



FACILITATIVE SHARING OF VIEWS

NIGERIA

**Bonn, Germany
19 June 2019**



Outline

- **National Context**
- **GHG Inventory**
- **Mitigation Action and Support**
- **Constraints / Gaps**
- **Support Needed and Received**
- **Responses to Questions**



National Context



Location Coordinates:

- **Extreme east of Gulf of Guinea**
- **West Coast of Africa**
- **Latitude: Between 3°15'to13°30'N**
- **Longitude: Between 2°59'to15°00'E**

Landmass and Population:

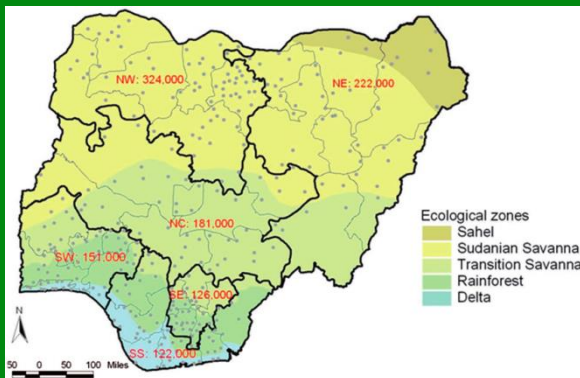
- **923,768 square km**
- **201 million population (largest in Africa)**

Climate:

- **Low-land Humid Tropics**
- **High Temperature – year round**
- **From Wet Coastal Area – rainfall >3,500 mm**
- **To Northwest and Northeast Sahel Region – annual rainfall < 600m**

Economy:

