



NIGERIA'S FIRST BIENNIAL TRANSPARENCY REPORT TO THE UNFCCC





FEDERAL REPUBLIC OF NIGERIA

First Biennial Transparency Report under the United Nations Framework Convention on Climate Change (UNFCCC)

26 December 2024

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***HIS EXCELLENCY
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PRESIDENT, COMMANDER-IN-CHIEF OF THE ARMED FORCES***

Background

The Federal Republic of Nigeria ratified the United Nations Framework Convention on Climate Change (UNFCCC) on 29 August 1994, its Kyoto Protocol in 2004 and the Paris Agreement in 2017. To meet its obligations under this Convention, Nigeria has actively participated in international climate change negotiations and programmes as required periodically. Nigeria has prepared and submitted three (3) National Communications and two (2) Biennial Update Reports, including GHG inventories to provide information on its emissions by sources and removals by sinks. Following the entry into force of the Paris Agreement, Parties, including Nigeria took the obligation to submit their First Biennial Transparency Report (BTR1) by 31st December 2024 as prescribed in Decision 18/CMA.1. BTR1 submission by Parties will kick-off a new reporting cycle providing fresh information every two years under Article 13 of the Paris Agreement on the Enhanced Transparency Framework (ETF).

The purpose of preparing and submitting the BTR every two (2) years is for the UNFCCC to globally take stock of mitigation efforts of countries towards reducing global warming and climate change as well as support countries to report transparently to build trust and promote stakeholders' engagement and collaboration towards strengthening the capacity of existing institutions to mainstream climate change in national development plans and strategies.

During the preparation of the BTR1, several activities, continuously involving relevant stakeholders at national and sub-national levels were undertaken, considering the Modalities, Procedures and Guidelines (MPGs) of the ETF under article 13 of the PA, fostering transparency at the different stages of implementation. This involved sectoral data collection, analysis and archiving processes on the national GHG Inventory, tracking the progress of Mitigation and Adaptation Actions, and Financial, Technological and Capacity Building Support Received or Needed regarding the Nationally Determined Contribution.

The Federal Republic of Nigeria through the National Council on Climate Change Secretariat (NCCCS) is delighted to be amongst the countries that have submitted their BTR1, within the required UNFCCC timeframe of 31st December 2024. This submission is made in anticipation that the content is of global benefit towards mitigating CO₂ emissions and reducing the impacts of climate change as well as assisting the country to progressively and sustainably achieve its Long-Term Low Emissions Development agenda.

Established by the Climate Change Act, 2021, the National Council on Climate Change Secretariat (NCCCS) is the regulatory entity in Nigeria with the statutory responsibility of enforcing compliance with the Act. The Secretariat is responsible for ensuring the mainstreaming of climate change action within all sectors of the Nigerian economy, including the operations of ministries, departments, agencies, the private sector, and individuals.

Dr Nkiruka Chidia Maduekwe

The Special Presidential Envoy on Climate Change and

the Director-General/Chief Executive Officer, National Council on Climate Change Secretariat (NCCCS)

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We also thank Ministries, Departments and Agencies at both national and sub-national levels for their unwavering commitment and support in the preparation of Nigeria's First Biennial Transparency to the United Nations Framework Convention on Climate Change (UNFCCC).

In the journey to build and strengthen institutional capacity to monitor, report, and verify (mrv), skills that are critical towards developing the important data used in the BTR1, Nigeria received and is receiving support from the European Union Delegation in Nigeria and the Initiative for Climate Action Transparency (ICAT). Indeed, your support was essential to the success of this journey.

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In addition, the NCCCS acknowledges the participation of the underlisted for their support, contribution, and commitment to making this submission a reality.

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- Energy Commission of Nigeria

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- Federal Ministry of Budget, Economic and National Planning
- Federal Ministry of Transport
- Federal Ministry of Water Resources & Sanitation
- Federal Ministry of Power
- Federal Ministry of Works & Housing
- Federal Ministry of Finance
- Federal Ministry of Health
- Federal Ministry of Science, Technology & Innovation
- Federal Ministry of Trade & Investment
- Federal Ministry of Steel and Mines Development
- Federal Ministry of Solid Minerals
- Federal Ministry of Industry Trade & Investment
- Federal Ministry of Marine and Blue Economy
- Federal Ministry of Women Affairs
- Ministries of Environment across 36 States of the Federation
- National Environmental Standard and Regulations Enforcement Agency
- Nigeria National Petroleum Company
- Nigerian Upstream Petroleum Regulatory Commission
- Nigeria Midstream and Downstream Regulatory Authority
- National Airspace Research & Development Agency
- National Oil Spill Detection and Response Agency
- National Bureau of Statistics
- National Emergency Management Agency
- National Planning Commission
- Nigerian Maritime Administration & Safety Agency
- Nigerian Meteorological Agency
- Rural Electrification Agency
- National Boundary Commission

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Abbreviations and acronyms

ACCARD	African Centre for Climate Actions and Rural Development
ACCREC	African Climate Research Center
ACRESAL	Agro-Climatic Resilience in Semi-Arid Landscapes
AD	Activity Data
ADCOM	Adaptation Communication
BAU	Business As Usual
BTR	Biennial Transparency Report
BUR	Biennial Update Report
C	Confidential
CAN	Climate Action Network
CCN	Climate Change Network of Nigeria
CCTEH	Culture, Creative, Tourism, Entertainment, and Hospitality (Industry)
CH4	Methane
CMA	Conference of the Parties serving as the meeting of the parties to the Paris Agreement
CMIP	Coupled Model Inter-comparison Projects
CO	Carbon monoxide
CO2	Carbon dioxide
CO2 e	Carbon dioxide equivalent
COVID	Coronavirus disease
CRT	Common Reporting Table
CRU	Climate Research Unit
CSA	Capacity Self Assessment
CSO	Civil Society Organization
CTF	Common Tabular Format
EEP	Energizing Education Programme
ETF	Enhanced Transparency framework
FAO	Food and Agricultural Organisation
FCT	Federal Capital Territory
FEWS	Flood Early Warning Systems
Fx	Flexibility
GCI	Global Competitiveness Index
GCF	Green Climate Fund
GDP	Gross Domestic Product
GERI	Gender and Environmental Risk Reduction Initiative
GHG	Greenhouse gas
GII	Global Innovation Index
GSM	Global System for Mobile communication
GW	GigaWatt

GWP	Global Warming Potential
ha	Hectare
HFC	Hydrofluorocarbon
HFO	Heavy Fuel Oil
ICT	Information and Communication Technology
IE	Included Elsewhere
IPCC	Intergovernmental Panel on Climate Change
IPP	Independent Power Producers
IPPU	Industrial Processes and Product Use
ITMO	Internationally Transferred Mitigation Outcomes
Kt	kiloton
kWh	Kilowatt-hour
LEAP	Low Emissions Analysis Platform
LULUCF	Land-Use, Land-Use Change and Forestry
MDA	Ministries, Departments and Agencies
MPG	Modalities, Procedures and Guidelines
Mt	Mega Ton
MW	MegaWatt
N ₂ O	Nitrous Oxide
NA	Not Applicable
N/A	Not available
NAP	National Adaptation Plan
NASPA-CCN	National Adaptation Strategy and Plan of Action on Climate Change for Nigeria
NBS	Nigeria Bureau of Statistics
NC	National Communication
NCF	Nigeria Conservation Foundation
NCCC	National Council on Climate Change
NCCCS	National Council on Climate Change Secretariat
NDC	Nationally Determined Contribution
NC3	Third national communication
NC4	Fourth National Communication
NE	Not Estimated
NEST	Nigerian Environmental Study/Action Team
NF ₃	Nitrogen Trifluoride
NGO	Non-Governmental Organization
NID	National Inventory Document
NIPP	National Integrated Power Project
NIR	National Inventory Report

NMVOC	Non-Methane Volatile Organic Compound
NO	Not Occurring
NOA	National Orientation Agency
NOSDRA	National Oil Spill Detection and Response Agency
PA	Paris Agreement
para	paragraph
PFC	PerFluoroCarbon
QA	Quality assurance
QC	Quality Control
SDG	Sustainable Development Goal
SF6	Sulphur hexafluoride
STI	Science Technology Innovation
SWDS	Solid Waste Disposal Sites
t	Tons
TACCC	Transparent, Accurate, Consistent, Complete and Comparable (Principles)
TBD	To be decided
TBE	To be estimated
TEU	Twenty-foot Equivalent Unit
UKAID	United Kingdom Aid
UKAID DFID	United Kingdom Aid Department for International Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
USD	United States Dollar
WASH	Water, Sanitation and Hygiene
WEP	Women Empowerment Programme
WHO	World Health Organization
° C	Degrees Celsius

Executive summary

ES 1. National inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases

Nigeria's national circumstances are such that the country has always been an emitter, which explains its initiatives to address emissions and be a net zero emitter in the longer term. Removals from the Land Use, Land Use Change and Forestry (LULUCF) sector are lower than total emissions from the Energy, Industrial Production and Product Use (IPPU), Agriculture, LULUCF and Waste sectors. The highest contributors in national emissions are the Oil and Gas sector and deforestation coupled with wood removals for use as fuelwood in LULUCF and emissions from the livestock sector.

Nigeria has so far compiled and submitted 5 GHG inventories. The country has progressed since the first submission but still faces serious challenges to fully comply with Article 13 of the Paris Agreement (PA) on the Enhanced Transparency Framework (ETF). Preparation of the Greenhouse Gas (GHG) inventories over time aimed at conforming to decisions of the Conference of the Parties (COP) through adoption of the latest recommended methodologies and guidelines, enhancing transparency, accuracy and completeness while improving consistency and comparability. Nigeria's GHG inventory spans over the time series 2000 to 2022, has been prepared using the 2019 Refinement to the IPCC 2006 guidelines, covers the direct GHGs carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Hydrofluorocarbons (HFCs) and Sulphur Hexafluoride (SF₆) have not been estimated so far. Perfluorocarbons and nitrogen trifluoride (NF₃) have not been identified as GHGs being emitted up to now. The indirect gases nitrogen oxides (NO_x), carbon monoxide (CO), Non-Methane Volatile Organic Compounds (NMVOCs) and sulphur dioxide (SO₂) have also been estimated in the GHG inventory.

Nigeria is a net emitter over the full time series 2000 to 2022. Total emissions show a clear increasing trend over the period 2000 to 2019 of the time series after which it declined slightly due to land converted to Cropland and Settlements reaching 20 years when the balance of soil organic carbon (SOC) is accounted for in the software as from year 2020 for these 2 land classes. Total emissions increased from 374,312 kt CO₂ e in 2000 to 678,270 kt CO₂ e in 2022 resulting in an increase of 303,958 kt CO₂ e (81%). Net emissions increased from 368,499 kt CO₂ e in 2000 to 554,095 kt CO₂ e in 2022 which translates in an increase of 185,596 kt CO₂ e (51%). Removals increased from 5,813 kt CO₂ e in 2000 to 124,175 kt CO₂ e in 2022 resulting in an increase of 118,361 kt CO₂ e (2,036%).

The highest emitting sector remained LULUCF over the full time series followed by Energy, Agriculture, Waste and IPPU. Between 2000 and 2022, gross emissions increased by 63% in the LULUCF sector, 111% for Energy, 75% for Agriculture, 99% for Waste and 947% for IPPU. The removals accountable to the LULUCF sector increased by 2,036% between 2000 and 2022.

CO₂ remains the major gas emitted over the timeseries 2000 to 2022 with around 70% share of emissions while CH₄ represents 25% of emissions and the remaining is N₂O.

Regarding indirect GHGs, CO emissions increased by 87% from 12,499 kt in 2000 to 23,414 kt in 2022. Over the same period, NO_x increased from 1,406 kt to 4,213 kt (200%), NMVOC from 1,998 kt to 3,460 kt (73%) while SO₂ increased from 1,626 kt to 5,235 kt (222%).

When considering the summary of key categories for level (2022) and trend (2000 to 2022) assessments with LULUCF, there are 18 key categories in total, 16 common to both assessments. For the remaining 2, one each falls under the Level and the Trend assessment. When excluding LULUCF from the assessments for similar time periods, the number of key categories is still 18. This time 17 are common to both types of assessment, and the remaining 1 is under the level assessment only.

Improvements introduced from the previous inventory submitted as NIR1 and this first National Inventory Document consist of widening of the scope of the inventory which enhances completeness, improving the accuracy of estimates through the estimation of emissions at the sub-category level instead of being treated in bulk as a category and recalculating estimates for all years of the previous inventory to keep consistency of the time series. Recalculations have been performed whenever there have been improved data sets available and new methodologies or emission factors available following the adoption of the 2019 Refinements to the IPCC 2006 guidelines. Explanations, including the justifications for recalculations and the implications for emissions or removals are provided under the individual categories as applicable

ES 2. Information necessary to track progress made in implementing and achieving nationally determined contributions under Article 4 of the Paris Agreement

Nigeria's national circumstances have a profound impact on both emissions and removals of GHGs. The three sectors impacting mostly on the emissions and removals are the Energy, Agriculture and LULUCF sectors. Within the Energy sector, the low access and irregular supply of electricity in both urban and rural regions push the population in using either fossil fuels or fuelwood/charcoal for cooking. Road dominates passenger and freight transport and with no well-developed mass transport systems, consumption of fossil fuels is exacerbated and contributes to substantial emissions. Livestock farming is consequent and results in emissions of CH₄ and N₂O from Enteric Fermentation and Manure management. In the petroleum sector and despite the declared policy, Nigeria is still flaring natural gas due to lack of facilities to capture and use it. Solid waste is not well managed and emits GHGs from the landfills and burning.

The Climate Change Act of 2021 provides for the necessary institutional arrangements to track progress made in implementing and achieving its Nationally Determined Contribution (NDC) under Article 4, including those used for tracking internationally transferred mitigation outcomes. One of its functions is to "coordinate the implementation of sectoral targets and guidelines for the regulation of GHG emissions and other anthropogenic causes of climate change". The Climate Change Act of 2021 also provides the legal framework for all climate change activities through the National Council on Climate Change (NCCC). The Council caters for administrative and procedural arrangements for domestic implementation, monitoring, reporting, archiving of information and stakeholder engagement related to the implementation and achievement of its NDC under Article 4. The NCCC has already engaged all Ministries Departments and Agencies (MDAs) and States in an extensive network for collection of information on NDC actions and measures which will be managed by NCCC.

The NDC provides for a 20% unconditional and 47% conditional, the latter inclusive of the unconditional 20% in 2030 below the Business As Usual scenario. This represents absolute emissions reductions of 90,600 kt CO₂e unconditional and 212,910 ktCO₂e conditional. The reduction is economy-wide below the baseline emissions of 2018 projected to 2030, which is a single target year. The reference points are base year 2018 at 347,000 ktCO₂e, projected base year emissions in 2030 at 453,000 ktCO₂e and a mitigated potential of 212,910 ktCO₂e in 2030 over a time frame of 9 years as from 2021. The scope is economy wide with a whole territory coverage. The mitigation activities span over the 5 IPCC sectors Energy, IPPU, Agriculture, LULUCF and Waste. Gases covered include CO₂, CH₄, N₂O, and HFCs. Nigeria intends to use cooperative approaches that involve the use of internationally transferred mitigation outcomes under Article 6 of the Paris Agreement, but this is not yet effective.

The single indicator, economy-wide national total GHG emissions, is for the direct gases CO₂, CH₄ and N₂O, including LULUCF. Base year emissions have been recalculated for the national GHG inventory of the BTR1. The new reference points, based on the BTR1 GHG inventory, are base year 2018 at 614,172 ktCO₂e, projected base year emissions in 2030 at 1,051,804 ktCO₂e and a mitigation potential of 494,348 ktCO₂e in 2030. The most recent information for the selected indicator is net total national emissions of 520,395

ktCO₂ e for 2020, 532,574 ktCO₂ e for 2021 and 554,095 kt CO₂ e for 2022. Following the recalculations of the GHG inventory, the most recent information for the selected indicator net national emissions are 614,172 kt CO₂ e for 2018 as new base year/starting point and 1,051,804 kt CO₂ e as projected base year emissions for the target year 2030. Mitigation co-benefits of adaptation actions are the emissions reductions or increased removals stemming from adaptation activities.

The accounting approach is in accordance with the Transparent, Accurate, Consistent, Complete and Comparable Principles (TACCC) and due attention has been paid to avoid double counting. The MPGs contained in Decision 18/CMA.1 has been used for compiling the GHG inventory and estimating mitigation potentials. Nigeria applied Annex II of Decision 4/CMA.1, the guidance for accounting for NDCs. The selected indicator, national total GHG emissions, is calculated based on the 2006 IPCC Guidelines, the 2013 Supplement to the 2006 IPCC Guidelines: Wetlands and the 2019 Refinements to the 2006 IPCC Guidelines.

The global warming potentials (GWPs) presented in the Fifth Assessment Report (AR5) of IPCC have been used to estimate the national total GHG emissions in CO₂ equivalent in accordance with the relevant provisions of the MPGs (18/CMA.1, Annex). Estimation of GHG emissions and removals from the LULUCF sector is calculated based on the same IPCC 2006 guidelines. Nigeria will abide to future decisions stemming from international negotiations on estimating and accounting rules. Consistency has been maintained by using the recommended IPCC methodologies for compiling the GHG inventory and also assessing mitigation effects of the NDC actions. In some cases, the LEAP model has been used with IPCC emission factors. It is recognized that LEAP is based and reflects the IPCC methods and guidelines. However, the baseline data and scope of the previous GHG inventory have been improved when compiling the latest inventory (NID of BTR1). Category and sector specific assumptions are based on the latest national development factors and official forecasts have been used to make the projections. The implementation and achievement of the target in the NDC will be done by assessing the % reduction of total economy wide projected GHG emissions of the BAU scenario relative to the base year (2018) emissions. The sum of emissions reductions stemming from the NDC actions and measures will be used to assess the % reduction. The same methodology and approach have been adopted for the GHG inventory and for evaluating mitigation potentials. No conditions and assumptions have been set with regard to the achievement of the NDC under Article 4 of the Paris Agreement. Consistency has been maintained through the adoption of the same methods and metrics throughout all the processes. When the methodology or data used for making estimates in a category in the GHG inventory is revised, GHG emissions for all years are recalculated in a manner that ensures time-series consistency, including for base year emissions and projections.

With a base year emissions of 614,172 kt CO₂ e in 2018, 532,574 kt CO₂ e in 2021, 554,095 kt CO₂ e in 2022 and 557,456 kt CO₂ e in 2030, Nigeria has reduced its emissions by 10% towards meeting its NDC commitments.

Actions, policies and measures that support the implementation and achievement of Nigeria's NDC under Article 4 of the Paris Agreement focus primarily on the adoption of renewables for producing electricity, improving both supply and demand side energy efficiency, phasing out of flaring, Fuel transformation, Road transportation, Rice cultivation, Smart agriculture, Afforestation, Reforestation, Ecosystem preservation and solid waste management. These measures and policies cuts across sectors and categories and most of the latter are key categories, sometimes under both level and trend assessments with and without LULUCF.

Nigeria will reduce its rate of emissions compared to the base year and in the long term move towards reaching its net zero target when increasing the share of renewables for producing electricity, improving energy efficiency, increasing public transport through a Bus Rapid Transport system, converting trucks and buses to run on CNG instead of diesel. Shifting from charcoal to cleaner fuel from renewable sources will

avoid emissions while keeping its sink capacity which will also lead to the long-term target of reaching net zero. Rice cultivation and Smart agriculture will reduce the three direct GHG emissions and enable Nigeria to meet the net zero target it has set in its NDC. Afforestation, Reforestation, Forest protection and Ecosystem preservation and restoration of the extensive area under mangroves will increase the sink capacity through higher removals and negate emissions for meeting the long-term net zero target. Composting of organic waste will reduce emissions and contribute to Nigeria reaching its net zero target.

