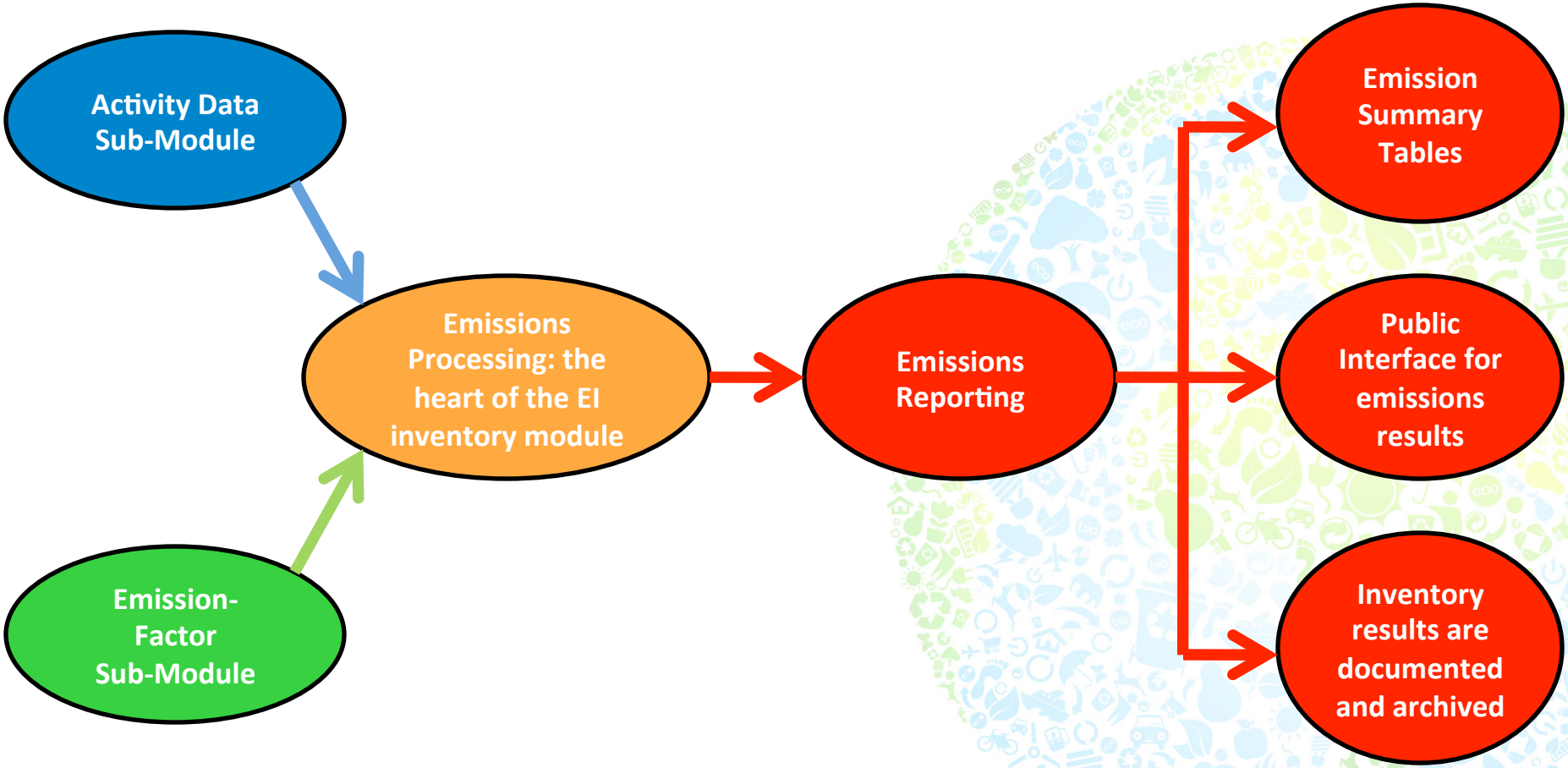
- Recently (2014) published the forth national GHG inventory for the Period 2000-2010
- Formed part of the BUR
- Currently compiling the fifth inventory which will the period 2000-2012 (Draft 2015)
- Will form part of the TNC
- Currently in the process of publishing mandatory reporting for GHGs
- Currently in the process of implementing the national system project (formalise IAs, formalise procedures for GHG inventory compilation)

Data collection Process

Data collection Process

- Formal arrangements with data holders (MoUs, MoAs)
- Confidentiality agreements for sensitive industries such as the aluminium production sector
- Implementation of the web-based reporting system (2015)
- Currently in the process of publishing Mandatory reporting regulations for GHG