- **Heavily Dependent on O&G**
- **90% Export on O&G**





Reporting to Convention and Compliance



FNC → **2003**

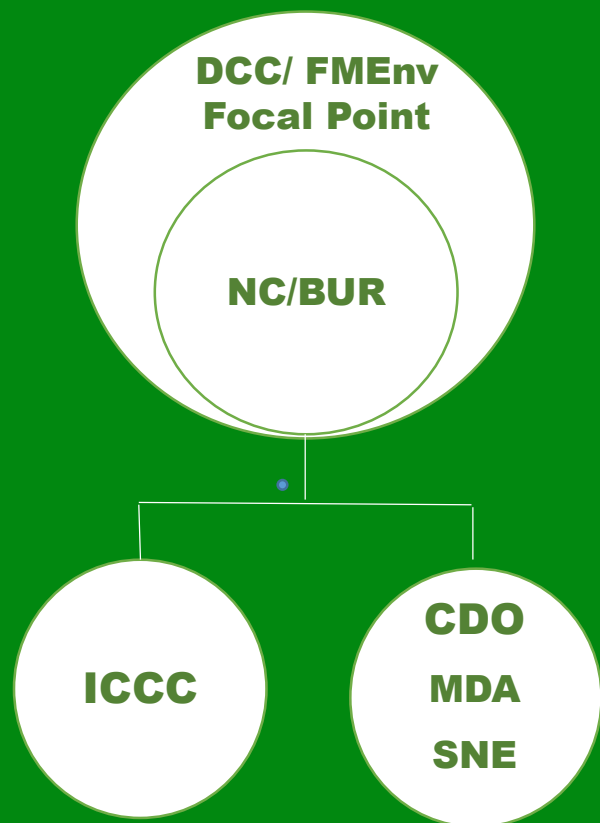
SNC → **2014**

BUR1 → **2018**

TNC → **Dec, 2019**

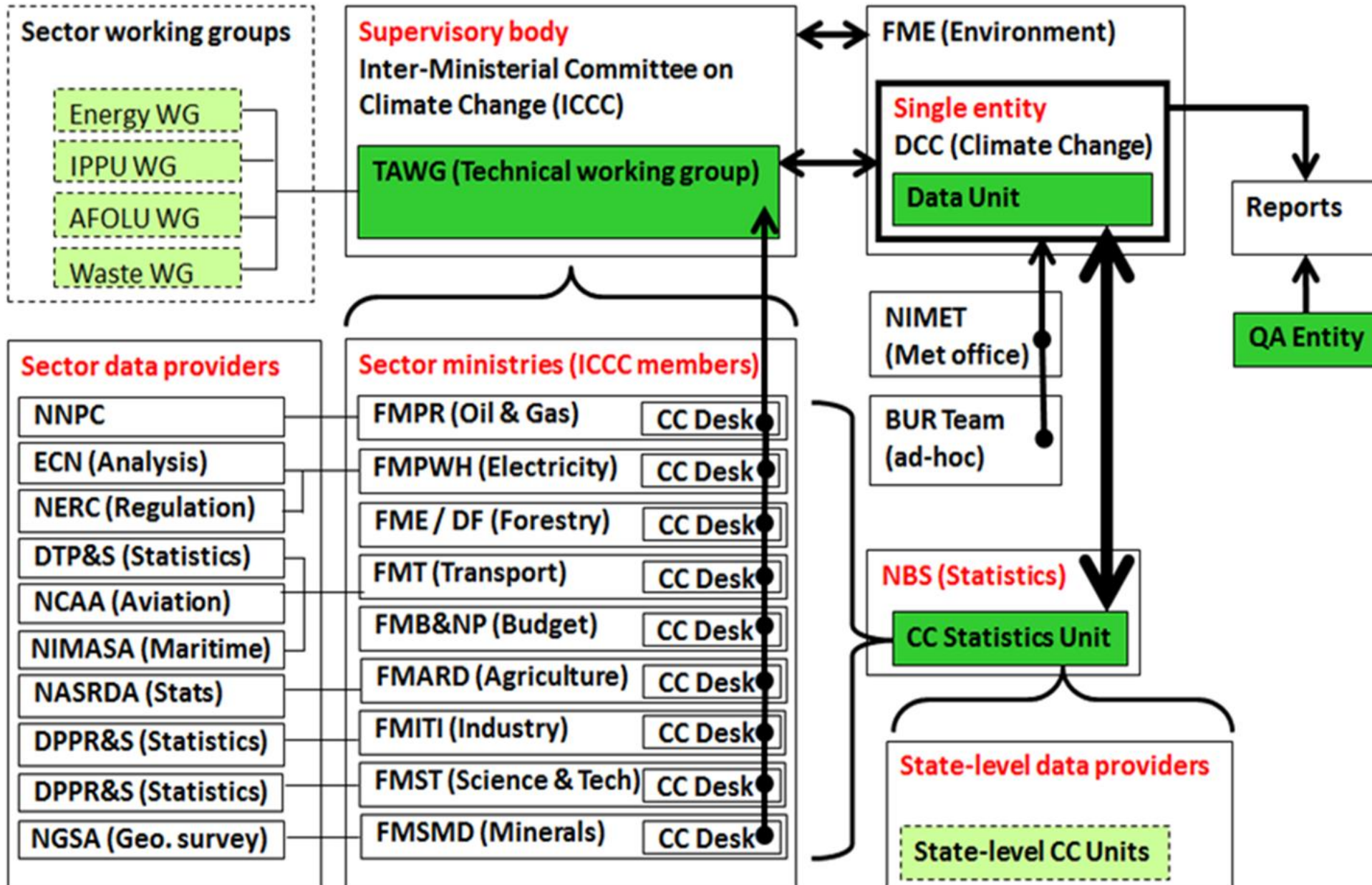


Institutional Arrangement

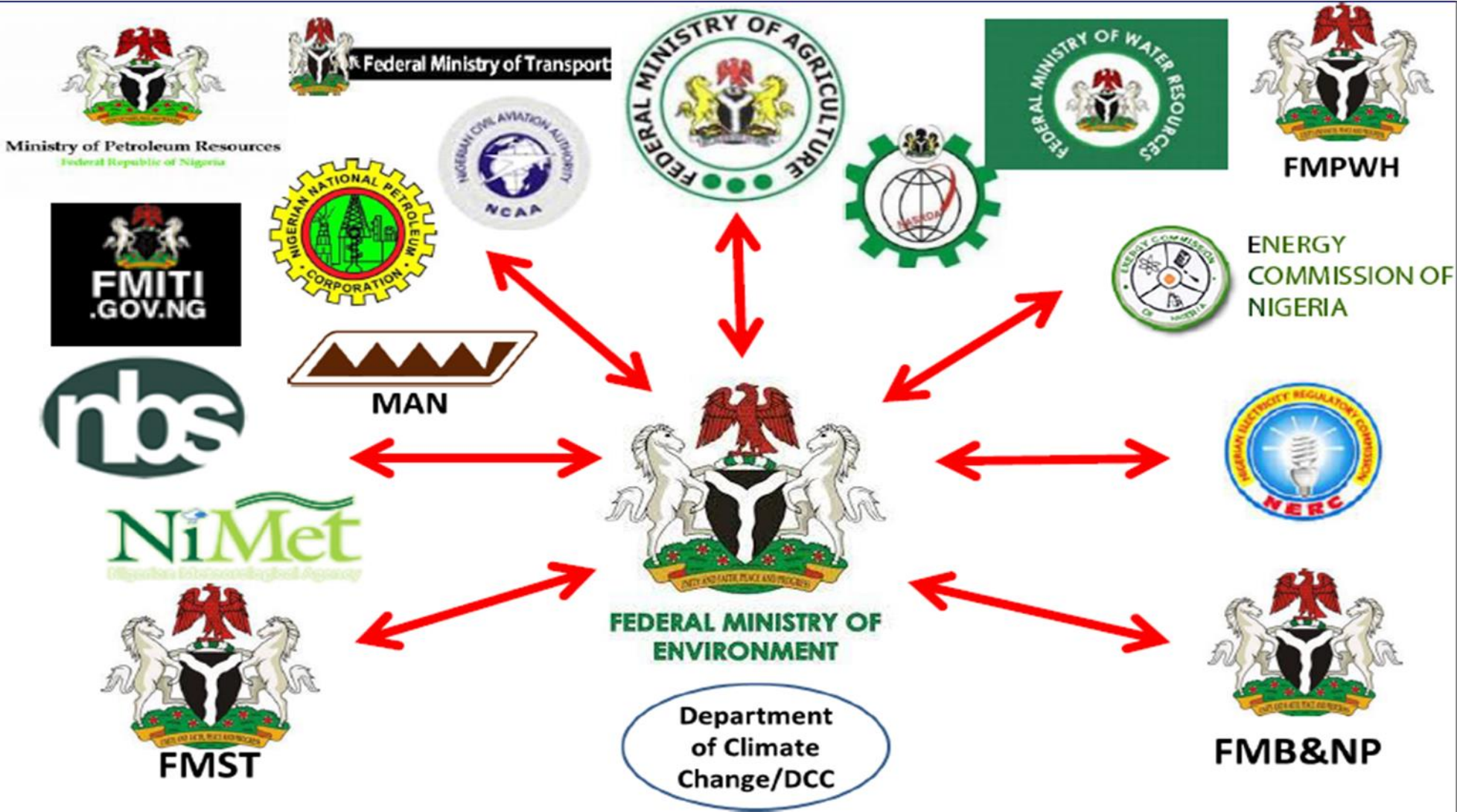


- **DCC / FMEnv – Focal Point**
- **NC/BUR Project Mgmt. Team**
 - **Supervised by Project Coordinator/ FP**
- **Interministerial Committee on Climate Change (ICCC)**
 - **for coordination**
- **ICCC**
 - **data providers / part of the WGs**
- **Climate Desk Officer (CDO)**
 - **all key MDAs and Subnational Entities**