National net GHG emissions including LULUCF estimated at National net GHG emissions including LULUCF in 2022 is projected to be 608,919 kt CO₂ e in 2025, 778,387 kt CO₂ e in 2030, 998,799 kt CO₂ e in 2035 and 1,274,472 kt CO₂ e in 2040. By 2030, the sector Energy, including Transport, is expected to become the highest emitter.

ES 3. Information related to climate change impacts and adaptation under Article 7 of the Paris Agreement

Observed historical data, irrespective of the period, namely 1951 to 2020, 1971 to 2020 and 1991 to 2020, shows that there is an increase in annual average mean surface air temperature. It is also clear that the rate of warming is highest for the period 1991 to 2020 compared to the two other periods, which corresponds to the numerous hottest global temperatures. Regarding rainfall, the trends are divergent when comparing the three periods. While the longer-term period 1951 to 2020 shows a slight increase in precipitation, the graphs for the periods 1971 to 2020 and 1991 to 2020 are very similar and overlap.

Based on four IPCC scenarios, a more or less same rate of increase in air temperature is simulated until the 1940's after which they start diverging with the highest rate and eventual increase in the year 2100 corresponding with the model associated with the highest increase in GHG atmospheric level. The rate of warming is directly related with the atmospheric GHG level. Rainfall projections follow the historical trend for the period 1950 to 2020, namely a slight increase in the annual amounts. As for air temperature, there is an indication of a higher increase under the scenario with the highest level of GHGs.

There has been a high recurrence of floods and epidemics that can be directly associated with the more intense heavy rainfall episodes and the warmer temperatures respectively, confirming the impacts of global warming. Nigeria has also been recording storms since the year 2000 when there was none before. These hazards have been affecting more and more people over time. It is also observed that at least one hazard has occurred annually since 1998.

Nigeria has developed policies, strategies and action plans to achieve its adaptation priorities. Adaptation issues are addressed using a sectoral approach. The priority key sectors are Agriculture (Crops and Livestock), Freshwater Resources, Coastal Water Resources and Fisheries, Forests, Biodiversity, Health and Sanitation, Human Settlements and Housing, Energy, Transportation and Communications, Industry and Commerce, Disaster, Migration and Security and Livelihoods as per the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN). There are also cross-cutting issues such as gender, finance and disaster risk reduction that must be attended to for building resilience.

Challenges constraining effective adaptation include:

- limited capacity to implement the NAP framework, analyse climate information and prioritise adaptation options.
- lack of capacity of national stakeholders to interpret climate risk assessments.
- lack of comprehensive climate risk assessments for priority sectors and vulnerable states.

- limited capacity of policy- and decision-makers to mainstream climate change into national and sectoral plans and policies.
- limited funding mechanisms for adequately planning and implementing adaptation actions.
- limited monitoring, reviewing or reporting on adaptation planning at the federal, state and local levels

Observed and potential climate change impacts, including those related to extreme weather events and slow onset events based on data from the EM-Dat database, shows the country has endured various natural hazards, including droughts, floods, landslides, epidemics, and storms are provided in the table below.

Natural disasters and their impacts in Nigeria between 1990 and 2020.

Natural hazard	Sub type	Events count	Total deaths	Total affected	Total damage ('000 USD)
Drought	Drought	1	0	3,000,000	71,103
Epidemic	Bacterial Disease	27	17,278	163,378	0
	Viral Disease	24	8,233	182,474	0
Extreme Temperature	Cold Wave	1	18	Data not available	0
	Heat Wave	1	60	Data not available	0
Flood	Flash Flood	6	330	109,165	7,805
	Riverine Flood	28	1,110	10,275,064	636,717
Insect	Grasshopper	1	Data not available	Data not available	0
	Locust	1	Data not available	Data not available	0
Storm	Convective Storm	3	54	16,012	1,000
Landslide	Landslide	3	32	1,800	0

ES 4. Information on financial, technology development and transfer and capacity-building support needed and received under Articles 9–11 of the Paris Agreement

Nigeria is in the process of developing and establishing a sustainable system for tracking and reporting support needed and received. The NCCC is responsible as per the Climate Change Act of 2021 which sets the operation framework the preparation of national reports to the UNFCCC, including the chapter on support needed and received. However, the NCCC is still in the operationalization phase which explains the problems encountered to collect information exhaustively for informing the preparation of the BTR1. Current challenges and limitations are strongly linked. Key ones are:

- Development and implementation of a data collection framework under the climate change Act to guarantee an automatic annual flow of information to inform reporting.
- Officially recognized institutional agreements to secure the commitment of all concerned stakeholders.
- Declared and agreed procedures for the smooth flow of information.
- Development and full operationalization of an appropriate tool for collecting information on support.

- Insufficient time of staff of MDAs to contribute in a systematic and timely manner due to overloaded schedules.
- Lack of capacity of stakeholders on the ETF requirements for reporting on support received and needed.

ES 5. Information to be reported when national communications and biennial transparency reports are submitted jointly every four years

Not applicable as this is a BTR.

ES 6. Information on flexibility

There are 3 flexibility clauses that have been applied namely for the timeseries starting with 1990 (Flexibility Para. 57 of MPGs) and coverage of F-gases (Flexibility Para. 48 of MPGs). The latter two are categories Product uses as substitutes for ODS and Other product manufacture and use. The needs for these improvements have yet to be determined.

ES 7. Improvements in reporting over time

Areas of improvement together with how Nigeria intends to address them, have been identified on a selfassessment basis. These areas have been regrouped under 3 major themes which are: flexibility, key category analysis for Tier 2 estimates of GHG emissions and as identified by the Party. The improvement areas have been prioritized in terms of P1 (highest) to P3 (lowest). Priority 1 areas numbers at 15, P2 at 9 and P3 at 6 for a total of 30.

1. National inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases (MPGs Para 17-58)

The National Inventory Report, comprising the National Inventory Document and the Common Reporting Tables, has been submitted as stand-alone documents and are available on the UNFCCC website at <https://unfccc.int/first-biennial-transparency-reports>.

2. Information necessary to track progress made in implementing and achieving nationally determined contributions under Article 4 of the Paris Agreement

2.1. A. National circumstances and institutional arrangements

DESCRIPTION OF NATIONAL CIRCUMSTANCES RELEVANT TO PROGRESS MADE IN IMPLEMENTING AND ACHIEVING ITS NDC UNDER ARTICLE 4 OF THE PARIS AGREEMENT (MPGs PARA. 59)

(a) Government structure (<https://nigeriaembassygermany.org/Government.htm>)

The Federal government of Nigeria is composed of three distinct branches: the executive, the legislative, and the judicial. Executive power is vested in the president, who is simultaneously chief of state and head of government. The president is eligible for two four-year terms. The president's Federal Executive Council, or cabinet, includes representatives from all 36 states. The National Assembly, consisting of a 109-member Senate and a 360-member House of Representatives, constitutes the country's legislative branch. Three senators represent each of Nigeria's 36 states, and one additional senator represents the capital city of Abuja. Seats in the House of Representatives are allocated according to population. Therefore, the number of House members from each state differs. Members of the National Assembly are elected to a maximum of two four-year terms. The judicial branch comprises the Supreme Court, the Court of Appeal, the Federal High Court, and, on the state level, high courts, sharia courts, and customary courts. The president appoints members of the Supreme Court, subject to confirmation by the Senate.

Nigeria is divided administratively into the Federal Capital Territory (Abuja) and 36 states, which are organized into the following six geo-political zones: South-West Zone—Lagos, Ekiti, Ogun, Ondo, Oshun, and Oyo; South-South Zone—Akwa, Bayelsa, Cross River, Delta, Edo, Ibom, and Rivers; South-East Zone—Abia, Anambra, Ebonyi, Enugu, and Imo; North-West Zone—Kaduna, Kano, Katsina, Jigawa, Kebbi, Sokoto, and Zamfara; North-Central Zone—Benue, Kogi, Kwara, Nasarawa, Niger, and Plateau; and North-East Zone—Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe.

Climate change is regulated by the Climate Change Act of 2021. The National Council on Climate Change (NCCC) was established in 2022 under this Act and is the body charged with the power to make policies on all matters relating to climate change in Nigeria. NCCC is the Nationally Designated Authority and official Focal Point responsible for addressing climate change and its impacts in Nigeria. The Council provides a national platform for collaboration and coordination among various government agencies, the private sector, civil society organizations, and other stakeholders in Nigeria to combat and mitigate the impact of climate change.

(b) Population profile (Nigerian Population Commission projections)

According to the last official 2006 Population and Housing Census, Nigeria had 140 million inhabitants. Based on this figure, it is now projected that the population increased to 206 million in 2020 and 216 million by 2022. The population growth rate of 3.01% in 2007 has constantly declined to reach 2.5% in 2022.

(c) Geographical profile

The Federal Republic of Nigeria covers an area of 923,768 sq. km, is subdivided into 36 States and the Federal Capital Territory (FCT) that hosts the capital city Abuja which has an estimated population of 100,000. Other important big cities are Lagos with a population of about 12 million, Ibadan with some 5 million, Kano with about 1 million and Enugu with approximately 500,000.

In terms of topography, the country ranges from coastal swamps South to tropical forests, open woodlands, grasslands, and semidesert in the far north. The highest regions are the Jos Plateau culminating at 2,000 meters above sea level and the mountains along the border with Cameroon.

(d) Economic profile

The Gross Domestic Product (GDP) in Nigeria was worth 362.81 billion US dollars in 2023, according to official data from the World Bank. Economic growth in Nigeria slowed from 3.3% in 2022 to 2.9% in 2023 due to high inflation and sluggish growth in the global economy. Growth was driven by services and agriculture on the supply side and by consumption and investment on the demand side. Inflation rose from 18.8% in 2022 to 24.5% in 2023, due to rising fuel costs and a depreciating naira. National Gross domestic product was 362.8 billion USD in 2023 and GDP per capita was 1,621.12 USD in the same year (WB). In 2020, it was estimated that agriculture contributed 21.96% of GDP, industry 23.65% and services 54.39%. Some of the natural resources are Petroleum, natural gas, tin, columbite, iron ore, coal, limestone, lead and zinc. Major agriculture products are cocoa, palm oil, yams, cassava, sorghum, millet, corn, rice, livestock, groundnuts and cotton. Important industries are textiles, cement, food products, footwear, metal products, lumber, beer and detergents.

(e) Climate profile (<https://climateknowledgeportal.worldbank.org/country/nigeria/climate-datahistorical>)

Nigeria is characterized by three distinct climate zones, a tropical monsoon climate in the south, a tropical savannah climate for most of the central regions, and a Sahelian hot and semi-arid climate in the north of the country. This leads to a gradient of declining precipitation amounts from south to north. The southern regions experience strong rainfall events during the rainy season from March to October with annual rainfall amounts, usually above 2,000 mm, and can reach 4,000 mm and more in the Niger Delta.

The central regions are governed by a well-defined single rainy season (April to September) and dry season (December to March). The dry season is influenced by the Harmattan wind from the Sahara. Coastal areas experience a short drier season with most rain occurring over March to October. Annual rainfall can reach up to about 1200 mm. In the north, rain only falls from June to September in the range of 500 mm to 750 mm. The rest of the year is hot and dry. Northern areas have a high degree of annual variation in its rainfall regime, which results in flooding and droughts.

The most significant temperature difference in Nigeria is between the coastal areas and its interior as well as between the plateau and the lowlands. On the plateau, the mean annual temperature varies between 21°C and 27°C whereas in the interior lowlands, temperatures are generally over 27°C. The coastal fringes have lower means than the interior lowlands. Seasonal mean temperatures are consistently over 20°C throughout the country and diurnal variations are more pronounced than seasonal ones. Highest temperatures occur during the dry season and vary little from the coast to inland areas. Like rainfall, the relative humidity in Nigeria decreases from the south to the north, with an annual mean of 88% around Lagos.

Mean annual temperature for Nigeria is 26.9°C, with average monthly temperatures ranging between 24°C (December, January) and 30°C (April). Mean annual precipitation is 1,165 mm. Rainfall is experienced throughout the year in Nigeria, with most significant rainfall occurring from April to October and with minimal rainfall occurring November to March.

(f) Sector details (Agenda 2050).

Agriculture

Agriculture has contributed to the growth of the Nigerian economy over the years. The sector provides food as well as raw materials for industries. In addition, selected export crops are promoted, thus earning

foreign exchange for the country. The sector is also the mainstay of Nigeria's rural economy, given the significant participation of rural residents in agricultural activities to earn a living. It employs approximately 65 % of the labour force. The Nigerian Agricultural sector covers Crop Production, Livestock, Fishery, and Forestry. In 2019, the agriculture sector accounted for 34.9 % of the total employment in Nigeria. The sector is dominated by crop production at around 87 percent while other sub-sectors like livestock (9.0 %), fishing (2.2 percent), and forestry (1.4 %) accounted for lower shares of the sector's output. Figure 3.1. shows that the growth rate of the agricultural sector (2.2 %) exceeded that of the total economy (-1.9 %) in 2020.

Solid Minerals, Mining, and Steel Development

Nigeria is one of the countries in the world with vast mineral wealth. The country is rich in energy minerals (such as uranium, bitumen, lignite, coal); solid minerals (such as gypsum, limestone, barite, feldspar, kaolin); metallic ore minerals (such as lead-zinc, cassiterite, gold, iron ore, columbite, copper); precious stones (such as topaz, sapphire, amethyst, tourmaline, garnet, among others); construction minerals (such as granite, gravel, laterite, sand); precious stones (such as sapphire, tourmaline, emerald, topaz, amethyst, garnet, etc.). These resources will be harnessed for the actualisation of the growth and development targets in Agenda 2050. Despite the abundance of these minerals, the performance of the sector in terms of contribution to national output is low.

Oil and Gas Sector

The petroleum industry, which includes the oil and gas sub-sectors is the main source of government revenue in Nigeria. Over the last five years, the sector has contributed over 60 percent of government revenue, approximately 10 percent of the country's GDP and more than 80% of export earnings. As a result, the economy has become vulnerable to oil demand and price variations. Nigeria has the largest oil and gas reserves in Africa and the sixth largest in the world. The country has 32.5 billion barrels of proven crude oil, and gas reserves of 187 trillion cubic feet (tcf). However, the ratio of gas production to reserves is just 1%. Nigeria has a maximum crude oil production capacity of 2.5 million barrels per day, however, the country has an average crude oil production of 1.76 million barrels per day as of 2020. Nigeria's daily gas production is at 7,600 mmscf.

Industrialisation and Manufacturing

Nigeria's manufacturing/industrial sector is among the largest in Africa, with numerous opportunities. The sector comprises thirteen (13) activity sub-sectors. The sector's output (at 2010 constant price) rose from N3.82 trillion in 1990 (17.82 % of GDP) to N6.47 trillion in 2019 (9.06 % of GDP). The manufacturing output fell to N6.29 trillion (8.99 % of GDP) in 2020 due to suppressed consumer demand and supply-chain disruptions associated with the COVID-19 pandemic. In 2020, the sector was dominated by the food, beverage, and tobacco sub-sectors with production at around 47.8 % of total manufacture, while all other manufacturing sub-sectors together accounted for the remaining 52.2 % of the sector's output.

Culture, Creative, Tourism, Entertainment, and Hospitality Industry

Nigeria is endowed with great cultural diversity, and this has made the country to distinguish itself from other counterparts in Africa. The continuous drive to diversify the economy away from oil/primary products increases the urge to tap the potentials of the creative and tourism industry to become a core contributor to the economic growth of the country. The Culture, Creative, Tourism, Entertainment, and Hospitality (CCTEH) industry has been a key driver of creativity and innovation in Nigeria, and across the globe, for more than three decades now. One requirement for the industry to soar is the protection of intellectual property. Apart from having the largest economy in sub-Saharan Africa, Nigeria also has the largest population hovering over 200 million with variant cultural heritage across 300 ethnic groups and over 525 languages spoken. Nigeria is the leading, and fastest-growing hub for filmmaking, fashion, and

music production. Today, Nigeria ranks among the finest exporter of culture and art. The Nigerian tourism industry is a potential long-term growth driver considering the country's rich traditional cultural diversity, biodiversity, arts and crafts, historical cities, and archival artefacts.

Modern Financial Services Sector

The goal of achieving private-sector-led growth requires modern financial services that allocate capital effectively and efficiently. The sector plays a critical role in an economy, as it enables the financial intermediation process which facilitates the flow of funds between savers and borrowers, thus ensuring that financial resources are allocated efficiently towards promoting economic growth and development. Nigeria's financial markets consist of the money market mainly deposit money banks, worth N47.8 trillion as of June 2020, the capital markets, that fluctuates between N25 trillion and N31 trillion and other nonbank financial institutions. The sector's output growth has not been stable, averaging 12.0 %, 3.0 %, and 9.37 % in 2015-2019, 1990-1994, and 2020 respectively (Figure 8.1). The sector's share in GDP on average was 3.9 % in 1990-1994 but fell to 2.9 % in 2010-2014. Domestic credit provided by the financial services sector has continued to increase from 6.6 % in 1990-1994 to 13.6 % in 2005-2009 but decreased to 12.2 % in 2015-2019 and reached 11.23 % in 2020.

Trade, Business Environment, and Global Competitiveness

Exports of goods and services (as a % of GDP) on average amounted to 20.6 percent in 1990-1994, 25.1 % in 2010-2014, and 8.8 % in 2020 (Figure 9.1). In the same period, imports of goods and services (as a % of GDP) averaged 12.0, 15.6, and 16.6 % respectively. Also, the contributions of oil exports to total exports accounted for 94.1, 92.3, and 87.4 percent in 2010, 2017, and 2020 respectively (Figure 9.2). Thus, showing the dominance of oil exports in Nigeria's total exports. The non-diversified export base of the country further revealed that oil exports accounted for 11.9, 27.6, and 17.1 % of GDP in 2016, 2019, and 2020 respectively, whereas the contributions of non-oil exports were 1.0, 5.3, and 2.5 % for the same period. Though the country is committed to several regional and multilateral trade agreements, the strength of its competitiveness is relatively weak. For instance, the country's performance on the Global Competitiveness Index (GCI) ranking has not been stable. The country ranked 115th in 2012, before its decline to 125th position in 2017, and ranked 116th in 2019.

Infrastructure - Power and Energy Sector

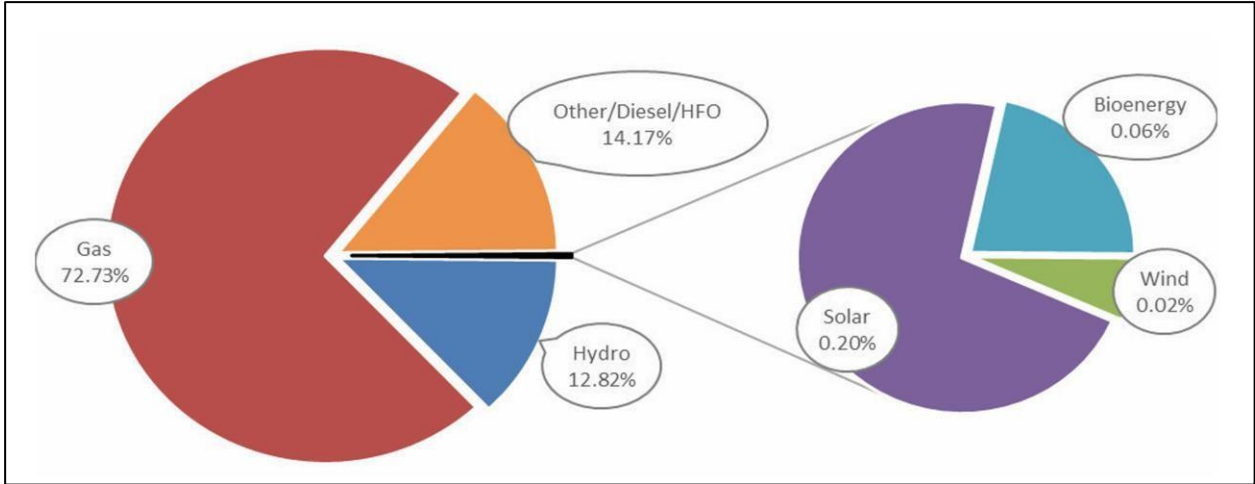
Reliable energy will continue to remain critical to Nigeria's overall economic development and industrialisation ambition. It is a fundamental requirement for powering every single economy on the planet, supporting livelihoods, enhancing competitiveness and promoting good quality of life. Access to energy contributes to employment, wealth creation and poverty reduction. With sufficient energy provision, small and large businesses can conduct their operations cost-effectively. Indeed, Nigeria's industrialisation objectives cannot be realised without reliable and affordable access to energy. Nigeria's current energy mix is driven mostly by natural gas and hydropower, while renewable energy sources such as solar and wind energy are potentials yet to be meaningfully tapped. The sector has witnessed series of reforms with the development of roadmaps and plans.