Centralized Web-based EI system elements

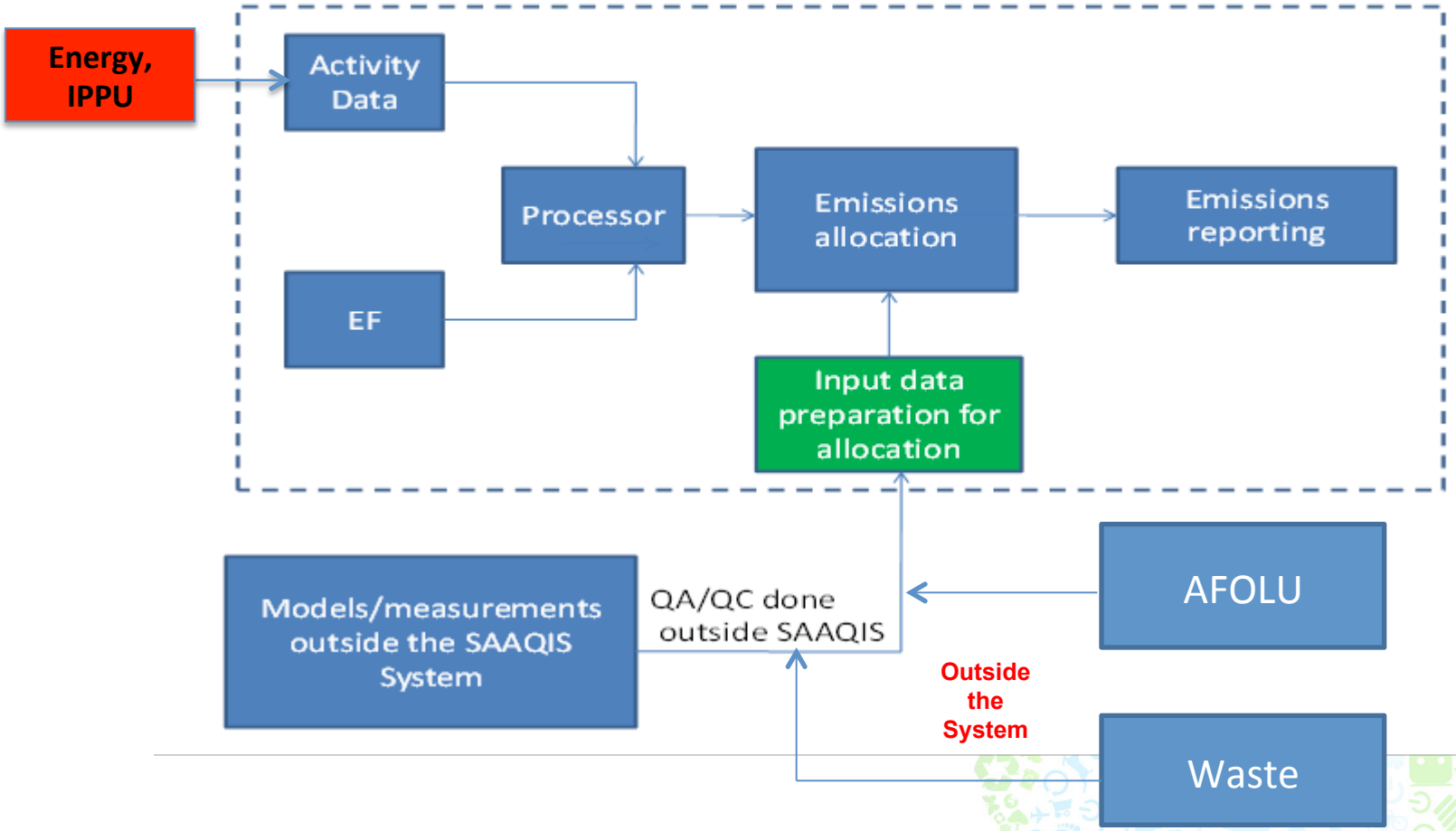


National Atmospheric Emissions Inventory System

- Emissions associated with Energy and Industrial process activities are calculated within the system
- Emissions from complex sectors such as Waste, Agriculture and Land Use and calculated outside the system
- Outputs from these processes are fed into the system so that the NAEIS can generate a national emissions profile
- The process used to collect, analyse and report data for the Agriculture sector is defined below
- The process is defined such that it meets the requirements of the IPCC guidelines and NAEIS timelines

National Atmospheric Emissions Inventory System

The NAEIS and the IPCC sectors



DEA (National Entity)

Chief Directorate: Monitoring and Evaluation (GHG Inventory Unit)

ENERGY

- DoE (Energy balances)
- DMR (Primary fuels)
- Eskom (Power generation)
- Coaltech (Solid Fugitives)
- SAPIA (Refining + Secondary fuels)
- Chamber of Mines (Mining)
- NERSA (IPPs)
- DoT (Transport)

IPPU

- BUSA (All source categories)
- SAISI (Iron &Steel)
- ACMP (Cement)
- FAPA (Ferroalloys)
- DMR (Metal & Mineral Industries)