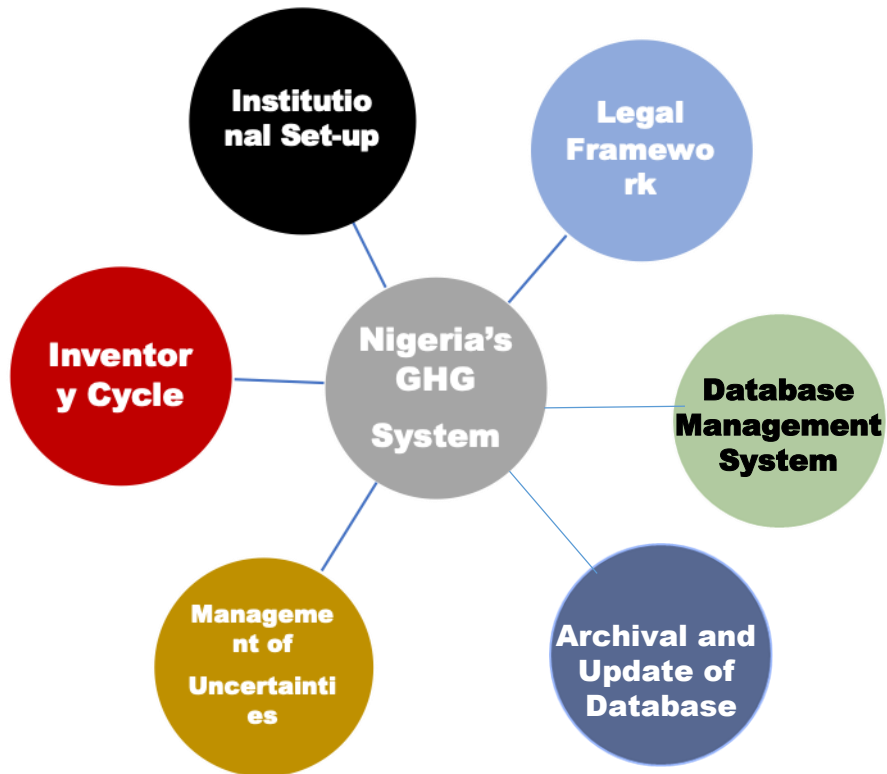
Institutional Set-up



Institutions involved in BUR preparation



Greenhouse Gas Inventory



- **Nigerian GHG Trend**

- **Estimates from 2000-2015**

- **From 4 IPCC sectors:**

- * **Energy** * **IPPU** * **AFOLU** * **Waste**

- **Emission Compilation**

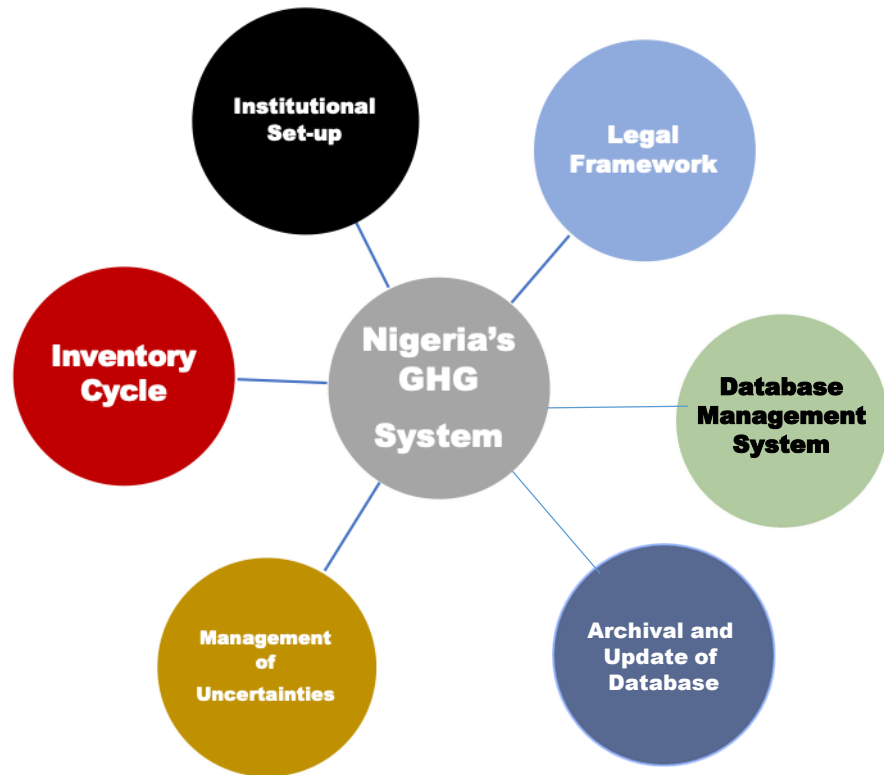
- **2006 IPCC Guidelines, IPCC Good Practice Guidelines, Uncertainty Management**

- **TACCC Assurances**

- **Tier 1: Using IPCC default emission factors (EFs)**

- **Data Source: National and Int'l Institutions / High priority for In-country generated data**

Emission Results



- **Nigerian GHG Trend**

- **Estimates from 2000-2015**

- **From 4 IPCC sectors:**

*** Energy * IPPU * AFOLU * Waste**

↓

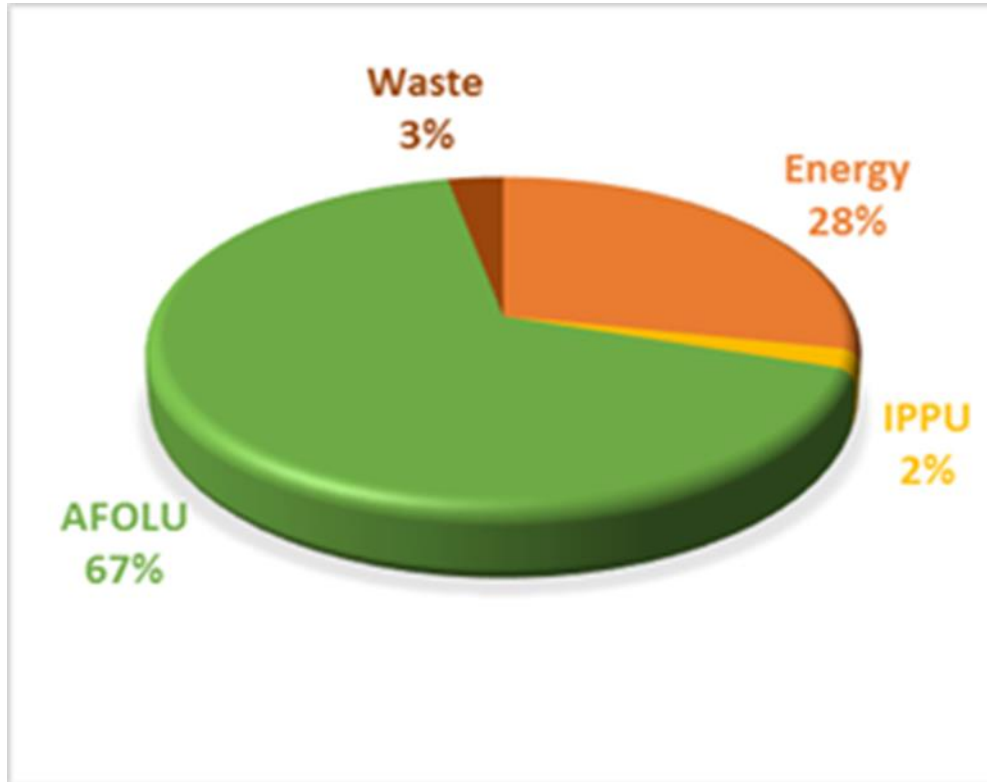
Sector	Emission (Gg CO₂-eq)	%
AFOLU	476,949	67
Energy	201,319	28.2
Waste	21,103	3.00
IPPU	13,267	1.8
Total	712,638	100