For example, though Nigeria is the biggest economy in Africa in terms of GDP and size of the population, its power sector as of 2019, lagged behind her comparator countries with per capita power consumption of 144 kWh. This compared unfavourably with South Africa's 4,200 kWh and Ghana's 351 kWh; and far behind the average of 483 kWh for Sub Saharan Africa, not to talk of 6,022 kWh for the European Union.

There are 28 grid-connected power plants in operation with a total installed capacity of 10,396 MW, much of which is accounted for by thermal based generation. The plants comprise of the 11 privatised legacy power plants, nine Independent Power Producers (IPPs) and the eight generating stations under the National Integrated Power Project (NIPP). From 2016 to 2020, energy generation has risen gradually from

28,531.99 GWh to 35,720.27 GWh, with corresponding increases in energy sent-out in each year, but lower in each case compared to the energy generated

Fossil fuel and hydro are the two main sources of power for generating electricity in Nigeria. Electricity generation from fossil fuel, composed mainly of gas thermal power sources, (contributes 72.73 %), hydro power sources, (contributes 12.82 %), Diesel/HFO sources (contributes 14.17 %) and renewable sources (contributes 0.28 %), see Figure 1. The figure indicates that available installed capacity for renewable energy sources is low in the total installed power mix in the country.



Source: NERC Annual Report 2020

Figure 2.1 Composition of installed power plants in 2020

Transportation

Roads, carrying approximately 90 percent of all freight and passenger traffic in the country, are the most widely used mode of transportation. One of the major problems with Nigeria’s road transport system is lack of maintenance thereby contributing to frequent road accidents and vehicular breakdowns. Another problem is overuse or abuse of the road transport system. In the past, dual-purpose mammy wagons which transport both goods and passengers were the most common mode of transport, but they have gradually been supplanted by 10 to 15-ton trucks/lorries and 30-ton trailers that transport heavy goods carrying containers while heavy tankers transport fuel and other petroleum products by road without the benefit of weighbridges.

Over the years, the Nigerian railway system has continued to experience a decline in its performance. This is evidenced in the reduction of the number of passengers and freights transported which has made the mode remain static in structure and unresponsive to emerging socio-economic and political challenges. Moreover, due to its underdeveloped nature, its role in driving competition and economic growth is limited. Rail (and pipeline) 103 transport systems contribute just 0.0025 percent of the GDP and constitute only about 0.02 percent of total transport in Nigeria

Maritime transport, which accounts for 80% of the trade in goods and services globally, is the backbone of international trade. For Nigeria, a country with a natural coastline of about 853 km, the maritime sector plays a key role as a gateway for the movement of passengers and freight between the country and her trading partners- more than 95 % of foreign trade takes place through the maritime mode. Nigeria is endowed with inland waterways spanning 10,000 km with approximately 3,800 km navigable. Twentyeight of its thirty-six states are reachable through water and so are five neighbouring countries of Benin Republic, Niger Republic, Chad, Cameroon, and Equatorial Guinea. In addition, the sub-sector remains a

key source of food, energy, minerals, health, leisure and transport for millions of Nigerians, especially those along the coastline and riverbanks.

The aviation sector has recorded landmark achievements in the five years to 2020 with particular reference to air safety and quality of service delivery and positive impact economic growth. There was a marginal growth of the aviation sector's contribution to GDP from 0.06 % in 2010 to 0.121 % in 2019, and its contribution as a percentage of total transport increased from 4.7 percent to 7.88 % over the same period. The sector attracted over 17.5 million passengers in 2019, an increase of 7.4 percent from 2018. The passenger handling capacity of the twenty-one airports is projected to increase to more than 45 million passengers in the medium term. The cargo handling capacity which currently stands at 208,424 tons is also projected to increase to more than 276,848 tons upon completing the cargo terminals.

The performance of water transport consisting of maritime, ports and inland waterways has not improved over the years. Measured in terms of its relative contribution to total GDP and its contribution to the transport sector Figure 11.11 reveals a reduction in both respects over the period 1981 to 2019. The declines in performance of the water transport subsector are although generally the Nigerian ports recorded a 52 % increase in the number of registered vessels between 2007 and 2018. While the total number of containers in the ports increased by 60 % between 2007 and 2014, it however decreased by 56 % to 285,408 TEU from 2014 to 2018. During the same period, the number of outward containers decreased by 47 % (Figure 11.13). In the year 2018, the quality of Nigeria's port infrastructure measured by the Quality of Ports Infrastructure Index by the World Economic Forum shows that the ports score 3.3 out of 7 which is lower than that of South Africa (4.7) and Indonesia (3.6). Moreover, Nigeria's Efficiency of Seaport Services was 2.5 out of 7 for both years 2018 and 2019.

Science and Technology

In Nigeria, Science, Technology and Innovation (STI) remain one of the critical sectors requiring urgent attention following the weak performance in the past years. In 2020, the country was ranked 117th out of 131 countries on the Global Innovation Index (GII) metrics because of its weak STI supporting system including institutions, human capital, and infrastructure. This has clearly contributed to the low creative, and knowledge and technology outputs for which the country was ranked 110th and 120th respectively.

Digital Transformation

One-third of Nigeria's population is made up of young persons between the ages of 10 and 24 years. Given this age profile and its dynamics, digital entrepreneurship has the potential to drive economic transformation and set the country on a new growth trajectory. The unprecedented Global System for Mobile communication (GSM) digital mobile network expansion in the country made Nigeria to surpass the 25 % broadband penetration mark, by which the nation has effectively entered the digital phase of information and communication technology (ICT) sector transformation. This is crucial for a nation seeking to diversify its economy in the face of fast-depleting oil revenue and to achieve the net-zero GHG.

Healthcare

Globally, health has come under severe stress through pandemics like COVID-19, the growing negative impacts of climate change, as well as threats to food security due to terrorism, banditry, droughts, floods and wars. Over the years, the federal and state governments of Nigeria have devoted significant amounts of resources to the development and implementation of numerous health plans and strategies to achieve a modern, efficient, and effective healthcare delivery system. Despite these investments and some improvements that follow, Nigeria's health indices remain weak. Nigeria's average life expectancy was 54.3 years in 2018 and rose modestly to 54.8 years in 2020, while the infant mortality rate stood at 74.2 per 1,000 live births in 2019.

It has also been increasingly difficult to equip the hospitals and to retain medical personnel; the result has been outbound medical tourism for the rich and outward migration of Nigerian medical personnel in search of greener pastures to Europe, Australia, North America, and the Middle East. Consequently, the country's low medical personnel density of doctor-to-patient ratio of 1:2,500 falls far short of the 1:600 recommendation by the World Health Organisation (WHO). Therefore, it is critical for Nigeria to improve the performance of its health sector to better the life of its citizens.

Water and Sanitation

The country is richly blessed with water resources across all the states, with about 215 cubic kilometres of surface water available annually. Regarding water stress, with an estimated population of 200 million, Nigeria's renewable water supply capacity at 1,499 m³ per capita, falls below the Falkenmark threshold of 1,500 m³ per capita. Also, the withdrawal level of supply at 9.67 percent is below the 4.2 percent threshold for water stress as stipulated in the SDG 6.

Although Nigeria has made some progress between 2017 and 2020 in the attainment of SDG 6, it still has significant challenges to surmount. Data from the United Nations as of 2020 show that only an estimated 22% of the national population used safely managed drinking water services, 31% used safely managed sanitation facilities, and 48% of domestic wastewater was adequately treated. It also estimated that only 9% of the population had access to complete basic WASH services. Nigeria still struggles with open defecation, with 23.5% of the population estimated to defecate in the open. Furthermore, in the overall degree of implementation of integrated water resources management, Nigeria improved from 35% in 2017 to 44% in 2020. To achieve SDG 6, the World Bank estimates Nigeria requires USD 93 billion to be invested in the WASH sector.

Environmental Management

Environmental degradation and climate change, arising from increased production and consumption activities, continue to dominate policy discussions around the world. Global trends relating to climate change, global warming, diversity losses, pollution, solid waste management, deforestation, flood, desertification, and extreme weather are also evident in Nigeria. As with other countries, these developments have renewed calls for the inclusion of environmental management and sustainability in national long term development planning processes. As a result, the National Climate Change Policy for Nigeria (2021–2030) raised concern about the consistently increasing temperature throughout the country. Inter-annual fluctuations in rainfall have also been observed in the last few decades with associated dry and wet years as well as extreme climate events which include droughts and floods. Although Nigeria remains a fringe contributor to global emissions, increased economic activities contribute to environmental related challenges that are on the rise.

Disposal of household and industrial waste, as well as the rate of resource depletion (including marine resources) are equally observed to be a major challenge to Nigeria's environmental sustainability. Only 44 percent of total municipal waste was collected and sent to solid waste disposal sites (SWDS) over the period 2015-2017, an improvement from 41% recorded in the early 2000s. However, industrial waste sent to SWDS was 70% during the same period. The government has noticed the need to increase the use of SWDS for both municipal and industrial wastes as a step towards promoting waste recycling activities in the country. Meanwhile, desertification is a major issue in the Northern parts of the country, leading to the loss of grazing reserves and the subsequent incessant farmers-herders' conflicts that have led to the loss of life and livelihoods. The low consideration for the development of sustainable food systems to reduce desertification (Source: Federal Mortgage Bank and National Bureau of Statistics (NBS); Federal Ministry of Works and Housing, Central bank of Nigeria; and the Technical Working Group Diagnostic Report for baseline data).

Targets, benchmarked against best performing upper-middle economies, contribute to drought and vegetation losses in the country, further threatening food security. The volume of wood removed from the forests rose continuously from an average of 82 million cubic metre between 2000 and 2004 to 106 million cubic metre during 2015-2017 period. Coastal and gully erosions are common in the Southern parts of the country and threaten land availability for farming and settlements.

EFFECT OF NATIONAL CIRCUMSTANCES ON GHG EMISSIONS AND REMOVALS OVER TIME (MPGs PARA. 60)

Nigeria's national circumstances have a profound impact on both emissions and removals of GHGs. The three sectors impacting mostly on the emissions and removals are the Energy, Agriculture and LULUCF sectors. Within the Energy sector, the low access and irregular supply of electricity in both urban and rural regions push the population in using either fossil fuels or fuelwood/charcoal for cooking. The use of fuelwood/charcoal for cooking keeps a constant pressure on the forest for their supply which also results in emissions. Road dominates passenger and freight transport and with no well-developed mass transport systems, consumption of fossil fuels is exacerbated and contributes to substantial emissions. Livestock farming is consequent and results in emissions of CH₄ and N₂O from Enteric Fermentation and Manure management. In the petroleum sector and despite the declared policy, Nigeria is still flaring natural gas due to lack of facilities to capture and use it. Solid waste is not well managed and emits GHGs from the landfills and burning.

INSTITUTIONAL ARRANGEMENTS IN PLACE TO TRACT PROGRESS MADE IN IMPLEMENTING AND ACHIEVING ITS NDC UNDER ARTICLE 4 (MPGs PARA. 61)

The Climate Change Act of 2021 provides for the necessary institutional arrangements to track progress made in implementing and achieving its NDC under Article 4, including those used for tracking internationally transferred mitigation outcomes. One of its functions is to "coordinate the implementation of sectoral targets and guidelines for the regulation of GHG emissions and other anthropogenic causes of climate change". Members of the Council comprise all Ministries, the states and other representatives from umbrella organizations for the civil society (women, youths and the disabled) and the private sector as well as the financial sector. However, NCCC is still not fully operational, and the process is ongoing. The operationalization started with the preparation of the BTR1 which was itself constrained and delayed. The exercise will continue and further progress during the preparation of the combined BTR2/NC4. Regarding Internationally Transferred Mitigation Outcomes (ITMOs), the NCCC is also responsible for this task. NCCC is called upon to develop and implement a mechanism for carbon emission trading in collaboration with the Federal Ministry responsible for Environment and the Federal Ministry responsible for Trade. This process is under development presently.

LEGAL, INSTITUTIONAL, ADMINISTRATIVE AND PROCEDURAL ARRANGEMENTS (MPGs PARA. 62)

The Climate Change Act of 2021 provides the legal framework for all climate change activities through the NCCC. The institutional arrangements are described in the previous paragraph and the Council caters for administrative and procedural arrangements for domestic implementation, monitoring, reporting, archiving of information and stakeholder engagement related to the implementation and achievement of its NDC under Article 4. The NCCC has already engaged all MDAs and States in an extensive network for collection of information on NDC actions and measures which will be managed by NCCC. Tools have been designed and shared with all stakeholders for data collection after training. Data collection was only partly successful due to the limited time available to be fully exhaustive.

2.2. B. Description of a Party's nationally determined contribution under Article 4 of the Paris Agreement, including updates

DESCRIPTION OF A PARTY'S NATIONALLY DETERMINED CONTRIBUTION UNDER ARTICLE 4 OF THE PARIS AGREEMENT (MPGs PARA. 64)

Table 2.1 describes Nigeria's NDC under Article 4 of the Paris Agreement.

Table 2.1 Description of a Party's NDC under Article 4 of the Paris Agreement, including updates

Element	Description
Target(s) and description	<ul style="list-style-type: none"> 20% unconditional and 47% conditional, the latter inclusive of the unconditional 20% in 2030 below the Business As Usual scenario. This represents absolute emissions reductions of 90,600 kt CO₂e unconditional and 212,910 ktCO₂e conditional. The reduction is economy-wide below the baseline emissions of 2018 projected to 2030.
Target year(s) or period(s)	<ul style="list-style-type: none"> 2030, single-year target.
Reference point(s), level(s), baseline(s)	<ul style="list-style-type: none"> The reference points are base year 2018 at 347,000 ktCO₂e, projected base year emissions in 2030 at 453,000 ktCO₂e and a mitigated potential of 212,910 ktCO₂e in 2030
Time frame(s) and/or periods for implementation	<ul style="list-style-type: none"> Time frame of 9 years 2021 to 2030, single-year target 2030
Scope and Coverage	<ul style="list-style-type: none"> The scope is economy wide with a whole territory coverage. The mitigation activities span over the 5 IPCC sectors Energy, IPPU, Agriculture, LULUCF and Waste. Gases covered include CO₂, CH₄, N₂O, and HFCs.
Intention to use cooperative approaches	<ul style="list-style-type: none"> Nigeria intends to use cooperative approaches that involve the use of internationally transferred mitigation outcomes under Article 6 of the Paris Agreement, but this is not yet effective
Updates or clarifications of previously information	<ul style="list-style-type: none"> No update or clarification since the production of the First NDC reported
Updated version	

2.3. C. Information necessary to track progress made in implementing and achieving its nationally determined contribution under Article 4 of the Paris Agreement

DESCRIPTION OF SELECTED INDICATORS (MPGs PARA. 65-67)

A description of the selected indicators is given in Table 2.2 in a structured summary. **Table**

2.2 Structured Summary: Description of selected indicators

Indicator(s) selected to track progress	Description
Total greenhouse gas emissions	<ul style="list-style-type: none"> The economy-wide national total GHG emissions for the direct gases CO₂, CH₄ and N₂O, including LULUCF
Information for the reference point(s), level(s), baseline(s), base year(s) or starting point(s)	<ul style="list-style-type: none"> The NDC reference points are base year 2018 at 347,000 ktCO₂e, projected base year emissions in 2030 at 453,000 ktCO₂e and a mitigation potential of 212,910 ktCO₂e in 2030
Updates in accordance with any recalculation of the GHG inventory	<ul style="list-style-type: none"> Base year emissions have been recalculated for the national GHG inventory of the BTR1. The new reference points, based on the BTR1 GHG inventory, are base year 2018 at 614,172 ktCO₂e, projected base year emissions in 2030 at 1,051,804 ktCO₂e and a mitigation potential of 494,348 ktCO₂e in 2030

Relation to NDC	<ul style="list-style-type: none"> NDC is an economy-wide absolute emission reduction target. Therefore, the total GHG emissions are the most appropriate indicator for this type of NDC
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MOST RECENT INFORMATION FOR EACH SELECTED INDICATOR (MPGs PARA 68-69)

The most recent information for the selected indicator is net total national emissions of 520,395 ktCO₂ e for 2020, 532,574 ktCO₂ e for 2021 and 554,095 kt CO₂ e for 2022.

Following the recalculations of the GHG inventory, the most recent information for the selected indicator net national emissions are 614,172 kt CO₂ e for 2018 as new base year/starting point and 1,051,804 kt CO₂ e as projected base year emissions for the target year 2030.

Paragraph 70 is not applicable.

DEFINITIONS NEEDED TO UNDERSTAND THE NDC (MPGs PARA 73) Table

2.3 provides information on understanding of the NDC.

Table 2.3 Structured Summary: Definitions needed to understand NDC

Definition needed to understand each indicator	
Total GHG emissions	<p>The total GHG emissions selected as an indicator are the economy-wide national total net GHG emissions, including LULUCF</p> <p>The national total GHG emissions correspond to total GHG emissions in CO₂-equivalent units as reported in the most recent national GHG inventory (NID of BTR1)</p>
Any sector or category defined differently than in the national inventory report:	
Sector	Not Applicable
Category	Not Applicable
Definition needed to understand mitigation co benefits of adaptation actions and/or economic diversification plans:	
Mitigation co-benefits	Mitigation co-benefits of adaptation actions are the emissions reductions or increased removals stemming from adaptation activities
Any other relevant definitions	Not Applicable

OVERVIEW OF METHODOLOGIES AND ACCOUNTING APPROACHES (MPGs PARA 71,72,74,75,76,77D)

Details pertaining to the methodologies and accounting approaches used to track progress in implementing and achieving the NDC are provided in Table 2.4.