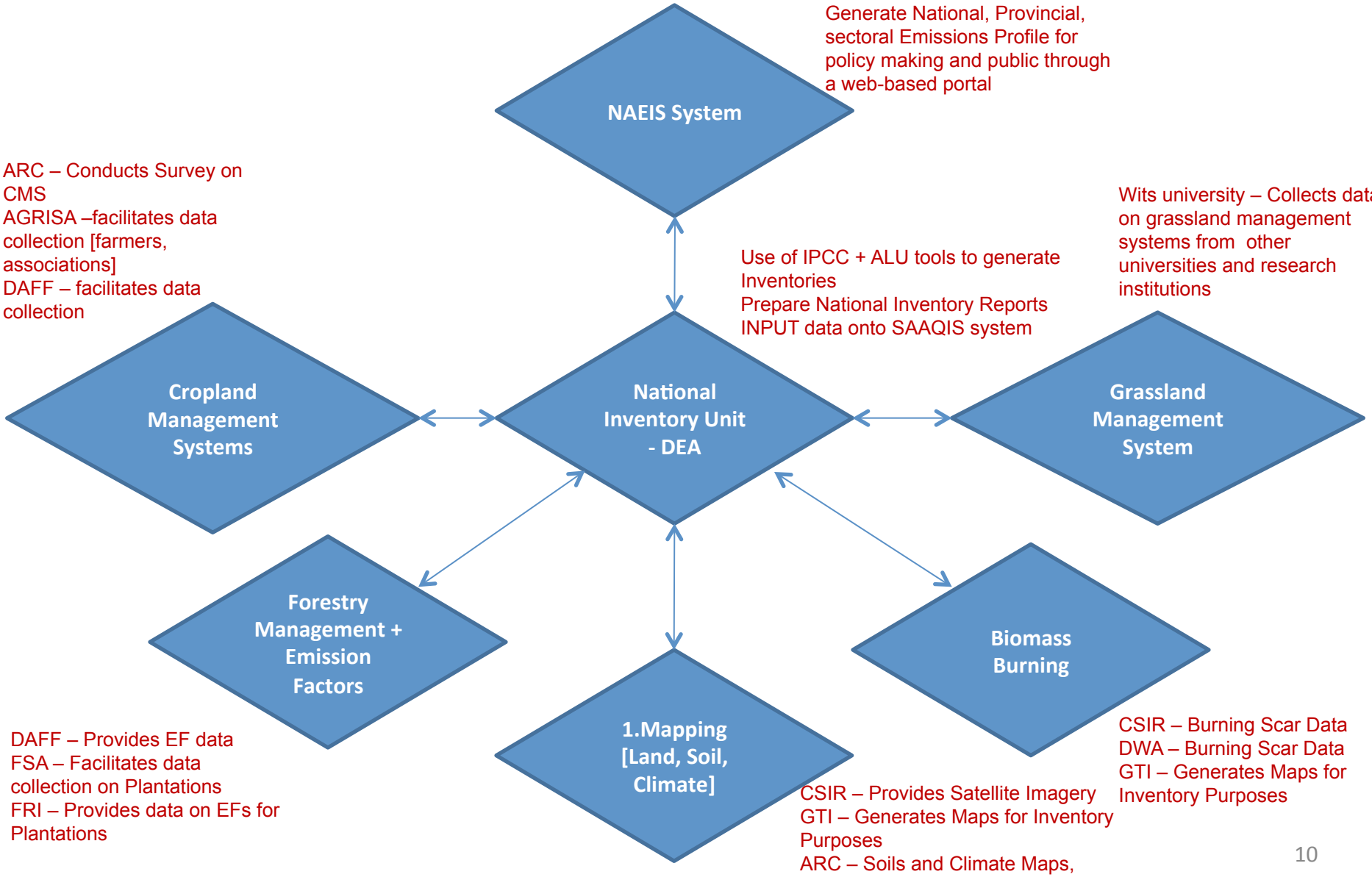
AFOLU

- DAFF
- GTI (Land UseMaps)
- ARC (Agriculture)
- FSA (Plantations)
- FAO (Agric stats)
- AgriSA
- UP & TUT (Research)
- Wits (Inventory Compilation)
- DEA GIS Unit

WASTE

- CSIR (Waste Inventory)
- DEA Waste Unit (Waste info)
- StatsSA (waste parameters)
- DWA (Wastewater)

IAs – Process Orientated LULUCF



Documentation Process

Documentation Process

- The documentation process assist inventory teams in documenting and reporting methodologies, datasets (including activity data and emission factors) and assumptions used to estimate emissions and removals from each category.
- Excel spread sheets to document the GHG inventory compilation procedures
- The USEPA templates are also used for the documentation of procedures for data collection
- Various authors of the four sectors are responsible for documenting their relevant procedures
- Share the documentation spread sheets on Dropbox
- As part of the national system project, developing an Inventory management tool, to ensure proper documentation and archiving of those procedures