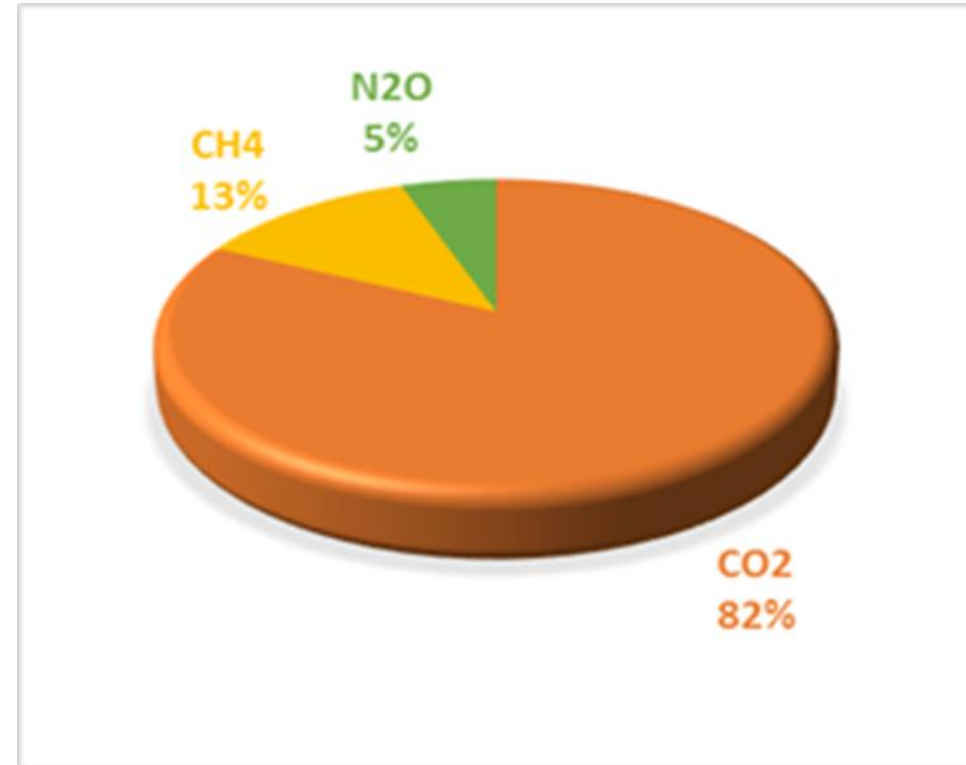
GHG Emission Contribution



National Emissions – by sector



National Emissions – by gas classification





Energy Sector

Energy Sector Emissions:

- Fuel Combustion**
- Fugitive Emissions**

➤ Activities

- Upstream Energy Exploration and Exploitation**
 - Natural Gas and Fuel Oils**
 - Flaring for Oil and Gas Production**
 - Methane in Coal Mining Process**
- Primary Energy Source Transformation for Refineries & Power Plants**
 - Flaring and Fuel Combustion for use in Refineries and Power Plants**



Energy Sector (Cont'd)

- **Activities (Cont'd)**
- **Fuel Transmission and Distribution**
 - **Fuel Combustion – Electrical Power Generation for Pipelines**
 - **Fuel Combustion - Transport trucks/vessels,**
 - **Fugitive Emissions – Transmission and Distribution**
- **Fuel Use - Stationary and Mobile Applications:**
 - **Fuel Combustion - Transport**
 - **Fuel Combustion - On-site Power Plants for Industries**



Energy Sector (Cont'd)

Energy Sector GHG Emission Trends (2000-2015)

Category Sector

- **Increase: 84,815 Gg CO₂-eq to 201,320 Gg CO₂-eq**

Source Category

- **Fuel Combustion Activities -198% Increase**
- **Fugitive Emissions – 26% Increase**