Table 2.4 Structured summary: Methodologies and accounting approaches – consistency with Article 4, paragraphs 13 and 14 of the Paris Agreement and with decision 4/CMA.1

Reporting requirement	Description
For the first NDC under Article 4	

<p>Accounting approach, including how it is consistent with the Article 4, paragraphs 13–14, of the Paris Agreement Complete and 71 of the MPGs) Comparable Principles (TACCC) and due</p>	<p>The accounting approach is in accordance with (para. Transparent, Accurate, Consistent, attention has been paid to avoid double counting. The MPGs contained in Decision 18/CMA.1 has been used for compiling the GHG inventory and estimating mitigation potentials.</p>
<p>For the second and subsequent NDC under Article 4, and optionally for the first NDC under Article 4</p>	
<p>Information on the accounting approach used is consistent with paragraphs 13–17 and annex II of decision 4/CMA.1 (para. 72 of the MPGs)</p>	<p>Nigeria applied Annex II of Decision 4/CMA.1, the guidance for accounting for NDCs</p>
<p>Explain how the accounting for anthropogenic emissions and removals is in accordance with methodologies and common metrics assessed by the IPCC and in accordance with decision 18/CMA.1 (para. 1(a) of annex II to decision 4/CMA.1)</p>	<p>The selected indicator, national total GHG emissions, is calculated based on the 2006 IPCC Guidelines, the 2013 Supplement to the 2006 IPCC Guidelines: Wetlands and the 2019 Refinements to the 2006 IPCC Guidelines. The global warming potentials (GWPs) presented in the Fifth Assessment Report of IPCC have been used to estimate the national total GHG emissions in CO2 equivalent in accordance with the relevant provisions of the MPGs (18/CMA.1, Annex). Estimation of GHG emissions and removals from the LULUCF sector is calculated based on the same IPCC guidelines mentioned above.</p>
	<p>Nigeria will abide to future decisions stemming from international negotiations on estimating and accounting rules.</p>
<p>Explain how consistency has been maintained between any GHG data and estimation methodologies used for accounting and the Party's GHG inventory, pursuant to Article 13, paragraph 7(a), of the Paris Agreement, if applicable (para. 2(b) of annex II to decision 4/CMA.1)</p>	<p>Consistency has been maintained by using the recommended IPCC methodologies for compiling the GHG inventory and also assessing mitigation effects of the NDC actions. In some cases, the LEAP model has been used with IPCC emission factors. It is recognized that LEAP is based and reflects the IPCC methods and guidelines. However, the baseline data and scope of the previous GHG inventory have been improved when compiling the latest inventory (NID of BTR1).</p>
<p>Explain how overestimation or underestimation has been avoided for any projected emissions and removals used for accounting (para. 2(c) of annex II to decision 4/CMA.1)</p>	<p>Category and sector specific assumptions based on the latest national development factors and official forecasts have been used to make the projections.</p>
<p>For each NDC under Article 4: Accounting for anthropogenic emissions and removals in accordance with methodologies and common metrics assessed by the IPCC and adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement</p>	
<p>Each methodology and/or accounting approach used to assess the implementation and achievement of the target(s), as applicable (para. 74(a) of the MPGs)</p>	<p>The implementation and achievement of the target in the NDC will be done by assessing the % reduction of total economy wide projected GHG emissions of the BAU scenario relative to the base year (2018) emissions. The sum of emissions reductions stemming from the NDC actions and measures will be used to assess the % reduction.</p>

<p>Each methodology and/or accounting approach used for the construction of any baseline, to the extent possible (para. 74(b) of the MPGs)</p>	<p>The baseline emissions for the Energy sector were estimated by developing an energy system model using the LEAP model and consistent with an updated national energy balance for 2018 developed for the NDC update. Baseline projections to 2030 in energy consumption and supply, and associated emissions were aligned with economic projections in Nigeria’s 2020 Economic Sustainable Plan, and a 2.6% population growth rate.</p> <p>In the IPPU and Agriculture sectors, the GHG inventory of the NC3 were the basis for historic emissions. For the IPPU sector, emissions were projected based on GDP growth rates from the Economic Sustainability Plan, and in the Agriculture sector, livestock and crop production (including fertilizer utilization) were projected to meet production targets of the Nigeria’s Agricultural Promotion Policy.</p> <p>For the LULUCF sector, projections of emissions estimate to 2030 are based on the rate of deforestation of 2.3%, the historical trend outlined in the Forest Reference Emissions Level for the period 2006 to 2016. Changes in land use were aligned with emissions factors from the IPCC 2019 Refinements to estimate the impact of these changes on emissions and removals.</p> <p>An updated Waste sector analysis was made using the IPCC 2006 Guidelines first order decay model for solid waste and considering updates in the 2019 Refinements for the solid and liquid waste subsectors. Emissions of the Waste sector were projected based on the population and economic projections adopted for the Energy sector.</p>
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<p>If the methodology or accounting approach used for the indicator(s) in table 1 differ from those used to assess the implementation and achievement the target, describe each methodology or accounting approach used to generate the information generated for each indicator in table 4 (para. 74(c) of the MPGs)</p>	<p>The same methodology and approach have been adopted for the GHG inventory and for evaluating mitigation potentials.</p>
<p>Any conditions and assumptions relevant to the achievement of the NDC under Article 4, as applicable and available (para. 75(i) of the MPGs)</p>	<p>No conditions and assumptions have been set with regard to the achievement of the NDC under Article 4 of the Paris Agreement.</p>
<p>Key parameters, assumptions, definitions, data sources and models used, as applicable and available (para. 75(a) of the MPGs)</p>	<p>All these information is provided for in the National Inventory Report</p>
<p>IPCC Guidelines used, as applicable and available (para. 75(b) of the MPGs)</p>	<p>2006 IPCC Guidelines for National Greenhouse Gas Inventories 2013 Wetlands supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories 2019 Refinements to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories</p>

Report the metrics used, as applicable and available (para. 75(c) of the MPGs)	GWPs of a 100-year time horizon presented in IPCC Fifth Assessment Report
For Parties whose NDC cannot be accounted for using methodologies covered by IPCC guidelines, provide information on their own methodology used, including for NDCs, pursuant to Article 4, paragraph 6, of the Paris Agreement, if applicable (para. 1(b) of annex II to decision 4/CMA.1)	Not applicable
Provide information on methodologies used to track progress arising from the implementation of policies and measures, as appropriate (para. 1(d) of annex II to decision 4/CMA.1)	Not Applicable
Where applicable to its NDC, any sector-, category- or activity-specific assumptions, methodologies and approaches consistent with IPCC guidance, taking into account any relevant decision under the Convention, as applicable (para. 75(d) of the MPGs)	Information thereon is provided in the National Inventory Report as applicable
For Parties that address emissions and subsequent removals from natural disturbances on managed lands, provide detailed information on the approach used and how it is consistent with relevant IPCC guidance, as appropriate, or indicate the relevant section of the national GHG inventory report containing that information (para. 1(e) of annex II to decision 4/CMA.1, para. 75(d)(i) of the MPGs)	Natural disturbances on managed land have not been addressed in the GHG inventory and is thus not applicable
For Parties that account for emissions and removals from harvested wood products, provide detailed information on which IPCC approach has been used to estimate emissions and removals (para. 1(f) of annex II to decision 4/CMA.1, para. 75(d)(ii) of the MPGs)	Stock-change Approach
For Parties that address the effects of age-class structure in forests, provide detailed information on the approach used and how this is consistent with relevant IPCC guidance, as appropriate (para. 1(g) of annex II to decision 4/CMA.1, para. 75(d)(iii) of the MPGs)	Age class structure has not been applied; all forests considered to be of 20 years
How the Party has drawn on existing methods and guidance established under the Convention and its related legal instruments, as appropriate, if applicable (para. 1(c) of annex II to decision 4/CMA.1)	Nigeria has adopted the methods recommended by the COP Decisions through the IPCC 2006 software to operationalize them.
Any methodologies used to account for mitigation co benefits of adaptation actions and/or economic diversification plans (para. 75(e) of the MPGs)	Not Applicable as no assessment has been made for this BTR
Describe how double counting of net GHG emission reductions has been avoided, including in accordance with guidance developed related to Article 6 if relevant (para. 76(d) of the MPGs)	Nigeria has not resorted to Article 6 up to now as the country is transitioning from the Kyoto protocol to the ITMO framework
Any other methodologies related to the NDC under Article 4 (para. 75(h) of the MPGs)	Not Applicable
Ensuring methodological consistency, including on baselines, between the communication and implementation of NDCs (para. 12(b) of the decision 4/CMA.1):	

Explain how consistency has been maintained in scope and coverage, definitions, data sources, metrics, assumptions and methodological approaches including on baselines, between the communication and implementation of NDCs (para. 2(a) of annex II to decision 4/CMA.1)	Consistency has been maintained through the adoption of the same methods and metrics throughout all the processes
Explain how consistency has been maintained between any GHG data and estimation methodologies used for accounting and the Party's GHG inventory, pursuant to Article 13, paragraph 7(a), of the Paris Agreement, if applicable (para. 2(b) of annex II to decision 4/CMA.1) and explain methodological inconsistencies with the Party's most recent national inventory report, if applicable (para. 76(c) of the MPGs)	The methodologies used to estimate GHG emissions and removals for NDC accounting and compiling the GHG inventory are the same and thus consistent. There are no methodological inconsistencies between the most recent national inventory report and the NDC accounting.
For Parties that apply technical changes to update reference points, reference levels or projections, the changes should reflect either of the following (para. 2(d) of annex II to decision 4/CMA.1)	
Technical changes related to technical corrections to the Party's inventory (para. 2(d)(i) of annex II to decision 4/CMA.1)	When the methodology or data used for making estimates in a category in the GHG inventory is revised, GHG emissions for all years are recalculated in a manner that ensures time-series consistency, including for base year emissions and projections.
Technical changes related to improvements in accuracy that maintain methodological consistency (para. 2(d)(ii) of annex II to decision 4/CMA.1)	Same as above.
Explain how any methodological changes and technical updates made during the implementation of their NDC were transparently reported (para. 2(e) of annex II to decision 4/CMA.1)	In case of recalculation of GHG emissions, it has been applied to all years, including the base year emissions. The difference with the previous inventory, and the reasons for such recalculation has been reported transparently in the national inventory report
Striving to include all categories of anthropogenic emissions or removals in the NDC and, once a source, sink or activity is included, continuing to include it (para. 3 of annex II to decision 4/CMA.1):	
Explain how all categories of anthropogenic emissions and removals corresponding to their NDC were accounted for (para. 3(a) of annex II to decision 4/CMA.1)	The 2030 GHG emission reduction target in Nigeria's NDC covers GHG emissions from all IPCC categories considered in the NDC.
Explain how Party is striving to include all categories of anthropogenic emissions and removals in its NDC, and, once a source, sink or activity is included, continue to include it (para. 3(b) of annex II to decision 4/CMA.1)	The 2030 GHG emission reduction target in Nigeria's NDC covers GHG emissions from all IPCC categories. Once a category has been included in the GHG inventory, Nigeria has continued to report emissions thereon in subsequent inventories.
Provide an explanation of why any categories of anthropogenic emissions or removals are excluded (para. 4 of annex II to decision 4/CMA.1)	Some categories have not been estimated but none has been excluded once their emissions have been estimated in an inventory.
Each Party that participates in cooperative approaches that involve the use of ITMOs towards an NDC under Article 4, or authorizes the use of mitigation outcomes for international mitigation purposes other than achievement of its NDC	
Provide information on any methodologies associated with any cooperative approaches that involve the use of ITMOs towards an NDC under Article 4 (para. 75(f) of the MPGs)	Not Applicable
Provide information on how each cooperative approach promotes sustainable development, consistent with decisions adopted by the CMA on Article 6 (para. 77(d)(iv) of the MPGs)	Not Applicable

Provide information on how each cooperative approach ensures environmental integrity consistent with decisions adopted by the CMA on Article 6 (para. 77(d)(iv) of the MPGs)	Not Applicable
Provide information on how each cooperative approach ensures transparency, including in governance, consistent with decisions adopted by the CMA on Article 6 (para. 77(d)(iv) of the MPGs)	Not Applicable
Provide information on how each cooperative approach applies robust accounting to ensure, inter alia, the avoidance of double counting, consistent with decisions adopted by the CMA on Article 6 (para. 77(d)(iv) of the MPGs)	Not Applicable
Any other information consistent with decisions adopted by the CMA on reporting under Article 6 (para. 77(d)(iii) of the MPGs)	Not Applicable

ADAPTATION ACTION LEADING TO MITIGATION CO-BENEFITS (MPGs PARA 78)

The consequences of mitigation co-benefits from adaptation actions are given in Table 2.5

Table 2.5 Consequences of mitigation co-benefits from adaptation actions

Sector and activity	Social and economic consequences	Challenges and barriers	Actions to address consequences
Agriculture – Smart agriculture	Higher productivity, lower expenditures, improved income, better quality products for improved health,	lack of capacity and knowledge of the techniques, awareness of producers	Enhance capacity building and awareness programmes

STRUCTURED SUMMARY: TRACKING PROGRESS MADE IN IMPLEMENTING AND ACHIEVING THE NDC UNDER ARTICLE 4 OF THE PARIS AGREEMENT (MPGs PARA 79)

Table 2.6 shows the progress made in implementing and achieving the NDC under article 4 of the PA.

Table 2.6 Structured summary

	Unit	Reference point(s), level(s), baseline(s), base year(s) or starting point(s) (paras 67 and 77(a)(i) of the MPGs)	Implementation period of the NDC covering information for previous reporting years and the most recent year, including the end year or end of period (paras 68 and 77(a)(ii–iii) of the MPGs)	Target level	Target year or period	Progress made towards the NDC, as determined by comparing the most recent information for each selected indicator, including for the end year or end of period, with the reference point(s), level(s), baseline(s), base year(s)

							or starting point(s) (paras. 69 70 of the MPGs)
		2018	2021	2022			
<i>Indicator(s) selected to track progress towards the implementation and/or achievement of the NDC under Article 4 of the Paris Agreement: (paras 65 and 77(a) of the MPGs)</i>							
GHG emissions	kt CO2e	614,172	532,574	554,095	557,456	2030	-10%
Where applicable, total GHG emissions and removals consistent with the coverage of the NDC (para. 77(b) of the MPGs)	kt CO2e	NA	532,574	554,095	NA	NA	NA
Contribution from the LULUCF sector for each year of the target period or target year, if not included in the inventory time series of total net GHG emissions and removals, as applicable (para.77(c) of the MPGs)	kt CO2e	NA	NA	NA	NA	NA	NA
<i>Each Party that participates in cooperative approaches that involve the use of ITMOs towards an NDC under Article 4 of the Paris Agreement or authorizes the use of mitigation outcomes for international mitigation purposes other than achievement of the NDC, shall provide: (para. 77(d) of the MPGs)</i>							
If applicable, an indicative multi-year emissions trajectory, trajectories or budget for its NDC implementation period (para. 7(a)(i), annex to decision 2/CMA.3)	NA	NA	NA	NA	NA	NA	NA
If applicable, multi-year emissions trajectory, trajectories or budget for its NDC implementation period that is consistent with the NDC (para. 7(b), annex to decision 2/CMA.3)	NA	NA	NA	NA	NA	NA	NA
Annual anthropogenic emissions by sources and removals by sinks covered by its NDC or, where applicable, from the emission or sink categories as identified by the host Party pursuant to paragraph 10 of annex to decision 2/CMA.3 (para. 23(a), annex to decision 2/CMA.3) (as part of para. 77 (d)(i) of the MPGs)	kt CO2e	NA	NA	NA	NA	NA	NA

Annual anthropogenic emissions by sources and removals by sinks covered by its NDC or, where applicable, from the portion of its NDC in accordance with paragraph 10, annex to decision 2/CMA.3 (para. 23(b), annex to decision 2/CMA.3)	NA	NA	NA	NA	NA	NA	NA
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If applicable, annual level of the relevant non-GHG indicator that is being used by the Party to track progress towards the implementation and achievement of its NDC and was selected pursuant to paragraph 65, annex to decision 18/CMA.1 (para. 23(i), annex, decision 2/CMA.3)	NA	NA	NA	NA	NA	NA	NA
Annual quantity of ITMOs first transferred (para. 23(c), annex to decision 2/CMA.3) (para. 77(d)(ii) of the MPGs)	NA	NA	NA	NA	NA	NA	NA
Annual quantity of mitigation outcomes authorized for use for other international mitigation purposes and entities authorized to use such mitigation outcomes, as appropriate (para 23(d), annex to decision 2/CMA.3) (para. 77(d)(ii) of the MPGs)	NA	NA	NA	NA	NA	NA	NA
Annual quantity of ITMOs used towards achievement of the NDC (para. 23(e), annex to decision 2/CMA.3) (para. 77(d)(ii) of the MPGs)	NA	NA	NA	NA	NA	NA	NA
Net annual quantity of ITMOs resulting from paras. 23(c)-(e), annex to decision 2/CMA.3 (para. 23(f), annex to decision 2/CMA.3)	NA	NA	NA	NA	NA	NA	NA
If applicable, the cumulative amount of ITMOs, divided by the number of elapsed years in the NDC implementation period (para. 7(a)(ii), annex to decision 2/CMA.3)	NA	NA	NA	NA	NA	NA	NA
Total quantitative corresponding adjustments used to calculate the emissions balance referred to in para. 23(k)(i), annex to decision 2/CMA.3, in accordance with the Party's method for applying corresponding adjustments consistent with section III.B (Application of corresponding adjustments) (para. 23(g), annex to decision 2/CMA.3)	NA	NA	NA	NA	NA	NA	NA

The cumulative information in respect of the annual information in para. 23(f), annex to decision 2/CMA.3, as applicable (para. 23(h), annex to decision 2/CMA.3)	NA	NA	NA	NA	NA	NA	NA
For metrics in tonnes of CO ₂ eq. or non-GHG, an annual emissions balance consistent with chapter III.B (Application of corresponding adjustment), annex, decision 2/CMA.3 (para. 23(k)(i), annex to decision 2/CMA.3) (as part of para. 77 (d)(ii) of the MPGs)	NA	NA	NA	NA	NA	NA	NA
For metrics in non-GHG, for each non-GHG metric determined by participating Parties, annual adjustments resulting in an annual adjusted indicator, consistent with para. 9 of chapter III.B (Corresponding adjustments), annex to decision 2/CMA.3, and future guidance to be adopted by the CMA (para. 23(k)(ii), annex to decision 2/CMA.3)	NA	NA	NA	NA	NA	NA	NA
Any other information consistent with decisions adopted by the CMA on reporting under Article 6 (para. 77(d)(iii) of the MPGs)	NA	NA	NA	NA	NA	NA	NA
<i>Assessment of the achievement of the Party's NDC under Article 4 of the Paris Agreement (para. 70 of the MPGs):</i>							
Restate the target of the Party's NDC:	NA	NA	NA	NA	NA	NA	NA
Information for reference point(s), level(s), baseline(s), base year(s), or starting point(s):	NA	NA	NA	NA	NA	NA	NA
Final information for the indicator for the target year/period, including the application of the necessary corresponding adjustments consistent with chapter III, annex, decision 2/CMA.3 (Corresponding adjustments) and consistent with future decisions from the CMA (para. 23(l), annex to decision 2/CMA.3):	NA	NA	NA	NA	NA	NA	NA
Comparison:	NA	NA	NA	NA	NA	NA	NA
Achievement of NDC: {yes/no, explanation}	NA	NA	NA	NA	NA	NA	NA

2.4. D. Mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans, related to implementing and achieving a nationally determined contribution under Article 4 of the Paris Agreement

INFORMATION ON ACTIONS, POLICIES AND MEASURES THAT SUPPORT THE IMPLEMENTATION AND ACHIEVEMENT OF ITS NDC UNDER ARTICLE 4 OF THE PARIS AGREEMENT (MPGs PARA 80-90)

Actions, policies and measures that support the implementation and achievement of Nigeria's NDC under Article 4 of the Paris Agreement focus primarily on the adoption of renewables for producing electricity, improving both supply and demand side energy efficiency, phasing out of flaring, Fuel transformation, Road transportation, Rice cultivation, Smart agriculture, Afforestation, Reforestation, Ecosystem preservation and solid waste management. These measures and policies cuts across sectors and categories and most of the latter are key categories, sometimes under both level and trend assessments with and without LULUCF.

- Under adoption of renewables for producing electricity, Nigeria aims at reaching 30% of its ongrid electricity production by 2030 and 13 GW of off-grid electricity also by 2030. The increased access to electricity from renewable sources will enable the use of clean energy in various socioeconomic sectors such as Energy Industries, Manufacturing Industries and Construction and Residential. It will reduce consumption of fossil fuels, fuelwood and charcoal, themselves responsible for emissions from deforestation and forest degradation.
- Improving energy efficiency targets the adoption of generators with higher conversion efficiencies, a reduction of losses in the transmission system, energy efficient equipment and appliances. The energy thus saved will improve availability and access, impacting the other categories as mentioned in the previous paragraph.
- Fuel transformation is mainly production of charcoal from wood harvested from forests, thereby releasing stored carbon from the sink.
- Regarding Road transportation, the objective is to boost public transport through a Bus Rapid Transport system with the introduction of 1000 buses, the latter operating at EURO III and IV standards and conversion of trucks and buses to run on CNG instead of diesel.
- For Rice cultivation, the target is to aerate 50% of paddy fields for lowering CH₄ emissions while the adoption of Smart agriculture, which consists of more environmentally sustainable crop and animal husbandry practices, will reduce the three direct GHG emissions.
- Afforestation, Reforestation and Forest protection will increase the sink capacity through higher removals.
- Ecosystem preservation and restoration of the extensive area under mangroves will boost CO₂ accumulation in both the plants and the soil.
- Under Solid Waste management, it is planned to compost 10% of organic waste by 2030 to reduce emissions.