Category code	3A1 and 3A2												
Sheet	1 of 1												
Year	2010 METADATA												
Species/Livestock category	Species/Livestock subcaegory	Number of animals (head) N(T)				Emission factor for Enteric Fermentation (kg head^{-1} yr^{-1}) $EF_{(T)}$			Emission factor for Manure Management (kg head^{-1} yr^{-1}) $EF_{(T)}$				
T		responsible for data input	Data calculations and sources	Recalculations	Data and reference links	Person responsible for data input	Data calculations and sources	Data and reference links	Person responsible for data input	Data calculations and sources	Recalculations	Data referen links	
Other Cattle	Commercial beef - bulls	LS	**Method for 2010 inventory:** Commercial population data were obtained from AAS (2013). Based on numbers from DAFF the communal population was estimated to be 68.68% of the commercial number (see communal spreadsheet); therefore the total catle population is Commercial + communal + feedlot. Feedlot data was obtained from the Feedlot Association of SA. The communal herd composition is not given so it is assumed to be the same as the commercial herd.	**Recalculation method for 2012 inventory:** Commercial population was obtained from AAS (2013; Table 59). This number was taken to include feedlot numbers as indicated in clarification note from DAFF. A feedlot category needs to be seperated out of the national numbers. Feedlot cattle population data was obtained from SAFA (Dave Ford, Pers. Comm.) and it was assumed that feedlot cattle consist equally of calves, heifers and young oxen (Du Toit, Pers. Comm.). Total cattle (beef+ dairy) was taken from AAS (2013; Table 58). Communal population was calculated to be total cattle population - (commercial beef + commercial diary) as indicated in the clarification note from DAFF. To determine the herd composition of communal cattle the ratio of communal to commercial (minus feedlot) was determined and applied to each animal category.	**AAS 2013** AFOLU_Agriculture_Supporting_Agricultural Abstacts 2013.pdf **DAFF clarification note** AFOLU_Agriculture_Supporting_Livestock enquiry Feb 15.docx (obtained from Rona Beukes (DAFF)) **Communal spread sheet** AFOLU_Agriculture_Supporting_LivstkNoComNov09.xls (Obtained from DAFF website in 2009, but has since been taken down.) **Livestock population calculation spreadsheet** AFOLU_Agriculture_Supporting_LivestockPopulationData_2012.xlsx	LS	EF's were taken directly from Du Toit et al. (2013).	**Du Toit et al. (2013)** AFOLU_Agriculture_Supporting_Du Toit et al_Cattle **EF data spread sheet** AFOLU_Agriculture_Supporting_LivestockPopulationData	Luanne Stevens	EF's were taken directly from Du Toit et al. (2013).		**Du Toit et al (2013)** AFOLU_Agricultupporting_Du To al_Cattle **EF data sprea sheet** AFOLU_Agricultupporting_Livestcopulation Data_20
	Commercial beef - calves												
	feedlot												
	Commercial beef - heifers												
	Commercial beef - mature cow												
	Commercial beef - mature oxen												
	Commercial beef - young oxen												
	Subsistence beef - bulls												
	Subsistence beef - calves												
	Subsistence beef - heifers												
	Subsistence beef - mature cow												
	Subsistence beef - mature oxen												
	Subsistence beef - young oxen												
Buffalo													

Contents | 3A1 EntericManureCH4 | 3A2 ManureMN2O | 3B1a.1 FL remaining FL | 3B1a.2 FL remaining FL | 3B1a.3 FL

Sector	USEPA Template Energy Sector
Category	Fuel Combustion – Energy Industries – Main Activity Electricity and heat production
Key Category? [Yes or No]	Yes: Electricity generation is the largest key GHG emission source in South Africa
Category Description/ Definition	Main activity electricity refers to public electricity plants that feed into the national grid and auto electricity producers that are industrial companies operating and producing their own electricity. This category includes electricity produced both by the public and auto electricity producers.
Country Detail	Activity data on fuel consumption for public electricity generation was provided by the national power utility, Eskom and auto-electricity producers (SASOL, petroSA) provided activity data for auto-electricity production. A Tier 2 methodology was applied to estimate CO2 emissions from coal consumed Tier 1 for CH4 and N2O from coal Tier 1 for Diesel Oil and Other Kerosene

Conclusion

- Implementation of the national system is quite important as it will formalise the process of GHG emissions inventory compilation
- Promulgation of mandatory reporting by 2015 (will in data collection from industry)
- Documentation of procedures is importance as it future inventory teams can refer to the completed documentation for each category to determine what information was collected, how the data were obtained, and what methods were used.

THANK YOU

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