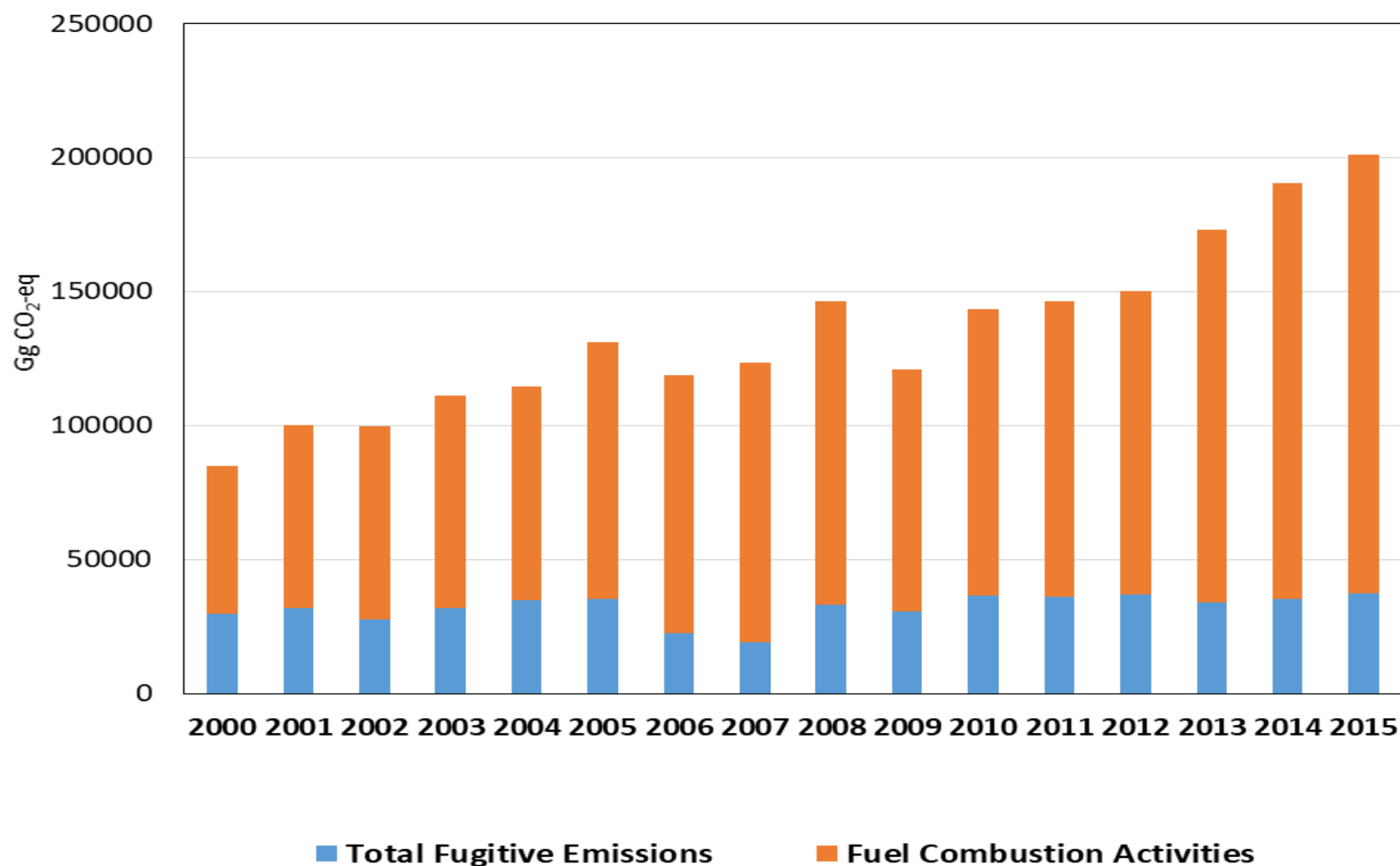
2015 Emissions Source %

- **Fuel Combustion – 81.5%**
- **Fugitive Emissions – 18.5%**



Energy Sector (Cont'd)

Energy Sector GHG Emission Trends (2000-2015)





Agriculture Forest and Other Land Use (AFOLU)



AFOLU

- **Largest Employer of Labour**
- **A main contributor of GHG in Nigeria**
- **4 subcategories:**

- **Agricultural Production**
- **Livestock**
- **Aggregated Sources of non-CO₂ emissions from land**
- **Others**

Note – For this Inventory:

- **Livestock and Aggregated Sources of non-CO₂ emissions from land emissions**
-Fully covered
- **Land emissions from changes within forestland**
- Estimated
- **Others, removals from harvested wood products (HWP) -**
Estimated



Emissions from Livestock

Emissions Generation in this Sector:

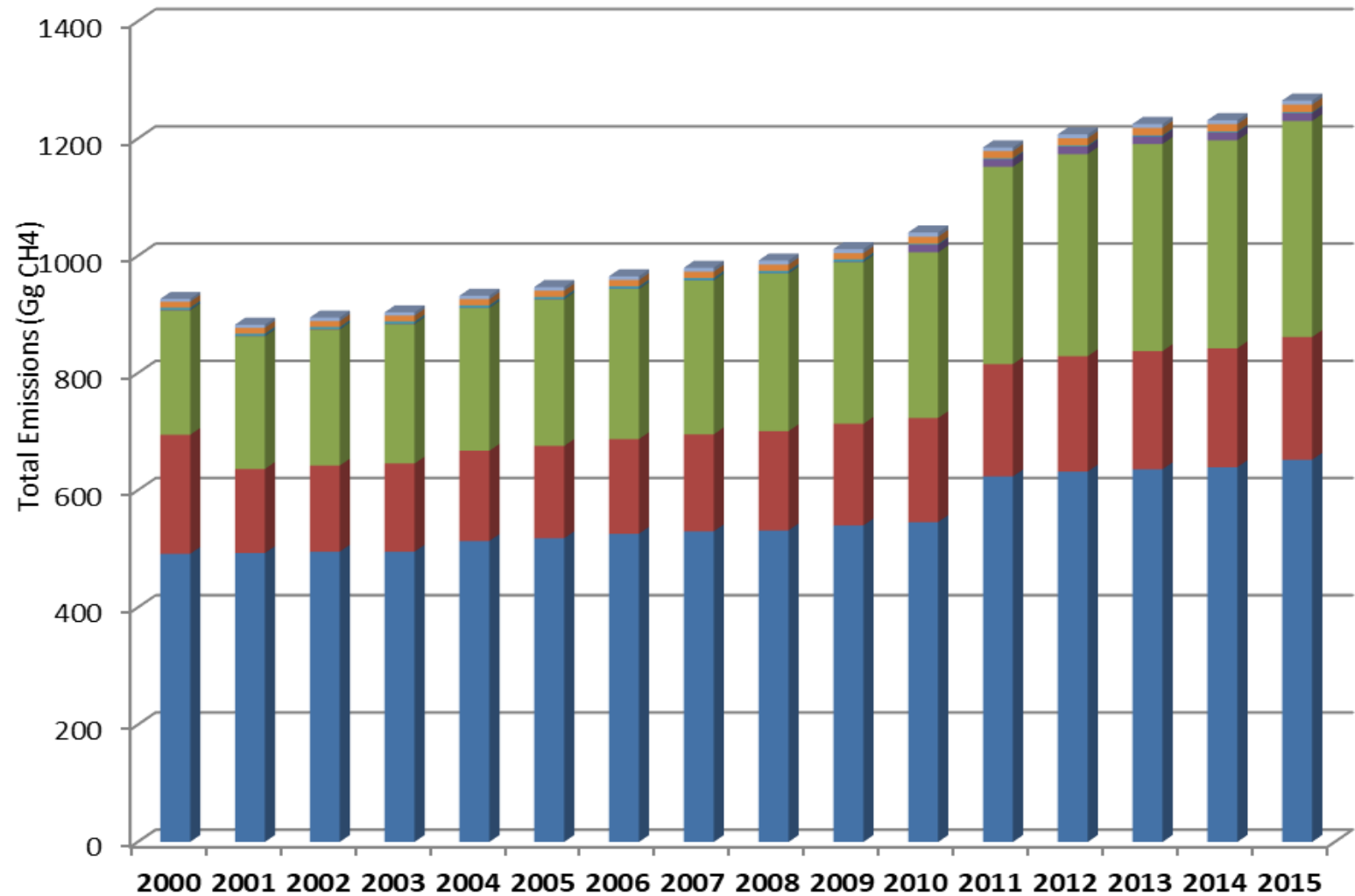
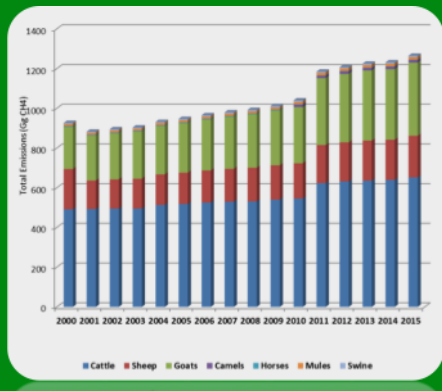
- **Enteric Fermentation**
 - **90% of Total Emission in this sector**
 - **Manure Management from Domestic Animals**
 - **10% Total Emission in this sector**
- (Cattle, Sheep, Goats, Horses, Donkeys, Poultry)**