Table 2.7 summarizes the mitigation policies and measures, actions and plans.

Table 2.7 Mitigation policies and measures, actions and plans

Name	Description (cost of the mitigation actions, nonGHG mitigation benefits, and how the mitigation action interacts with other mitigation actions, as appropriate (para. 83(a-c) of the MPGs) optional	Objectives	Type of instrument (regulatory, economic instrument or other (para. 82(d) of the MPGs)	Status (planned, adopted or implemented (para. 82(e) of the MPGs)	Sector(s) affected (energy, transport, industrial processes and product use, agriculture, LULUCF, waste management or other (paras. 81 and 82(f) of the MPGs)	Gases affected	Start year of implementation	Implementing entity or entities	Achieved	Expected
Conversion efficiency	Improve fuel conversion efficiency through upgrading of turbines of all fossil fuel generators Costs: Not estimated yet Benefits: Increased electricity availability, Higher electricity generation	100% of diesel and single cycle steam turbines replaced with combined cycle by 2030 Elimination of diesel and gasoline generators for electricity generation by 2030	Other	Planned	Energy	CO2, CH4, N2O	TBD	TBD	N/A	N/A

Energy efficiency	Reduce grid transmission and distribution losses Costs: Not estimated yet Benefits:	8% of electricity consumption in 2030 down from 15% in 2018	Other	Adopted	Energy	CO2, CH4, N2O	2018	TBD	N/A	N/A
	Increased electricity availability									
Energy efficiency	Improve energy efficiency in all sectors Costs: Not estimated yet Benefits:	2.5% per year reduction in energy intensity across all sectors by 2030	Other	Implemented	Energy	CO2, CH4, N2O	2021	TBD	N/A	N/A
Oil and natural gas	Detect and repair leakages in the gas transport system Costs: Not estimated yet Benefits:	60% reduction in methane fugitive emissions by 2031	Other	Planned	Energy	CH4	TBD	Ministry Petroleum Resources of	N/A	N/A

Oil and natural gas	Phase out flaring Costs: Not estimated yet Benefits: Increased gas utilization, Better air quality, Improved health	Zero gas flaring by 2030	Other	Implemented	Energy	CH4	2020	Ministry of Petroleum Resources		
Penetration of renewable energy	Increase adoption of ongrid and off-grid solar systems Costs: Not estimated yet Benefits: Increased access	30% of on grid electricity from renewables by 2030 13 GW off grid from renewables by 2030	Other	Implemented	Energy	CO2, CH4, N2O	2018	Ministry of Power	N/A	
	to electricity, Improved livelihood									

Improve road transportation system	Enhance mass public transport, substitute diesel with CNG and replace inefficient busses with cleaner ones Costs: Not estimated yet Benefits: Improved air quality, Improved health	1000 extra buses by 2030 Bus Rapid Transport (BRT) will account for 22.1% of passenger-km run by 2035 25% of trucks and buses using CNG by 2030, All vehicles meet EURO III standard by 2023 and EURO IV by 2030	Other	Implemented	Transport	CO2, CH4, N2O	TBD	Ministry of Transportation	N/A	N/A
Product uses as substitutes for ODS	Phasing out of HFCs Costs: Not estimated yet Benefits:	As per Kigali agreement	Regulatory or Other	Planned	IPPU	HFCs	TBD	Ministry of Environment	N/A	N/A
Climate smart agriculture	Implement a range of measures in an integrated approach to manage landscapes (e.g. cropland, livestock, forests and fisheries)) Costs: Not estimated yet Benefits:	80% in 2047	Other	Implemented	Agriculture	CH4, N2O	N/A	Ministry of Agriculture and Food Security	N/A	N/A

Crop residues	Reduce burning of crop residues Costs: Not estimated yet Benefits: Better air quality, Improved health	50% of fraction of crop residues burnt by 2030	Other	Planned	Agriculture	CH4, N2O	TBD	Ministry of Agriculture and Food Security	N/A	N/A
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Improve management of water of paddy rice	Introduce intermittent aeration of paddy fields Costs: Not estimated yet Benefits: Better air quality, Improved health	50% of cultivated land by 2030	Other	Planned	Agriculture	CH4	TBD	Ministry of Agriculture and Food Security	N/A	N/A
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Increase removals degraded forests in	Restore degraded forest area across the states in the southern belt, southwest quadrant and in states located in the savanna ecological zone of the country) Costs: Not estimated yet Benefits:	115, 584 ha by 2030	Regulatory or Other	Adopted	LULUCF	CO2	2018	Department of Forestry	N/A	415
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Increase removals of mangroves in	Protection and restoration of mangrove forest ecosystems across all the coastal states in the Niger delta Costs: Not estimated yet Benefits: Improved ecosystems	13,012 ha by 2030	Regulatory	Adopted	LULUCF	CO2	2018	Department of Forestry	N/A	N/A
Increase removals in natural forests	Improve management of natural forests in the southern belt and southwest quadrant of the country Costs: Not estimated yet Benefits: Improved ecosystems	128,528 ha by 2030	Regulatory or Other	Adopted	LULUCF	CO2	2018	Department of Forestry	N/A	N/A
Increase removals of Forestland	Increase forest protection throughout the country Costs: Not estimated yet Benefits: Improved ecosystems	46,219 ha by 2030	Regulatory	Adopted	LULUCF	CO2	2018	Department of Forestry	N/A	N/A

Reduce fuelwood harvest	Reduce the area of forestland used for fuelwood harvesting 19,346 ha Costs: Not estimated yet Benefits: Improved ecosystems	19,346 ha by 2030	Regulatory	Adopted	LULUCF	CO2	2018	Department of Forestry	N/A	N/A
Solid waste management	Composting of organic waste Costs: Not estimated yet Benefits: Better environment, better air quality, Improved health	10% by 2030	Other	Planned	Waste	CH4, N2O	TBD	Ministry of Environment	N/A	N/A

The methodologies and assumptions for estimating emission reductions from policies and measures, actions and plans are given in Table 2.8.

Table 2.8 Methodologies and assumptions adopted (MPGs Para 86)

<i>Description of action, policy or measure</i>	<i>Methodologies</i>	<i>Assumptions</i>
Improve fuel conversion efficiency through upgrading of turbines of all fossil fuel generators	Not applicable presently as measure has not yet developed	Not applicable now
Reduce grid transmission and distribution losses	Evaluate losses based on amounts of electricity generated and sold. Tracking of action not started.	Not applicable now
Improve energy efficiency in all sectors	To be worked out after discussions with the utility company for inclusion in BTR2	Not applicable now
Detect and repair leakages in the gas transport system	Evaluate losses using the input and output amounts in the system and use the 2006 IPCC GHG inventory software to estimate emissions	All fugitive emissions are attributed to leakages
Phase out flaring	IPCC 2006 Guidelines and inventory software to estimate emissions	Amount of gas derived from production data using IPCC 2006 guidelines
Increase adoption of on-grid and off-grid solar systems	IPCC 2006 Guidelines and inventory software to estimate emissions	1 MW electricity equates with 1,314 tonnes of natural gas
Enhance mass public transport, substitute diesel with CNG and replace inefficient buses with cleaner ones	IPCC 2006 Guidelines and inventory software to estimate emissions	Data collected reflect lower quantities of fuels combusted in the Road transport sub-category
Phasing out of HFCs	IPCC 2006 Guidelines and inventory software to estimate emissions	HFCs are recovered when equipment retired
Implement a range of measures in an integrated approach to manage landscapes developed (e.g. cropland, livestock, forests and fisheries)	Methodology still to be developed	Data collected reflect lower quantities of fuels combusted and lesser fertilizers used
Reduce burning of crop residues	IPCC 2006 Guidelines and inventory software to estimate emissions	Data collected reflect reduced amounts of residues burned
Introduce intermittent aeration of paddy fields	IPCC 2006 Guidelines and inventory software to estimate emissions	Aeration practice is successfully implemented, measured and documented
Restore degraded forest area across the states in the southern belt, southwest quadrant and in states located in the savanna ecological zone of the country)	IPCC 2006 Guidelines and inventory software to estimate emissions	Restored area measured and available as well as country specific stock and emission factors
Protection and restoration of mangrove forest ecosystems across all the coastal states in the Niger delta	IPCC 2006 Guidelines and inventory software to estimate emissions	Protected and restored areas measured and available as well as country specific stock and emission factors
Improve management of natural forests in the southern belt and southwest quadrant of the country	IPCC 2006 Guidelines and inventory software to estimate emissions	Area under improved management measured and available as well as country specific stock and emission factors

Increase forest protection throughout the country	IPCC 2006 Guidelines and inventory software to estimate emissions	Increased area under protection measured and available, Regulation for forest protection passed and gazetted
Reduce the area of forestland used for fuelwood harvesting by 19,346 ha	IPCC 2006 Guidelines and inventory software to estimate emissions	Area of forest harvested annually measured and available, Fuelwood consumers adopt alternative fuel for cooking or improved cookstoves
Composting of organic waste	IPCC 2006 Guidelines and inventory software to estimate emissions	Composting adopted and number of operators available as well as amount of organic waste being treated

Paragraphs 87 and 88 are not applicable

INFORMATION ABOUT HOW ITS ACTIONS, POLICIES AND MEASURES ARE MODIFYING LONGER-TERM TRENDS IN GHG EMISSIONS AND REMOVALS (MPG PARA 89)

Nigeria will reduce its rate of emissions compared to the base year and in the long term move towards reaching its net zero target when increasing the share of renewables for producing electricity, improving energy efficiency, increasing public transport through a Bus Rapid Transport system, converting trucks and buses to run on CNG instead of diesel.

Shifting from charcoal to cleaner fuel from renewable sources will avoid emissions while keeping its sink capacity which will also lead to the long-term target of reaching net zero.

Rice cultivation and Smart agriculture will reduce the three direct GHG emissions and enable Nigeria to meet the net zero target it has set in its NDC.

Afforestation, Reforestation, Forest protection and Ecosystem preservation and restoration of the extensive area under mangroves will increase the sink capacity through higher removals and negate emissions for meeting the long-term net zero target.

Composting of organic waste will reduce emissions and contribute to Nigeria reaching its net zero target.

DETAILED INFORMATION ON THE ASSESSMENT OF ECONOMIC AND SOCIAL IMPACTS OF RESPONSE MEASURES (MPGs PARA 90)

A summary of the economic and social impacts of response measures is available in Table 2.9.

Table 2.9 Economic and social impacts of response measures

Sectors and activities associated with the response measures	Social and economic consequences of the response measures	Challenges in and barriers to addressing the consequences	Actions to address the consequences
Energy			

Penetration of renewables in electricity generation	Increase access to electricity to households and businesses, enhance availability of power for socio-economic development, provide cleaner energy to households, improve air quality, preserve the environment and sinks by avoiding use of fuelwood/charcoal, the cause for deforestation and forest degradation, improve health, particularly women and children exposed to	Lack of funds to speed up implementation of the measure, limited financial capabilities of the poorer segment of the population to access and use electricity, insufficient capacity to absorb the technology and maintain the systems, awareness of the population on the benefits of using electricity instead of fossil and biomass as fuels	Improve access to finance, boost up the capacity building programme to keep it in line with the transfer of the technologies, enhance awareness programmes
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	toxic gases when cooking, reduce expenses for healthcare, improve livelihood generally, especially for women by relieving them from the burden of fetching fuelwood and enabling them more time for other social activities, income generation.		
Reducing emissions in Oil and Gas industry	improve air quality, Capture the gas and offer for sale to the population to replace other dirtier fossil fuels and fuelwood/charcoal, preserve the environment and sinks by avoiding use of fuelwood/charcoal, the cause for deforestation and forest degradation, provide cleaner energy to households, improve livelihood generally, especially for women by relieving them from the burden of fetching fuelwood and enabling them more time for other social activities, reduce the effects of toxic gases, particularly women and children exposed to toxic gases when cooking, income generation	Lack of funds to speed up implementation of the measure, limited financial capabilities of the poorer segment of the population to buy the liquefied gas, awareness of the population on the benefits of using a cleaner energy source instead of other fossil and biomass as fuels implementing a distribution network for selling of the gas	Improve access to finance, subsidize the bottled gas, enhance awareness programmes, lack of funds to set up a distribution network
Enhancing public road transport	improve air quality, preserve the environment, improve livelihood generally, reduce the effects of toxic gases on the population, reduce traffic jams and loss of time, income generation, loss of jobs and revenue for workers	Lack of funds to speed up implementation of the measure, limited financial capabilities of the poorer segment of the population to adopt the cleaner transport mode, awareness of the population on the benefits of using a cleaner transport mode	Improve access to finance, subsidize the cleaner transport mode, enhance awareness programmes

Improving energy efficiency	Increase access to electricity to households and businesses, enhance availability of power for socio-economic development, provide cleaner energy to households, improve air quality, preserve the environment and sinks by avoiding use of fuelwood/charcoal, the cause for deforestation and forest degradation, improve health, particularly women and children exposed to toxic gases when cooking, reduce expenses for healthcare, improve livelihood generally, especially for women by relieving them from the	Lack of funds top speed up implementation of the measure, limited financial capabilities of the poorer segment of the population to access and use electricity, insufficient capacity to absorb the technology and maintain the systems, awareness of the population on the benefits of using electricity instead of fossil and biomass as fuels	Improve access to finance, boost up the capacity building programme to keep it in line with the transfer of the technologies, enhance awareness programmes
	burden of fetching fuelwood and enabling them more time for other social activities, income generation		
IPPU			
Reducing ODS emissions	Improved environment, better health	Lack for funds to implementation, Successful technology transfer, Limited capacity of nationals	Access funds, transfer technology and build capacity
Agriculture			
Climate smart agriculture	Higher productivity, lower expenditures, improved income, better quality products for improved health,	lack of capacity and knowledge of the techniques, awareness of producers	Enhance capacity building and awareness programmes
Avoid burning of crop residues	Improved quality of air and the environment, better health, alternative use of the crop residues such as electricity generation for substituting fossil fuels or composting/biochar production, income generation	Higher costs to deal with the residues, limited funds and knowledge for alternative uses, technology transfer	Access to finance and technology
Improve management of water of paddy rice	Improved quality of air and the environment, better health	Knowledge and technology transfer, lack of awareness of growers	Enhance capacity building and awareness programmes
LULUCF			
Increasing removals through improved forest management and conservation	Improved environment, better health, enhanced ecosystem services	lack of finance to purchase alternative fuel for cooking in place of fuelwood/charcoal, low awareness of communities	lack of finance, enhance capacity building and awareness programmes

Increase removals in ecosystem (mangroves)	Improved environment, better health, enhanced ecosystem services	lack of finance to purchase alternative fuel for cooking in place of fuelwood/charcoal, low awareness of communities	lack of finance, enhance capacity building and awareness programmes
Preventing deforestation from fuelwood harvest	Improved environment, better health, enhanced ecosystem services	lack of finance to purchase alternative fuel for cooking in place of fuelwood/charcoal, low awareness of communities	lack of finance, enhance capacity building and awareness programmes
Waste			
Promoting composting	Improved environment, better health, income generation	lack of capacity and knowledge of the technique, low awareness on benefits of using compost	promote technology transfer, enhance awareness of potential users
Production of biogas	Improved environment and better health from using biogas instead of fuelwood/charcoal	lack of capacity and knowledge of the technology, low awareness on benefits of using compost	promote technology transfer, enhance awareness of potential producers

2.5. E. Summary of greenhouse gas emissions and removals

SUMMARY OF GHG EMISSIONS AND REMOVALS (MPGs PARA 91)

The Summary S10 table from the CRTs, for GHG emissions and removals, is given in Table 2.10.

Table 2.10 Summary of greenhouse gas emissions and removals in accordance with the common reporting table 10 emission trends – Summary

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	Reference year/period for NDC ⁽¹⁾	Base year ⁽²⁾	1990	2000	2001	2002	2003	2004	2005	2006
	kt CO ₂ equivalents (kt) ⁽³⁾									
Total (net emissions) ⁽⁴⁾	614,171.58			368,498.78	382,652.99	393,674.68	410,172.27	420,758.81	433,076.28	441,392.06
1. Energy	193,346.72			95,092.18	102,617.26	107,055.73	115,606.49	118,410.52	120,975.20	119,001.75
1.A. Fuel combustion	156,336.20			74,679.02	79,977.91	86,168.50	91,403.18	91,626.74	93,513.95	90,697.41
1.A.1. Energy industries	29,863.81			15,126.13	15,413.59	16,423.92	14,529.18	17,092.65	18,576.25	18,511.37
1.A.2. Manufacturing industries and construction	15,168.32			5,262.75	4,379.84	4,258.81	9,772.42	7,962.87	8,584.28	9,239.05
1.A.3. Transport	56,818.00			21,432.35	24,142.04	28,281.68	30,519.10	30,986.63	27,424.40	24,606.22
1.A.4. Other sectors	54,486.08			32,857.80	36,042.44	37,204.09	36,582.47	35,584.59	38,929.02	38,340.76
1.A.5. Other	NE,NO			NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO
1.B. Fugitive emissions from fuels	37,010.52			20,413.16	22,639.36	20,887.23	24,203.31	26,783.78	27,461.25	28,304.35
1.B.1. Solid fuels	4,897.11			1,416.50	1,578.74	1,760.51	1,968.14	2,202.07	2,463.82	2,757.22
1.B.2. Oil and natural gas and other emissions from energy production	32,113.41			18,996.66	21,060.62	19,126.72	22,235.17	24,581.71	24,997.43	25,547.13
1.C. CO ₂ Transport and storage	NE,NO			NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO
2. Industrial processes and product use	9,976.89			1,150.42	1,151.45	1,113.79	1,661.72	1,800.72	2,000.34	2,140.80
2.A. Mineral industry	8,583.30			844.82	845.85	808.00	772.89	911.78	1,111.54	1,251.99
2.B. Chemical industry	450.39			1.47	1.47	1.66	1.21	1.31	1.18	1.18
2.C. Metal industry	943.20			304.14	304.14	304.14	887.63	887.63	887.63	887.63
2.D. Non-energy products from fuels and solvent use	NA,NE			NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE
2.E. Electronic industry	FX,NA,NE			FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE
2.F. Product uses as substitutes for ODS	FX,NE,NO			FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO

2.G. Other product manufacture and use	FX,NE,NO			FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO
2.H. Other	FX,NE,NO			FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO
3. Agriculture	72,491.89			44,480.26	45,713.24	46,444.34	47,626.07	48,365.20	50,257.24	52,528.23	
3.A. Enteric fermentation	36,063.55			23,339.87	24,148.32	24,470.00	25,127.48	25,542.77	25,960.53	27,030.94	
3.B. Manure management	3,904.69			2,409.12	2,537.46	2,628.51	2,688.59	2,743.02	2,799.43	2,905.08	
3.C. Rice cultivation	10,634.32			5,752.01	5,537.52	5,715.39	5,780.79	6,141.76	6,523.66	7,127.89	
3.D. Agricultural soils	21,328.58			12,793.13	13,296.90	13,417.10	13,970.54	13,906.95	14,665.01	15,236.95	
3.E. Prescribed burning of savannahs	NO			NO	NO	NO	NO	NO	NO	NO	
3.F. Field burning of agricultural residues	4.17			1.17	1.13	1.96	2.06	2.11	2.15	2.30	
3.G. Liming	NE			NE	NE	NE	NE	NE	NE	NE	
3.H. Urea application	556.57			184.95	191.91	211.38	56.62	28.60	306.46	225.06	
3.I. Other carbon-containing fertilizers	NE			NE	NE	NE	NE	NE	NE	NE	
3.J. Other	NE,NO			NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	
4. Land use, land-use change and forestry⁽⁴⁾	304,141.30			208,674.50	213,249.66	218,338.55	223,785.58	229,913.02	236,815.30	243,906.44	
4.A. Forest land	308,357.45			214,487.95	218,938.70	223,889.63	229,305.98	235,358.70	242,045.14	249,020.51	
4.B. Cropland	IE,NA,NE			IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	
4.C. Grassland	IE,NA,NE			IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	
4.D. Wetlands	NA,NE			NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	
4.E. Settlements	NA,NE			NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	
4.F. Other land	NE,NO			NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	
4.G. Harvested wood products	-4,216.15			-5,813.45	-5,689.04	-5,551.08	-5,520.39	-5,445.68	-5,229.84	-5,114.07	
4.H. Other	NA,NO			NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	
5. Waste	34,214.78			19,101.41	19,921.38	20,722.27	21,492.40	22,269.35	23,028.20	23,814.83	
5.A. Solid waste disposal	9,819.30			3,767.61	4,196.64	4,578.22	4,940.19	5,285.59	5,612.88	5,941.29	
5.B. Biological treatment of solid waste	NE,NO			NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	
5.C. Incineration and open burning of waste	2,713.25			1,762.70	1,807.60	1,848.88	1,891.19	1,940.40	1,980.25	2,032.87	
5.D. Wastewater treatment and discharge	21,682.23			13,571.10	13,917.15	14,295.17	14,661.03	15,043.35	15,435.07	15,840.67	

5.E. Other	NA,NO			NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
6. Other (as specified in summary 1)	FX			FX	FX	FX	FX	FX	FX	FX

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2007	2008	2009	2010	2011	2012	2013	2014	2016	2016
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	kt CO ₂ equivalents (kt) ⁽³⁾									
Total (net emissions) ⁽⁴⁾	468,555.81	473,549.07	454,688.31	489,423.90	514,807.46	543,476.87	560,527.68	582,520.65	587,015.65	595,122.19

Memo items: ⁽⁵⁾										
1.D.1. International bunkers	3,117.84			1,807.07	1,788.03	1,616.57	1,826.13	1,953.14	2,010.36	1,975.43
1.D.1.a. Aviation	2,066.43			587.77	590.95	594.13	597.30	600.48	708.50	714.86
1.D.1.b. Navigation	1,051.42			1,219.30	1,197.09	1,022.45	1,228.83	1,352.66	1,301.85	1,260.58
1.D.2. Multilateral operations	NE			NE	NE	NE	NE	NE	NE	NE
1.D.3. CO₂ emissions from biomass	480,002.29			299,336.30	307,777.89	316,466.49	326,112.90	335,300.10	345,673.53	356,687.44
1.D.4. CO₂ captured	NE			NE	NE	NE	NE	NE	NE	NE
5.F.1. Long-term storage of C in waste disposal sites	29,276.10			6,289.21	7,207.35	8,168.07	9,166.20	10,199.95	11,277.81	12,390.06
Indirect N₂O										
Indirect CO₂ ⁽⁶⁾										

Total CO₂ equivalent emissions without LULUCF	310,030.28			159,824.28	169,403.33	175,336.13	186,386.68	190,845.79	196,260.98	197,485.61
Total CO₂ equivalent emissions with LULUCF	614,171.58			368,498.78	382,652.99	393,674.68	410,172.27	420,758.81	433,076.28	441,392.06
Total CO₂ equivalent emissions, including indirect CO₂, without LULUCF	310,030.28			159,824.28	169,403.33	175,336.13	186,386.68	190,845.79	196,260.98	197,485.61
Total CO₂ equivalent emissions, including indirect CO₂, with LULUCF	614,171.58			368,498.78	382,652.99	393,674.68	410,172.27	420,758.81	433,076.28	441,392.06

1. Energy	120,961.06	127,862.95	114,792.92	133,222.47	145,888.58	154,822.34	172,593.92	186,590.76	184,062.26	187,441.59
1.A. Fuel combustion	90,102.92	98,034.98	89,262.74	101,290.20	113,219.07	120,434.36	141,424.82	152,896.10	147,390.74	153,682.76
1.A.1. Energy industries	18,884.91	19,071.43	16,992.62	21,033.38	24,338.47	26,166.08	26,629.81	29,524.03	29,921.35	31,385.64
1.A.2. Manufacturing industries and construction	10,458.30	11,408.70	6,617.74	9,879.09	15,079.30	16,044.12	18,768.68	20,594.29	19,660.02	15,302.56
1.A.3. Transport	22,339.51	26,686.73	24,974.77	30,508.89	32,534.88	35,875.25	46,467.18	51,022.16	46,390.28	53,172.06
1.A.4. Other sectors	38,420.20	40,868.11	40,677.60	39,868.83	41,266.42	42,348.91	49,559.14	51,755.62	51,419.08	53,822.50

1.A.5. Other	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO
1.B. Fugitive emissions from fuels	30,858.14	29,827.97	25,530.18	31,932.28	32,669.52	34,387.98	31,169.10	33,694.66	36,671.52	33,758.83	
1.B.1. Solid fuels	3,881.71	3,556.30	3,083.39	3,549.84	4,095.38	4,708.61	4,438.08	4,571.24	4,696.09	4,701.28	
1.B.2. Oil and natural gas and other emissions from energy production	26,976.43	26,271.66	22,446.79	28,382.44	28,574.13	29,679.37	26,731.02	29,123.42	31,975.43	29,057.55	
1.C. CO ₂ Transport and storage	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	
2. Industrial processes and product use	2,699.89	3,395.54	3,992.47	4,774.53	5,559.19	7,323.13	8,792.51	8,955.21	9,791.23	8,322.41	
2.A. Mineral industry	1,811.08	2,506.71	3,103.64	3,940.52	4,682.19	6,403.14	7,829.53	7,735.89	8,385.88	6,886.15	
2.B. Chemical industry	1.19	1.20	1.20	1.21	1.22	1.23	1.23	214.58	357.64	388.55	
2.C. Metal industry	887.63	887.63	887.63	832.80	875.78	918.77	961.75	1,004.73	1,047.71	1,047.71	
2.D. Non-energy products from fuels and solvent use	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	
2.E. Electronic industry	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	
2.F. Product uses as substitutes for ODS	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	
2.G. Other product manufacture and use	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	
2.H. Other	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	
3. Agriculture	53,217.08	54,886.36	55,245.48	59,184.75	58,863.79	61,694.24	63,324.07	64,491.88	65,253.08	69,462.80	
3.A. Enteric fermentation	28,118.62	29,193.95	30,292.88	31,667.84	32,178.65	32,700.00	33,232.08	33,775.24	34,329.75	34,895.76	
3.B. Manure management	3,016.27	3,124.45	3,240.31	3,166.38	3,256.92	3,335.40	3,416.67	3,503.85	3,589.10	3,689.17	
3.C. Rice cultivation	6,411.18	6,230.69	4,804.80	6,363.13	5,936.19	7,491.00	7,667.78	8,061.51	8,165.20	10,727.62	
3.D. Agricultural soils	15,612.29	16,198.74	16,797.46	17,676.78	17,311.06	17,918.99	18,660.31	18,838.44	18,914.77	19,777.77	
3.E. Prescribed burning of savannahs	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	
3.F. Field burning of agricultural residues	3.08	3.52	3.58	2.24	2.93	3.21	3.47	4.01	4.16	4.23	
3.G. Liming	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
3.H. Urea application	55.63	135.01	106.45	308.39	178.02	245.63	343.75	308.83	250.10	368.26	
3.I. Other carbon-containing fertilizers	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
3.J. Other	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	
4. Land use, land-use change and forestry⁽⁴⁾	267,057.35	261,964.08	254,412.32	265,154.56	276,535.15	290,747.95	286,025.96	291,779.03	296,276.65	297,353.21	
4.A. Forest land	272,166.47	266,914.19	259,214.34	269,853.23	281,751.30	294,889.28	290,905.35	296,977.04	300,964.76	302,144.30	
4.B. Cropland	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	
4.C. Grassland	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	
4.D. Wetlands	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	
4.E. Settlements	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	
4.F. Other land	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	
4.G. Harvested wood products	-5,109.12	-4,950.10	-4,802.02	-4,698.67	-5,216.15	-4,141.33	-4,879.39	-5,198.01	-4,688.11	-4,791.09	
4.H. Other	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	
5. Waste	24,620.42	25,440.14	26,245.12	27,087.59	27,960.75	28,889.20	29,791.22	30,703.77	31,632.43	32,542.18	

5.A. Solid waste disposal	6,255.26	6,567.26	6,872.94	7,188.49	7,510.50	7,839.19	8,161.12	8,492.19	8,836.33	9,171.14
5.B. Biological treatment of solid waste	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO
5.C. Incineration and open burning of waste	2,081.28	2,137.43	2,189.05	2,242.02	2,296.61	2,359.30	2,416.30	2,474.61	2,540.42	2,600.53
5.D. Wastewater treatment and discharge	16,283.88	16,735.45	17,183.13	17,657.08	18,153.63	18,690.72	19,213.80	19,736.97	20,255.68	20,770.51
5.E. Other	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO
6. Other (as specified in summary 1)	FX	FX	FX	FX	FX	FX	FX	FX	FX	FX

Memo items: ⁽⁵⁾										
1.D.1. International bunkers	1,956.38	3,764.25	3,195.51	2,490.08	2,490.13	2,579.07	2,255.08	2,156.58	2,267.76	2,340.97
1.D.1.a. Aviation	733.92	2,646.56	2,007.95	1,156.48	1,220.02	1,296.27	1,077.05	959.50	1,077.05	1,347.11
1.D.1.b. Navigation	1,222.46	1,117.69	1,187.56	1,333.60	1,270.11	1,282.79	1,178.02	1,197.09	1,190.71	993.86
1.D.2. Multilateral operations	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
1.D.3. CO₂ emissions from biomass	371,399.92	382,277.86	393,597.79	409,745.49	425,738.83	447,080.50	452,204.25	450,349.14	458,079.08	465,027.98
1.D.4. CO₂ captured	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
5.F.1. Long-term storage of C in waste disposal sites	13,543.63	14,736.09	15,978.92	17,272.09	18,614.32	19,996.95	21,432.77	22,925.79	24,458.50	26,024.84
Indirect N₂O										

Indirect CO₂ ⁽⁶⁾										
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Total CO₂ equivalent emissions without LULUCF	201,498.46	211,584.99	200,275.99	224,269.34	238,272.31	252,728.92	274,501.72	290,741.62	290,739.00	297,768.98
Total CO₂ equivalent emissions with LULUCF	468,555.81	473,549.07	454,688.31	489,423.90	514,807.46	543,476.87	560,527.68	582,520.65	587,015.65	595,122.19
Total CO₂ equivalent emissions, including indirect CO₂, without LULUCF	201,498.46	211,584.99	200,275.99	224,269.34	238,272.31	252,728.92	274,501.72	290,741.62	290,739.00	297,768.98
Total CO₂ equivalent emissions, including indirect CO₂, with LULUCF	468,555.81	473,549.07	454,688.31	489,423.90	514,807.46	543,476.87	560,527.68	582,520.65	587,015.65	595,122.19

GREENHOUSE GAS SOURCE AND SINK CATEGORIES	2017	2018	2019	2020	2021	2022	Change from reference Year to latest reported year
	kt CO ₂ equivalents (kt) ⁽³⁾						%
Total (net emissions)⁽⁴⁾	600,434.86	614,171.58	625,288.19	520,395.46	532,573.70	554,095.14	-9.78
1. Energy	186,332.99	193,346.72	199,402.44	187,324.51	195,685.35	200,422.03	3.66
1.A. Fuel combustion	151,353.56	156,336.20	161,859.14	151,360.28	162,122.12	169,326.47	8.31
1.A.1. Energy industries	29,464.03	29,863.81	29,362.54	29,988.77	29,497.75	33,791.96	13.15
1.A.2. Manufacturing industries and construction	14,129.93	15,168.32	15,432.10	14,518.65	16,075.63	15,066.46	-0.67
1.A.3. Transport	53,211.57	56,818.00	60,761.42	52,009.44	58,947.99	59,044.83	3.92
1.A.4. Other sectors	54,548.03	54,486.08	56,303.09	54,843.40	57,600.74	61,423.22	12.73
1.A.5. Other	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	–
1.B. Fugitive emissions from fuels	34,979.43	37,010.52	37,543.29	35,964.23	33,563.24	31,095.57	-15.98
1.B.1. Solid fuels	4,782.14	4,897.11	4,976.62	5,054.86	5,077.60	5,744.54	17.30
1.B.2. Oil and natural gas and other emissions from energy production	30,197.29	32,113.41	32,566.67	30,909.37	28,485.64	25,351.03	-21.06
1.C. CO ₂ Transport and storage	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	–
2. Industrial processes and product use	7,702.86	9,976.89	10,183.12	11,410.44	12,619.49	12,043.72	20.72

2.A. Mineral industry	6,203.39	8,583.30	8,895.42	10,228.62	11,321.42	10,931.27	27.36
2.B. Chemical industry	419.47	450.39	481.30	512.22	765.27	716.45	59.07
2.C. Metal industry	1,080.00	943.20	806.40	669.60	532.80	396.00	-58.02
2.D. Non-energy products from fuels and solvent use	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	–
2.E. Electronic industry	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	FX,NA,NE	–
2.F. Product uses as substitutes for ODS	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	–
2.G. Other product manufacture and use	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	–
2.H. Other	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	FX,NE,NO	–
3. Agriculture	72,528.93	72,491.89	73,539.97	75,886.58	76,205.15	77,980.58	7.57
3.A. Enteric fermentation	35,473.60	36,063.55	36,666.02	37,294.80	37,910.68	38,369.32	6.39
3.B. Manure management	3,794.46	3,904.69	4,020.20	4,012.28	4,119.75	4,194.66	7.43
3.C. Rice cultivation	11,632.15	10,634.32	10,794.30	10,973.29	11,300.26	12,017.24	13.00
3.D. Agricultural soils	21,046.86	21,328.58	21,538.93	22,847.50	22,326.03	22,804.41	6.92
3.E. Prescribed burning of savannahs	NO	NO	NO	NO	NO	NO	–
3.F. Field burning of agricultural residues	4.13	4.17	4.18	4.16	4.17	4.17	-0.10
3.G. Liming	NE	NE	NE	NE	NE	NE	–
3.H. Urea application	577.74	556.57	516.35	754.54	544.25	590.78	6.15

3.I. Other carbon-containing fertilizers	NE	NE	NE	NE	NE	NE	NE	–
3.J. Other	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	–
4. Land use, land-use change and forestry⁽⁴⁾	300,615.47	304,141.30	306,996.12	209,649.77	210,988.82	225,598.91	225,598.91	-25.82
4.A. Forest land	305,109.05	308,357.45	311,166.92	333,955.48	335,669.44	349,773.77	349,773.77	13.43
4.B. Cropland	IE,NA,NE	IE,NA,NE	IE,NA,NE	-111,178.86	-111,178.87	-111,178.86	-111,178.86	–
4.C. Grassland	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	IE,NA,NE	–
4.D. Wetlands	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	NA,NE	–
4.E. Settlements	NA,NE	NA,NE	NA,NE	-8,876.49	-8,876.49	-8,876.49	-8,876.49	–
4.F. Other land	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	–
4.G. Harvested wood products	-4,493.59	-4,216.15	-4,170.80	-4,250.36	-4,625.25	-4,119.51	-4,119.51	-2.29
4.H. Other	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	–
5. Waste	33,254.62	34,214.78	35,166.53	36,124.16	37,074.88	38,049.89	38,049.89	11.21
5.A. Solid waste disposal	9,498.53	9,819.30	10,142.64	10,473.59	10,794.78	11,127.99	11,127.99	13.33
5.B. Biological treatment of solid waste	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	NE,NO	–
5.C. Incineration and open burning of waste	2,645.97	2,713.25	2,779.18	2,843.14	2,908.88	2,975.42	2,975.42	9.66
5.D. Wastewater treatment and discharge	21,110.11	21,682.23	22,244.71	22,807.43	23,371.22	23,946.47	23,946.47	10.44
5.E. Other	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	NA,NO	–
6. Other (as specified in summary 1)	FX	FX	FX	FX	FX	FX	FX	–

Memo items:⁽⁵⁾								
1.D.1. International bunkers	2,604.94	3,117.84	3,161.99	1,780.86	2,128.18	2,802.67	2,802.67	-10.11
1.D.1.a. Aviation	1,603.77	2,066.43	2,072.80	964.09	1,450.24	1,863.16	1,863.16	-9.84
1.D.1.b. Navigation	1,001.17	1,051.42	1,089.20	816.77	677.93	939.51	939.51	-10.64
1.D.2. Multilateral operations	NE	NE	NE	NE	NE	NE	NE	–
1.D.3. CO₂ emissions from biomass	472,454.80	480,002.29	487,570.67	495,351.45	503,239.67	520,067.33	520,067.33	8.35
1.D.4. CO₂ captured	NE	NE	NE	NE	NE	NE	NE	–
5.F.1. Long-term storage of C in waste disposal sites	27,628.40	29,276.10	30,972.27	32,700.79	34,483.01	36,318.97	36,318.97	24.06
Indirect N₂O								–

Indirect CO₂⁽⁶⁾								–
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Total CO₂ equivalent emissions without LULUCF	299,819.40	310,030.28	318,292.06	310,745.69	321,584.88	328,496.23	5.96
Total CO₂ equivalent emissions with LULUCF	600,434.86	614,171.58	625,288.19	520,395.46	532,573.70	554,095.14	-9.78
Total CO₂ equivalent emissions, including indirect CO₂, without LULUCF	299,819.40	310,030.28	318,292.06	310,745.69	321,584.88	328,496.23	5.96
Total CO₂ equivalent emissions, including indirect CO₂, with LULUCF	600,434.86	614,171.58	625,288.19	520,395.46	532,573.70	554,095.14	-9.78

2.6. F. Projections of greenhouse gas emissions and removals, as applicable (MPGs 92-94 partly, 95-101)

The emissions for the year 2022 and the projections for 2024, 2030, 2035 and 2040 are given in Table 2.11 while Figures 2.2 and 2.3 show the trend of the projections on a sector and gas basis respectively. Since there are no CH₄ nor N₂O emitted from the LULUCF sector, the same line graph represents the “with” and “without” LULUCF for these 2 gases.

Table 2.11 Information on projections of greenhouse gas emissions and removals under a ‘with measures’ scenario

	Most recent year in the Party’s national inventory report (kt CO ₂ e)	Projections of GHG emissions and removals (kt CO ₂ e)			
	2022	2025	2030	2035	2040
Sector					
Energy	141,377	160,962	224,545	296,197	368,112
Transport	59,045	67,273	123,093	216,966	361,772
Industrial processes and product use	12,044	13,715	20,162	30,224	43,836
Agriculture	77,981	83,765	93,721	103,953	114,302
LULUCF	225,599	242,332	271,136	300,737	330,677
Waste	38,050	40,872	45,730	50,723	55,773
Other (specify)	-	-	-	-	-
Gas					
CO ₂ emissions including net CO ₂ from LULUCF	362,335	397,989	507,127	649,179	826,756
CO ₂ emissions excluding net CO ₂ from LULUCF	136,736	155,656	235,991	348,442	496,079
CH ₄ emissions including CH ₄ from LULUCF	160,338	176,789	230,295	300,358	388,584
CH ₄ emissions excluding CH ₄ from LULUCF	160,338	176,789	230,295	300,358	388,584
N ₂ O emissions including N ₂ O from LULUCF	31,422	34,141	40,965	49,262	59,131
N ₂ O emissions excluding N ₂ O from LULUCF	31,422	34,141	40,965	49,262	59,131
HFCs	NE,FX	NE,FX	NE,FX	NE,FX	NE,FX
PFCs	NE,FX	NE,FX	NE,FX	NE,FX	NE,FX
SF ₆	NE,FX	NE,FX	NE,FX	NE,FX	NE,FX
NF ₃	NO	NO	NO	NO	NO
Other (specify)	-	-	-	-	-
Total with LULUCF	554,095	608,919	778,387	998,799	1,274,472
Total without LULUCF	328,496	366,587	507,251	698,063	943,794

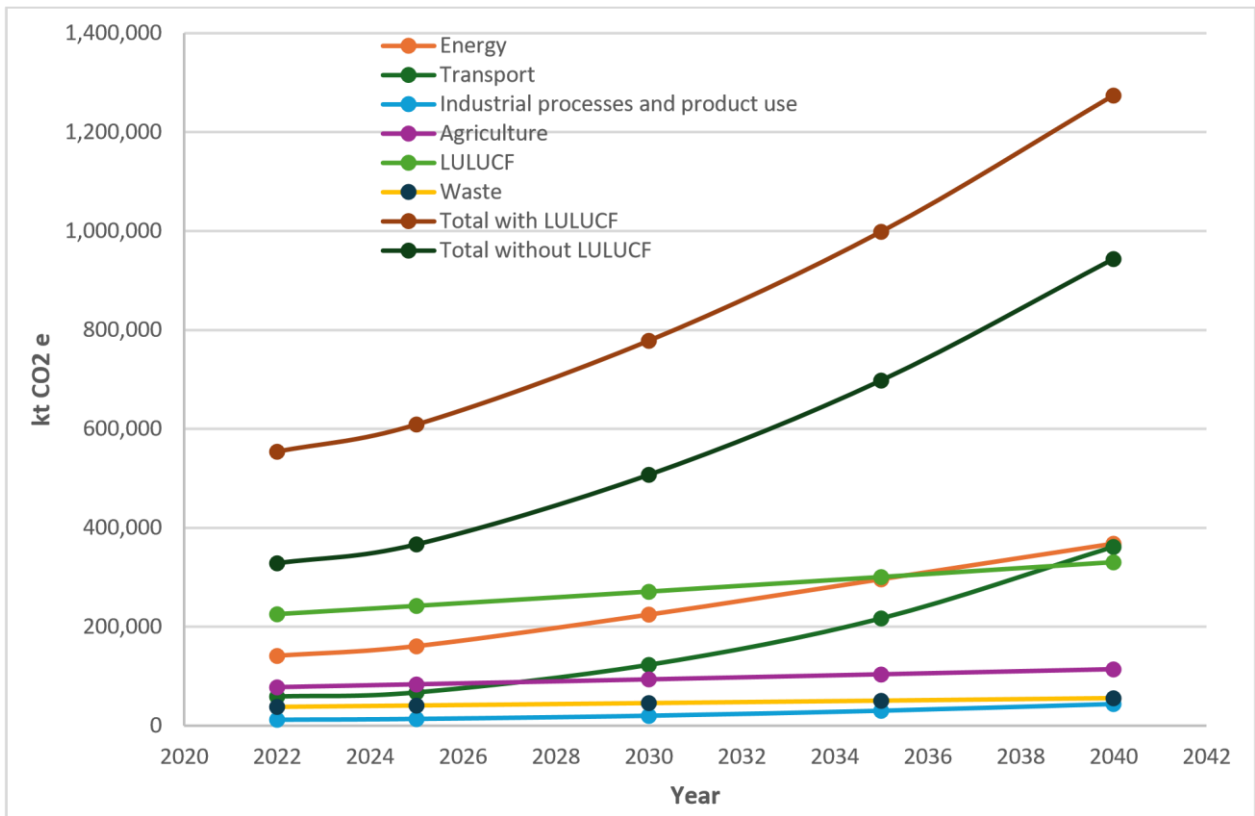


Figure 2.2 Year 2022 emissions and projections up to 2040 under a 'with measures' scenario – By Sector

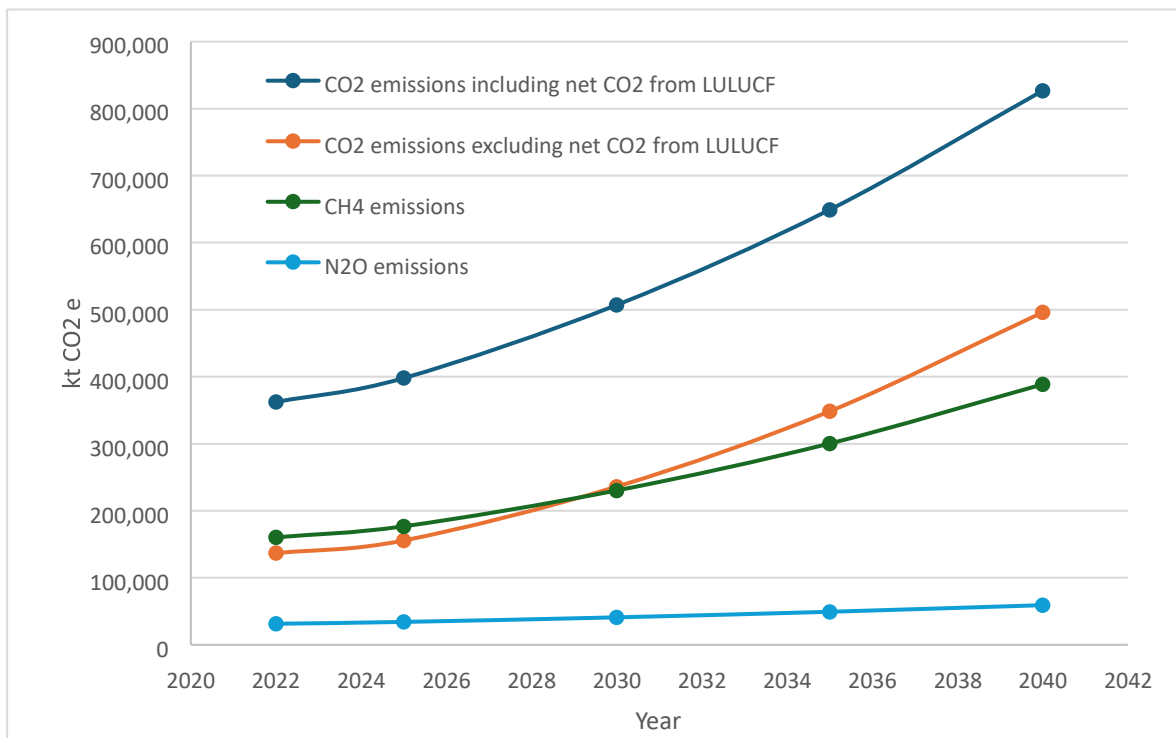


Figure 2.3. Year 2022 emissions and projections up to 2040 under a 'with measures' scenario – By Gas

For consistency purposes a single approach has been adopted whereas the IPCC 2006 Guidelines, its Wetlands Supplement and 2019 Refinements have been used for estimating emissions and removals for

all sectors, categories and sources as well as for making projections under all scenarios. No model has been adopted because of lack of data to properly calibrate and validate them as most of the time, they have been developed under very specific circumstances, namely those of developed countries and do not fit the circumstances of developing ones. Metrics adopted are the GWPs from the IPCC AR5.

Criteria adopted for making projections are either GDP or population growth rates. To ensure accuracy, different rates have been adopted for the different socio-economic sectors. The GDP and/or population rate adopted are provided in Table 2.12.

Table 2.12 Key underlying assumptions and parameters used for projections

Key underlying assumptions and parameters	Unit, as applicable	Most recent year in the Party’s national inventory report, or the most recent year for which data are available				
		2022	2025	2030	2035	2040
GDP growth for sectors Energy, IPPU	%	3.30	6.80	8.78	8.10	7.30
Population growth for sectors Agriculture, LULUCF and Waste	%	2.50	2.38	2.20	2.02	1.85

The GDP adopted varies between 6.80% to 8.78% and could be on the high side. To provide a better insight on the future, and in line with normal economic development trends, two sensitivity assessments have been made as follows:

- Sensitivity 1: -25% GDP growth rate and -10% population growth rate
- Sensitivity 2: +25% GDP growth rate and +10% population growth rate

The comparison of the BAU 2022 GHG emission projection and the two sensitivity assessments 1 and 2 are presented in Figure 2.4.

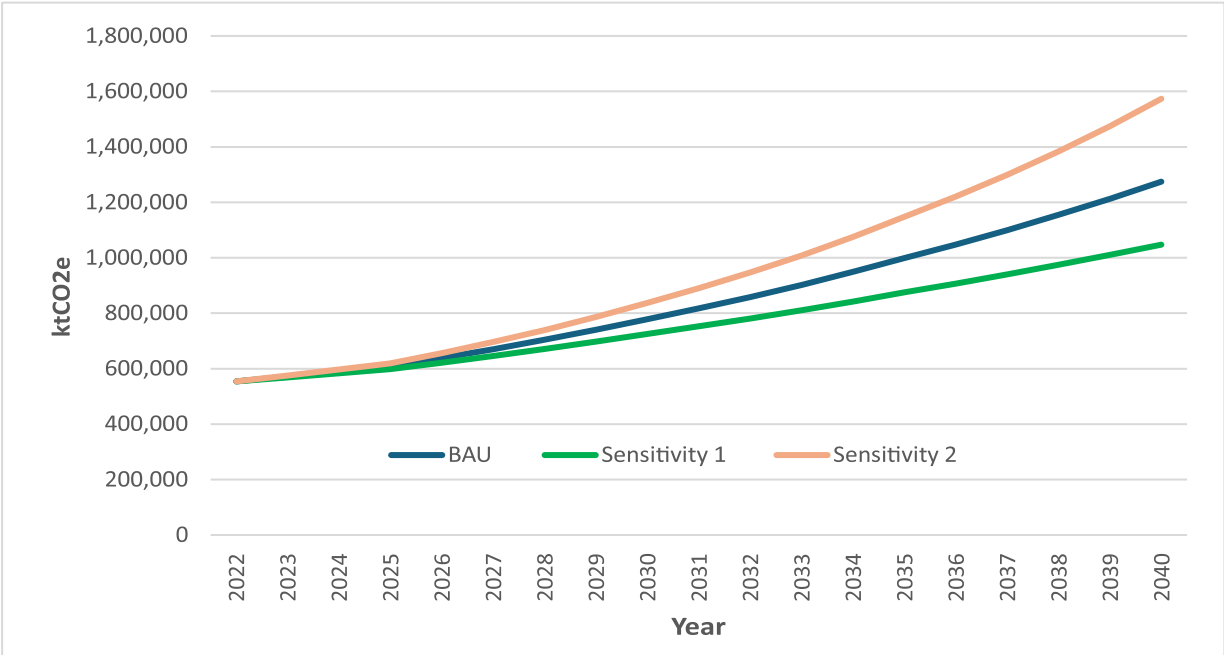


Figure 2.4 Comparison of BAU and Sensitivity 1 and 2 projection scenarios

The projection of the key indicator is given in Table 2.13.

Table 2.13 Projection of key indicator (MPGs Para 97)

		Most recent year in the Party's national inventory report (kt CO2 e)	Projections of GHG emissions and removals (kt CO2 e)			
Key indicator(s)	Unit, as applicable	2022	2025	2030	2035	2040
National net GHG emissions including LULUCF	kt CO2 e	554,095	608,919	778,387	998,799	1,274,472

3. Information related to climate change impacts and adaptation under Article 7 of the Paris Agreement (MPGs Para 104-117)

3.1. A. National circumstances, institutional arrangements and legal frameworks

(a) National circumstances relevant to its adaptation actions

The Federal Republic of Nigeria extends over an area of 923,768 sq. km and comprises 36 States and the Federal Capital Territory. It has 774 local Government Councils that provide governance at the grass root – reflecting the three-tier (the Federal, the States and the Local Government) of government. The 36 States are regrouped into Six Geopolitical entities known as North-west, North-east, North-central, South-west, South-east and South-south zones.

Nigeria possesses a multitude of natural ecosystems, ranging from the arid and semi-arid savanna to mountain forests, rich seasonal floodplain environments, rainforests, vast freshwater swamp forests and diverse coastal vegetation. The highest regions are the Jos Plateau culminating at 2,000 meters above sea level and the mountains along the border with Cameroon.

According to the last official 2006 Population and Housing Census, Nigeria had about 140 million inhabitants. Based on this figure, it has been projected that the population increased to 206 million in 2020 and 216 million by 2022. It is estimated that in 2022 Nigeria had an equal share of 108 million males and females. The population growth rate of 3.01% in 2007 constantly declined to reach 2.5% in 2022 and is forecasted to follow the same trend in the future. Nigeria's population profile is predominantly youthful. It is anticipated that the effective implementation of Agenda 2050 will boost longevity and life expectancy.

Nigeria is characterized by three distinct climatic zones, a tropical monsoon climate in the south, a tropical savannah climate for most of the central regions, and a Sahelian hot and semi-arid climate in the north of the country. This results in a declining rainfall from south to north. Mean annual rainfall is 1,165 mm. The southern regions experience strong precipitation events during the rainy season from March to October with annual rainfall amounts usually exceeding 2,000 mm. The annual rainfall can reach 4,000 mm and even more in the Niger Delta. The central regions are characterised by a well-defined single rainy season, from April to September, and a dry season from December to March. Northern areas have a high annual rainfall variability, which results in floods and droughts.

The most significant temperature difference in Nigeria is between the coastal areas and its interior as well as between the plateau and the lowlands. Mean annual temperature for Nigeria is 26.9°C, with average monthly temperatures ranging between 24°C (December, January) and 30°C (April). On the plateau, the mean annual temperature varies between 21°C and 27°C whereas in the interior lowlands, temperatures are generally over 27°C.

The 2021 Notre Dame Global Adaptation Index ranks Nigeria as the 53rd most-vulnerable country and the 6th least-ready country in the world to adapt to climate change. The impact of climate change on Nigeria's environmental and socioeconomic systems is exacerbating the country's fragility risks. Extreme weather patterns, namely more powerful longer dry seasons and shorter, more intense rainy seasons are aggravating challenges confronting local communities. Extensive cultivation and overgrazing have been compounded by desertification, rendering large expanses of land in northern Nigeria unproductive. Unpredictable and higher-intensity rainfall in southern Nigeria is resulting in crop losses and the displacement of communities. Climate change is expected to affect the economy of Nigeria due to loss and damage (to infrastructure, farmland, real estate, etc.) from extreme weather events that have been on a steady increase over the last decade. Adaptation measures are therefore crucial to shield the economy from further climatic vagaries.

The Gross Domestic Product (GDP) in Nigeria was worth 362.81 billion US dollars in 2023, according to official data from the World Bank. GDP per capita was 1,621.12 USD in the same year. Economic growth in Nigeria slowed from 3.3% in 2022 to 2.9% in 2023 due to high inflation and slow growth in the global economy. Growth was driven by services and agriculture on the supply side and by consumption and investment on the demand side. Inflation rose from 18.8% in 2022 to 24.5% in 2023, due to rising fuel costs and a depreciating national currency. In 2020, it was estimated that agriculture contributed 21.96% of GDP, industry 23.65% and services 54.39%. Some of the natural resources of Nigeria are Petroleum, natural gas, tin, columbite, iron ore, coal, limestone, lead and zinc. Major agricultural products include cocoa, palm oil, yam, cassava, sorghum, millet, corn, rice, livestock, groundnuts and cotton. Textiles, cement, food products, footwear, metal products, lumber, beer and detergents are important industries.

(b) Institutional arrangements and governance

The Climate Change Act of 2021 provides for the necessary institutional arrangements to track progress made in implementing and achieving its NDC under Article 7, including those used for tracking internationally transferred mitigation outcomes. It also establishes the NCCC. Key functions of the NCCC are to “formulate policies and programmes on climate change to serve as the basis for climate change planning, research, monitoring, and development” and “formulate guidelines for determining vulnerability to climate change impact and adaptation assessment and facilitate the provision of technical assistance for their implementation and monitoring” among others. Members of the Council comprise climate-related Federal Ministries, the states and representatives from umbrella organizations for the civil society (women, youths and the disabled) and the private sector as well as the financial sector with the Director General of the Council serving as the Secretary. However, NCCC is not yet fully operational, the process still ongoing. However, the Secretariat (NCCCS) has been operationalised.

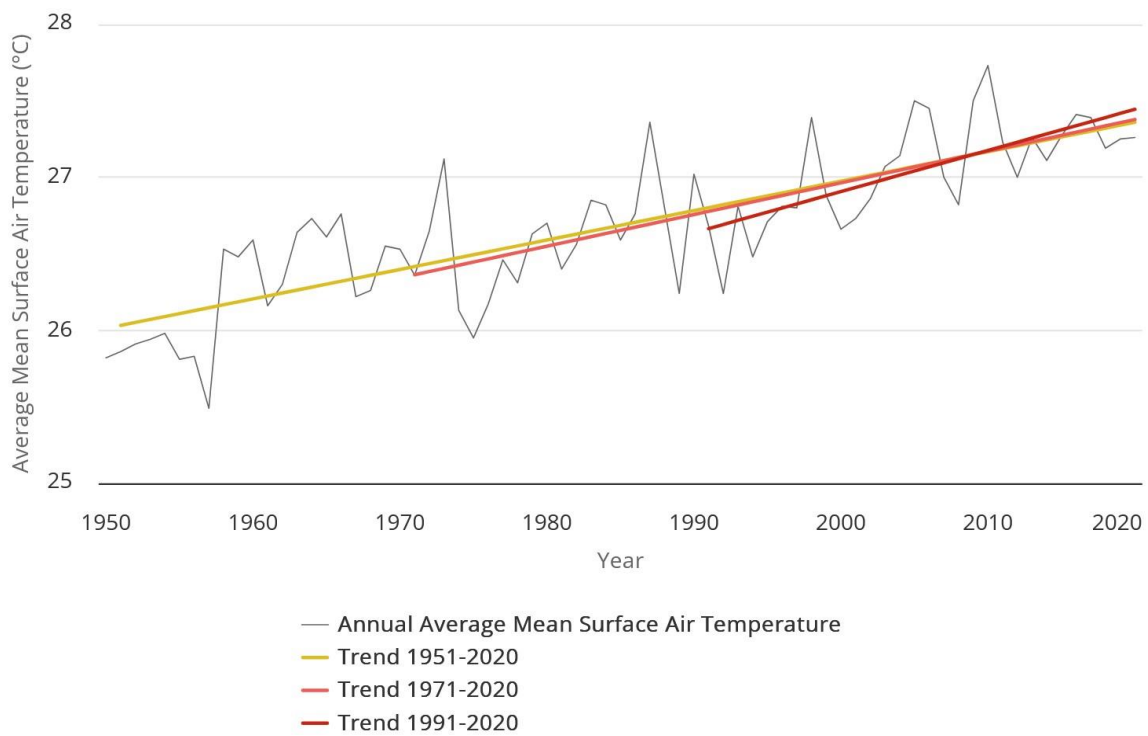
(c) Legal and policy frameworks and regulations.

The same Climate Change Act of 2021 provides the legal framework for all climate change activities through the NCCC. The institutional arrangements are described in the previous paragraph and the Council caters for administrative and procedural arrangements for domestic implementation, monitoring, reporting, archiving of information and stakeholder engagement related to the implementation and achievement of its NDC under Article 7. The NCCC has already engaged all MDAs and States in an extensive network for collection of information on adaptation actions and measures which will be spearheaded by NCCC also.