Total Emissions

- **> 21,877 Gg CO₂-eq (Year 2000) to 29,375 Gg CO₂-eq (Year 2015)**
- **34% Increase**



Emissions from Livestock



■ Cattle ■ Sheep ■ Goats ■ Camels ■ Horses ■ Mules ■ Swine



Emissions Trend in Forestland

CO₂ Emissions

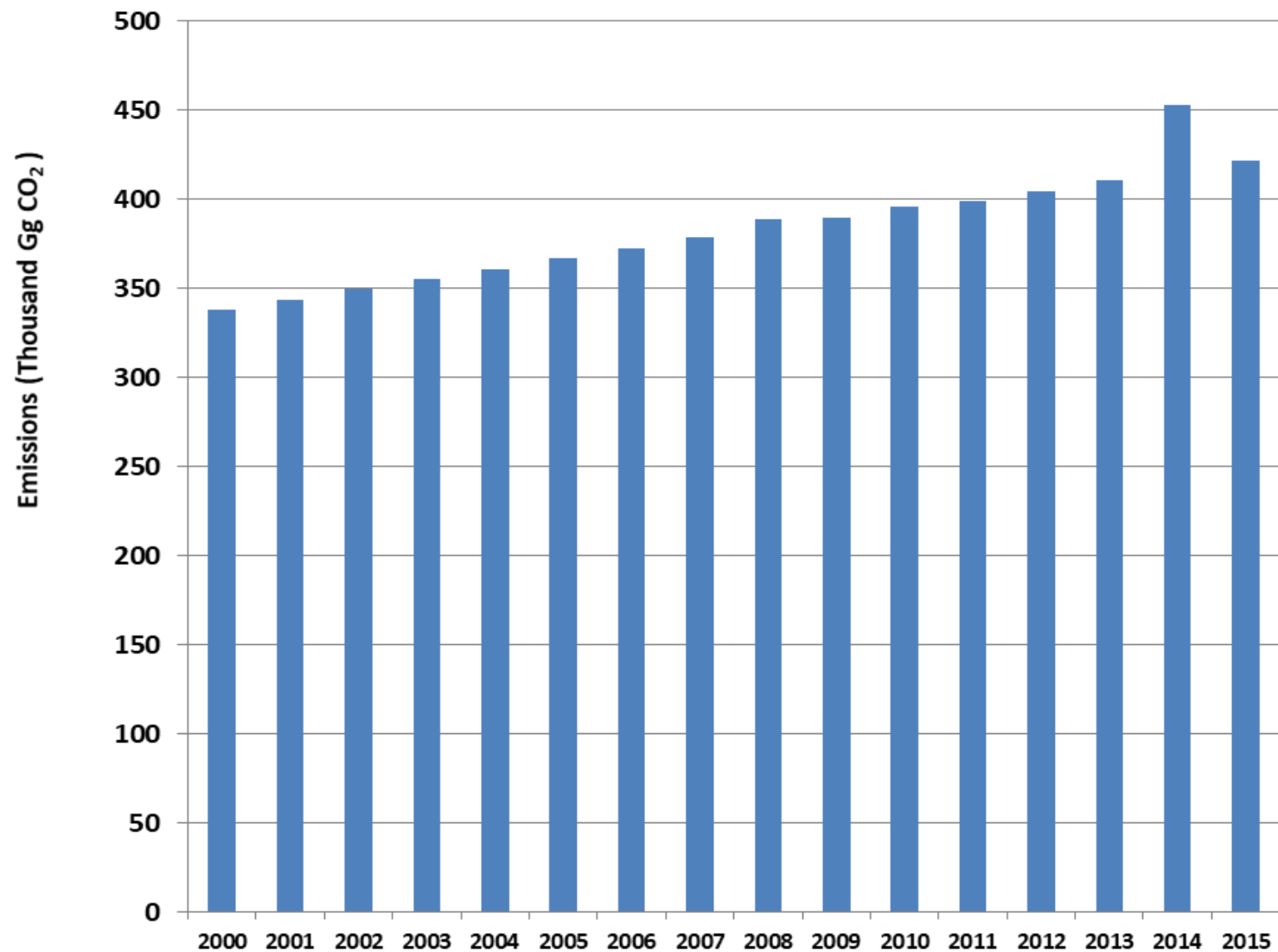
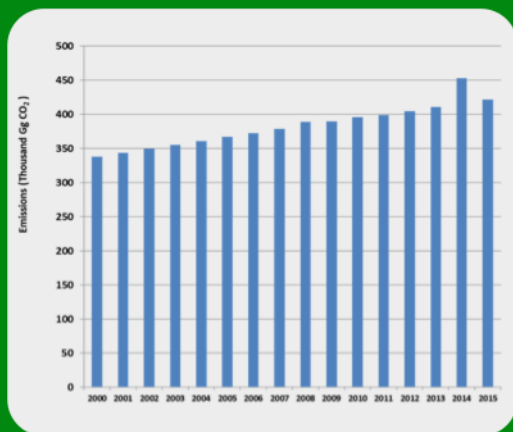
- **Human Induced Modification of Landscape**
- **Conversion of land categories (IPCC land classes)**
 - **Forestland – 90% of Total Sector Emissions**
 - **Cropland**
 - **Grassland**
 - **Wetlands**
 - **Settlement**
 - **Other Land Use**

General increase in net CO₂ Emissions

- **Due to increase in deforestation rate / Wood Removals**
- **Aggregated Sources and non- CO₂ Emissions**
 - **Biomass Burning, Direct and Indirect Emissions of N₂O**
 - **Manure Management**
 - **CH₄ from rice cultivation**



Emissions Trend in Forestland



Mitigation Actions in Nigeria



Energy



- **Renewable energy**
- **Multi-cycle power stations**
- **Scalable power stations of 20-50MW**
- **Enforced energy efficiency**
- **Use of natural gas rather than liquid fuels**
- **Modal shift from air to high speed rail**
- **Reform petrol/ diesel subsidies**
- **Moving freight to rail**
- **Exploring water ways with efficient high-bred Ferryboats**
- **Urban transit**
- **Improved enforcement of gas flaring restrictions**
- **Development of Gas-to-Power Plants at Gas Flare Sites (micro grid)**
- **Blending 10% by volume of Fuel-Ethanol with Gasoline (E10) and 20%**
- **by volume of Biodiesel with Petroleum Diesel (B20) for Transportation Fuels.**

Mitigation Actions in Nigeria

AFOLU



Agriculture – major anthropogenic GHG Contributor



- Important Role:

- **Oxidation of biomass, organic matter and fossil fuels combustion of in Agric Automation.**

- Land Use Change and Forestry Sector

- **Significant contribution to net GHG**
 - **Nigeria – an agrarian country –vegetation interference**
- **Rapid change in land use**
 - **Extensive deforestation**
 - **De-vegetation**
 - **Expansion of cultural features (such as houses)**

Mitigation Response-NDC

- **Stop use of charcoal**
- **Climate Smart Agriculture**

Mitigation Actions in Nigeria

Waste

- **Controlled and engineered landfills**
- **Integrated solid waste management systems**
- **Efficient waste water recycling plants**
- **Efficient and effective solid waste collection system**



Estimated Emission Reduction

-By Activity Area



Measure	Potential GHG reduction (million tonnes per year in 2030)
Economy-wide energy efficiency	179
Work toward ending of gas flaring	64
Climate smart agriculture	74
Reduce transmission losses	26
Efficient gas power stations	102
Renewable energy	31



**Constraints and gaps, and related
technology, financial, technical
and capacity-building needs,
including a description of support
needed and received**



Gaps and Constraints

Technology Transfer

- **Insufficient awareness of available technologies**
- **Unavailability of resources for conducting in-depth TNA**
- **Insufficient human and financial capabilities to domesticate new technologies**
- **Limited skills and capacities to coordinate transfer and adoption of new technologies.**

Information Gaps

- **Progress Indicators**
- **Steps taken or envisaged**
- **Progress of Implementation and results achieved**



Gaps in preparing this inventory

Data Collection Process / GHG Estimation

- **Non-availability of country-specific emission factors**
- **Disaggregated information in the Manufacturing Industries**
- **Construction source category dictated the inventory compilers to adopt the Tier 1 method**
- **Insignificant information on vehicle classification**
- **Estimation of fugitive emissions from coal mining, processing, storage and transportation**
- **High reliance on extrapolation to generate the waste water data**
- **Use of a single source for GHG emission estimates in AFOLU**
- **Limited technical capacity for uncertainty assessment**
- **Weak institutional arrangements for data collection, archiving, monitoring and reporting**
- **High level of inconsistency due to scattered activity data among various agencies**



Support Needed and Received

- **Needed Financial Support**

Received climate change financial flows between 2012 and 2016

- **Domestic Contributions:- Primarily Budgetary Allocations by FGN**
- **External Contributions: - Resources from multilateral and bilateral partners / GCF**

Key Gaps and Potential Solutions



Section

Key Gaps

- **MRV Activities** → **Not Aligned Across Different Levels of Govt. Institutions and Ministries**
- **MRV Infrastructure** → **No Established Pool of Resources from Agencies**
- **MRV Activities on GHG** → **Not Robust and Sustainable**
- **MRV Activities on Mitigation Action** → **Not Robust and Sustainable**

Key Gaps and Potential Solutions



Potential Solutions

- **Definition of Roles across government establishments and agencies**
- **Regular progress monitoring**
- **Contribution for REDD+ Programme**

- **Input capacity from NDC/BUR**
- **Establishment of national MRV Institution**

- **Institutionalization of GHG Inventory**
- **Finance for preparing and updating GHG Inventory**

- **Elaborate link between MRV and mitigation projects**
- **Standardize and commonly agreed methodologies and indicators**
- **Enhance institutional capacities in sectoral ministries.**

Key Gaps

← **Not Aligned Across Different Levels of Govt. Institutions and Ministries**

← **No Established Pool of Resources from Agencies**

← **Not Robust and Sustainable**

← **Not Robust and Sustainable**

**Responses to
Questions from
Parties**



- **Nigeria received fourteen (14) questions from the FSV Portal:**

- Canada - 1

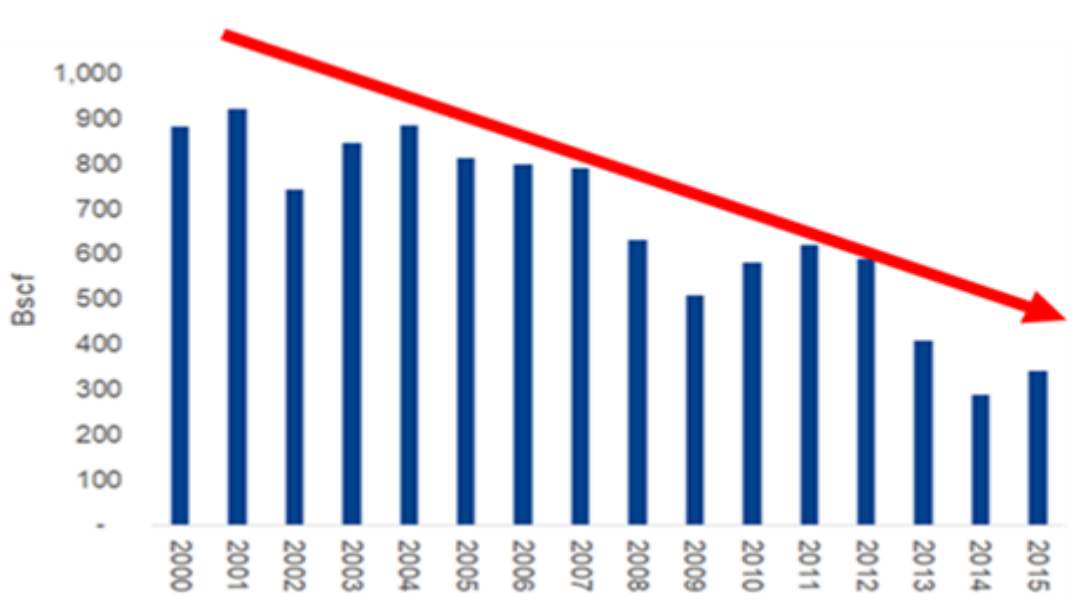
- EU - 4

- Germany - 6

- USA - 3

- As requested, some the questions and responses are included in this presentation

- The overall responses can be assessed in the UNFCCC FSV portal.

SOURCES OF QUESTIONS	QUESTIONS	RESPONSES																																		
USA	<p>Nigeria has a number of mitigation activities in place to reduce flaring from oil production. Are data available to show trends in these emissions in the GHG Inventory (page 131 of BUR)? You can include response in your presentation during the FSV session.</p>	<p>☐ <i>Implementing Emissions Reduction Projects Under the CDM:</i></p> <ul style="list-style-type: none"> • <i>NNPC/Pan Ocean Gas Flare Project largest CDM project in Africa: to date reduced emissions by more than 4 million tons CO₂eq and others</i> <p>NIGERIA'S GAS FLARE SCENERIO OVER TIME</p>  <table border="1"> <caption>Nigeria's Gas Flare Emissions (Bscf) from 2000 to 2015</caption> <thead> <tr> <th>Year</th> <th>Emissions (Bscf)</th> </tr> </thead> <tbody> <tr><td>2000</td><td>880</td></tr> <tr><td>2001</td><td>920</td></tr> <tr><td>2002</td><td>740</td></tr> <tr><td>2003</td><td>840</td></tr> <tr><td>2004</td><td>880</td></tr> <tr><td>2005</td><td>810</td></tr> <tr><td>2006</td><td>790</td></tr> <tr><td>2007</td><td>780</td></tr> <tr><td>2008</td><td>630</td></tr> <tr><td>2009</td><td>500</td></tr> <tr><td>2010</td><td>570</td></tr> <tr><td>2011</td><td>610</td></tr> <tr><td>2012</td><td>580</td></tr> <tr><td>2013</td><td>400</td></tr> <tr><td>2014</td><td>280</td></tr> <tr><td>2015</td><td>340</td></tr> </tbody> </table>	Year	Emissions (Bscf)	2000	880	2001	920	2002	740	2003	840	2004	880	2005	810	2006	790	2007	780	2008	630	2009	500	2010	570	2011	610	2012	580	2013	400	2014	280	2015	340
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Sources of questions	QUESTIONS	RESPONSES
USA	<p>Is Nigeria on track to submit the NIR? You can include response in your presentation during the FSV session.</p>	<p>Yes, following the establishment of a framework for the National Inventory Management System (NIMS), Nigeria has commenced her first reporting cycle towards the first NIR.</p> <p>Work is progressing on the GHG inventory for the BUR2 and it will be as a stand-alone NIR. Due to the delay in availability of funds from the GEF, the NIR may not be submitted till mid-2020, although efforts are being put in place to facilitate earlier submission to the UNFCCC.</p>

Sources of questions	QUESTIONS	RESPONSES
USA	<p>Are there any potential sources or approaches that Nigeria is considering to collect more disaggregated data?</p>	<p><i>Yes,</i></p> <p>(a) Nigeria has identified a number of disaggregated data at sub national level and currently identifying Institutional Data Providers, within the waste and forest sectors.</p> <p>(a) Forest - Nigeria is considering collecting more disaggregated data on the AFOLU sector with emphasis on Livestock, land use changes and Forests. More categories have been identified after a mapping exercise and these sources will be included in future inventories gradually based on availability of data and resources.</p>

SOURCES OF QUESTIONS	QUESTIONS	RESPONSES
Germany	<p>What are the lessons from Nigeria in shifting from an ad-hoc approach into a more institutionalized system? What actions has the country undertaken to setup the system and what is the status of its progress?</p>	<p>Some lessons learned in the institutionalization of BUR production include the following:</p> <ul style="list-style-type: none"> ▪ Working on an ad-hoc basis does not imply lack of institutional arrangement. Currently existing is an Inter-Ministerial Committee on Climate Change (ICCC) that co-ordinate the Activities of Climate Change in the Country. ▪ Institutionalization enhances timely and qualitative delivery of projects ▪ Institutionalization is more cost effective and implementation process easier to monitor and coordinate ▪ The shift is very challenging and difficult and requires significant resources that are not sustainably available given the competition the country faces with other issues such as poverty elimination, etc. <p>Actions taken to-date are:</p> <ul style="list-style-type: none"> ▪ Creation of a dedicated department of climate change within the ministry of environment; ▪ Staffing of the DCC; ▪ Putting in place climate change desk officers in each Federal Ministry with climate-related mandate and activities; ▪ Putting in place climate change desk officers at State level responsible for mainstreaming climate change into State development initiatives; ▪ Mapping of institutions to identify all those to participate in the reporting and implementation process; <p>These stakeholders are now party to the working groups and/or teams.</p> <p>The institutional structure being put in place will be further strengthened through appropriate capacity building initiatives that may include support to internal and external training activities to strengthen the capacity of national staff of DCC and other relevant MDAs.</p>

Thank
you



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