3.2. B. Impacts, risks and vulnerabilities, as appropriate

(a) Current and projected climate trends and hazards

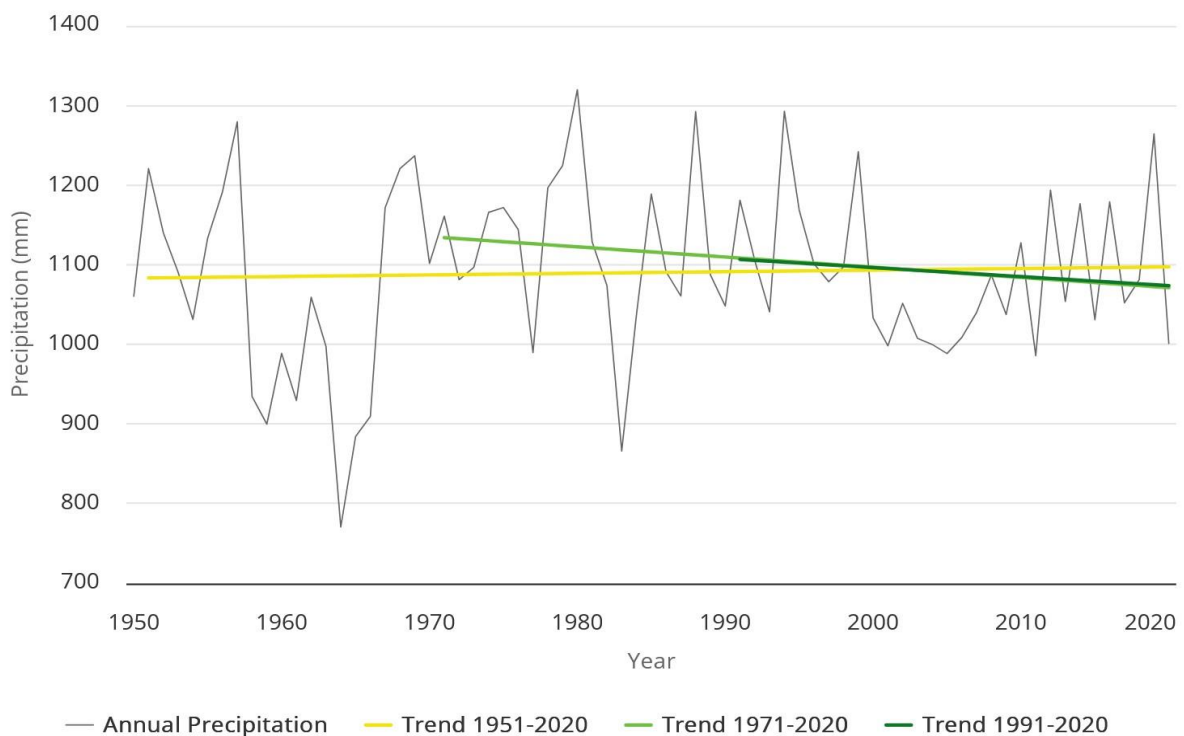
Observed, historical data produced by the [Climatic Research Unit \(CRU\)](#) of the University of East Anglia for Nigeria is presented at a 0.5° x 0.5° (50km x 50km) resolution in Figure 3.1 for surface air temperature. It is observed that irrespective of the period, namely 1951 to 2020, 1971 to 2020 and 1991 to 2020, there is an increase in annual average mean surface air temperature. It is also clear that the rate of warming is highest for the period 1991 to 2020 compared to the two other periods, which corresponds to the numerous hottest global temperatures.



Source: WB group. Climate Change Knowledge Portal
 (<https://climateknowledgeportal.worldbank.org/country/nigeria/climatedata-historical>)

Figure 3.1 Observed annual average mean surface air temperature for 1951 to 2020

Regarding rainfall, the trends (Figure 3.2) are divergent when comparing the three periods. While the longer-term period 1951 to 2020 shows a slight increase in precipitation, the graphs for the periods 1971 to 2020 and 1991 to 2020 are very similar and overlap.

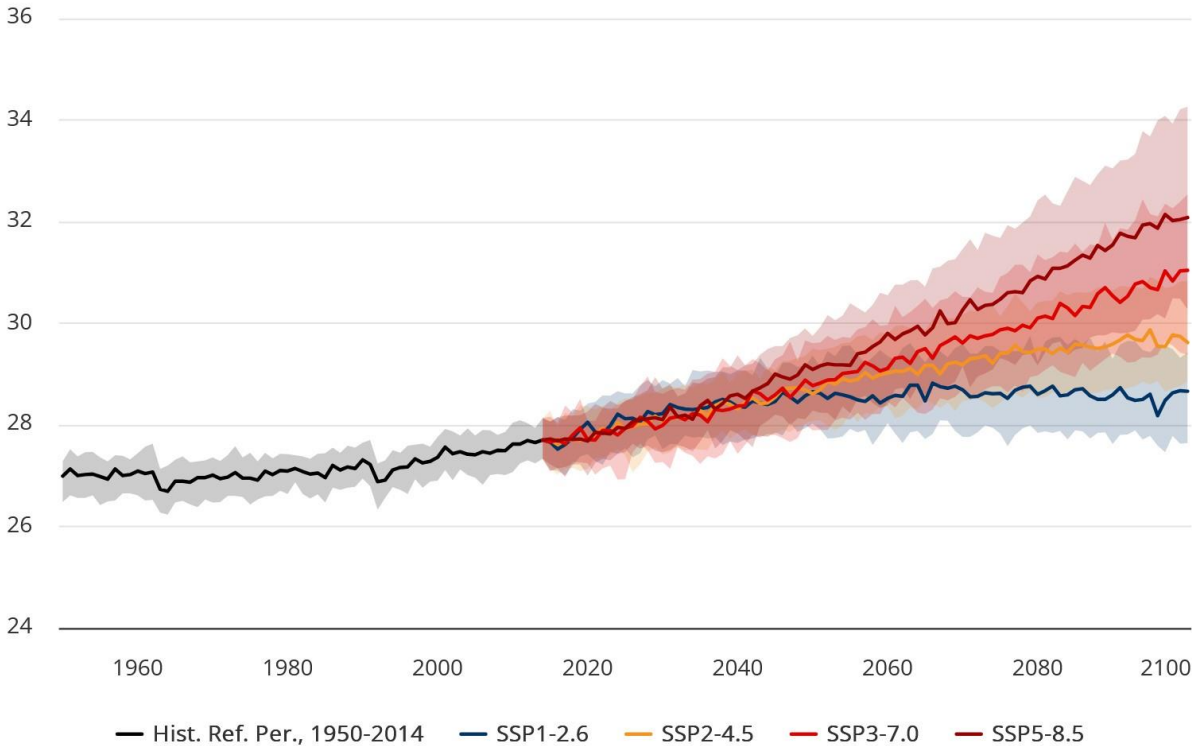


Source: WB group. Climate Change Knowledge Portal
 (<https://climateknowledgeportal.worldbank.org/country/nigeria/climate-data-historical>)

Figure 3.2 Observed annual precipitation for 1951 to 2020

Climate projection data is modelled data from the global climate model compilations of the Coupled

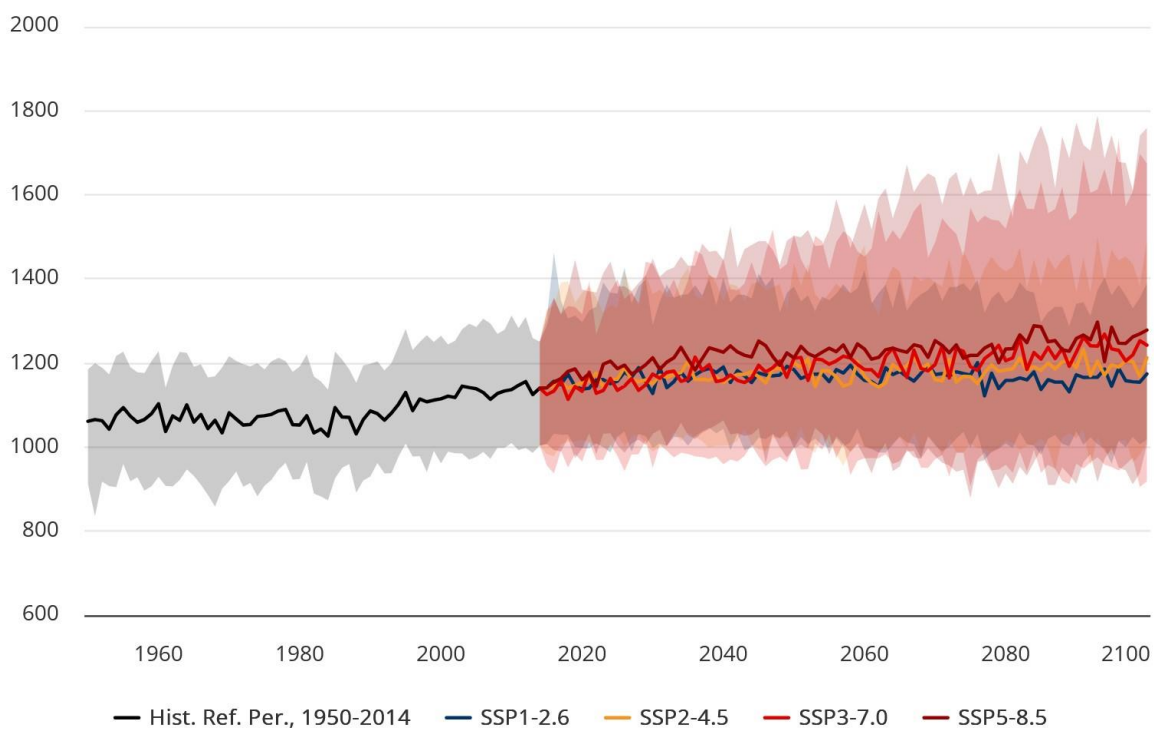
Model Inter-comparison Projects (CMIPs), overseen by the World Climate Research Program. Data presented is CMIP6, derived from the Sixth phase of the CMIPs. The CMIPs form the data foundation of the IPCC Assessment Reports. CMIP6 supports the IPCC's Sixth Assessment Report. Data is presented at a 0.25° x 0.25° (25km x 25km) resolution. All four scenarios (Figure 3.3) exhibit a more or less same rate of increase until the 1940's after which they start diverging with the highest rate and eventual increase in the year 2100 corresponding with the model associated with the highest increase in GHG atmospheric level. The rate of warming is directly related with the atmospheric GHG level.



Source: WB group. Climate Change Knowledge Portal
<https://climateknowledgeportal.worldbank.org/country/nigeria/climate-data-projections>

Figure 3.3 Projected average mean surface air temperature anomaly (Reference period 1995-2014, SSP5-8.5. multi-model ensemble

Rainfall projections follow the historical trend for the period 1950 to 2020, namely a slight increase in the annual amounts. As for air temperature, there is an indication of a higher increase under the scenario with the highest level of GHGs. The projected rainfall for the 4 scenarios is given in Figure 3.4.

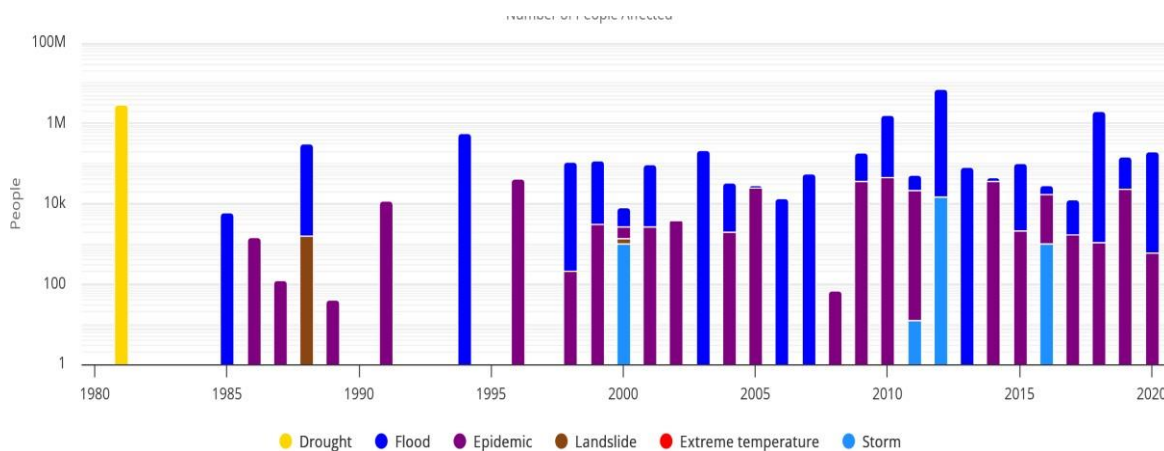


Source: WB group. Climate Change Knowledge Portal
<https://climateknowledgeportal.worldbank.org/country/nigeria/climate-data-projections>

Figure 3.4 Projected rainfall (Reference period 1995-2014, Multi-model ensemble)

(b) Observed and potential impacts of climate change

Figure 3.5 provides a summary of key natural hazards and their effect on the life of people. Two hazards are very prominent in the recent years compared to the 1980s. There has been a high recurrence of floods and epidemics that can be directly associated with the more intense heavy rainfall episodes and the warmer temperatures respectively, confirming the impacts of global warming. It can also be seen that Nigeria has also been recording storms since the year 2000 when there was none before. These hazards have been affecting more and more people over time. It is also observed that at least one hazard has occurred annually since 1998.



Source: WB group. Climate Change Knowledge Portal
<https://climateknowledgeportal.worldbank.org/country/nigeria/vulnerability>

Figure 3.5 Key natural hazards and the number of affected people for 1980-2020

(c) Approaches, methodologies and tools

The Adaptation Communication (ADCOM) 2021 report was prepared by collecting and analysing data from multiple sources. These included a desk-based review of literature, consultations and in-depth engagement with stakeholders, key informant interviews as well as surveys. Latest research on climate change in the country was used as a foundation for reporting current vulnerabilities and impacts to climatic changes in the country.

The desk study involved a review of international agreements, conventions and policies on climate action (specifically adaptation actions). Some of these include the Paris Agreement, the Paris Rule-book, the Cancun Adaptation Framework, the 2030 Agenda on Sustainable Development, The Sendai Framework for Disaster Risk Reduction, the Convention on Biological Diversity, the Convention to Combat Desertification among others. At the national level, extensive reviews of current policies and communications prepared by the country's designated authority on climate change was conducted. Some of these include: The third national communication of Nigeria to the UNFCCC (2020), National Adaptation Plan Framework (2020), Nationally Determined Contribution (2021), First Biennial Update Report (2018), Nigeria Climate Change Policy and Response Strategies (2020), National Policy on the Environment (2020), Green Climate Fund Readiness for Adaptation in Nigeria, and similar documents and policies produced by relevant MDAs that relates to climate change.

Rigorous consultations and stakeholder engagements, with over 50 MDAs, were also carried out in a series of workshops as part of the ADCOM preparation process. These included an inception workshop to solicit the support and contributions of stakeholders in the ADCOM preparation, clarify their roles in the National Adaptation Process (NAP) implementation and validate the approach and methodology to be used in developing the ADCOM report. Based on the guidance and views expressed by the participants during the inception workshop, a consultation workshop to deepen the engagement with critical stakeholders towards having an inclusive ADCOM for Nigeria, create a platform for government agencies and stakeholders involved in the NAP process to exchange ideas, and discuss existing adaptation efforts in the country as an input to the development of the ADCOM, to enhance cooperation and inter-agency collaboration among stakeholders in the implementation of adaptation action. Participants provided information on their mandates, adaptation actions, achievements, constraints and support needed.

3.3. C. Adaptation priorities and barriers

(a) Domestic priorities and progress towards those priorities

Nigeria has developed policies, strategies and action plans to achieve its adaptation priorities. Adaptation issues are addressed using a sectoral approach. The priority key sectors are Agriculture (Crops and Livestock), Freshwater Resources, Coastal Water Resources and Fisheries, Forests, Biodiversity, Health and Sanitation, Human Settlements and Housing, Energy, Transportation and Communications, Industry and Commerce, Disaster, Migration and Security and Livelihoods as per the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN). There are also cross-cutting issues such as gender, finance and disaster risk reduction that must be attended to for building resilience.

3.4. D. Adaptation strategies, policies, plans, goals and actions to integrate adaptation into national policies and strategies

(a) Implementation of adaptation actions

The objectives of Nigeria's ADCOM are to provide information on the country's national circumstances concerning adaptation by communicating its plans and priorities; highlighting its implementation, support needs and showcasing its achievements domestically and internationally (by providing input to the global stocktake). The report also serves as an instrument for communicating Nigeria's adaptation efforts in

sectors, across scales and by various actors. As a stand-alone document, the ADCOM streamlines the country's adaptation strategies, policies and actions reported in previous communications into a one coherent, implementable adaptation document. The ADCOM have identified existing gaps and challenges preventing the achievement of better adaptation outcomes and recommends how these gaps will be filled and challenges overcome.

In preparing Nigeria's ADCOM, a participatory and inclusive approach was used to ensure comprehensive coverage of the achievements, challenges and support needed in sectors. This approach also ensures ownership of the report by all parties. The process involves rigorous stakeholder engagement. Following similar approach used in the preparation of the country's National Adaptation Plan Framework, Nationally Determined Contribution and National Climate Change Policy and Response Strategies, the ADCOM preparation consulted all the relevant stakeholders involved in delivering the climate change targets. The ADCOM preparation process was also gender responsive. Recognizing that women tend to bear the greater burden when it comes to the impacts of climate change, efforts were made to integrate gender considerations in a structured and systematic manner. The ADCOM preparation process also prioritized reporting of the impact, vulnerabilities, and environmental situations of the rural areas. Indigenous and grassroots-based adaptation actions were identified, analysed, and reported. The environmental sensitivity of adaptation action was given attention to highlight the unintended environmental costs of implementing adaptation actions by the different stakeholders. The provisions (programmes, plans, projects, and resources) made available to the vulnerable groups (physically challenged, the children, and the aged in the society) in helping them adapt to climatic changes in the country are also considered in the report. The process also considered the exceptional roles of the civil society, the private sector, academia and donor agencies in achieving adaptation outcomes.

(b) Adaptation goals, actions, objectives, undertakings, efforts, plans (e.g. national adaptation plans and subnational plans), strategies, policies, priorities (e.g. priority sectors, priority regions or integrated plans for coastal management, water and agriculture), programmes and efforts to build resilience;

Some of the goals, actions, objectives, undertakings, efforts, plans (e.g. national adaptation plans and subnational plans), strategies, policies, priorities (e.g. priority sectors, priority regions or integrated plans for coastal management, water and agriculture), programmes and efforts to build resilience include:

1. Agriculture (crops and livestock)

- Adopt improved agricultural systems for both crops and livestock (for example, diversify livestock and improve range management).
- Increase access to drought resistant crops and livestock feeds; adopt better management practices.
- Provide early warning/meteorological forecasts and related information.

2. Freshwater Resources, Coastal Water Resources and Fisheries

- Initiate a national programme for integrated water resource management at the watershed level.
- Intensify programmes to survey water quality and quantity for both ground and surface water.

3. Forests and Biodiversity

- Strengthen the implementation of the national Community-Based Forest Resources Management Programme.
- Support review and implementation of the National Forest Policy.

4. Health and Sanitation

- Undertake research to better understand the health impacts of climate change in Nigeria.

- Strengthen disease prevention and treatment for those diseases expected to increase as a result of climate change.
- Establish early warning and health surveillance programmes.
- Strengthen the present adaptation strategy for the health sector including aligning it with the National Adaptation Plan (NAP) Framework.

5. Energy

- Strengthen existing energy infrastructure, in part through early efforts to identify and implement all possible 'no regrets' actions.
- Develop and diversify secure energy backup systems to ensure both civil society and security forces have access to emergency energy supply.

6. Transportation and Communications

- Include increased protective margins in construction and placement of transportation and communications infrastructure Undertake risk assessment and risk reduction measures to increase the resilience of the transportation and communication sectors.
- Make provision for diverse transportation options such as pedestrian, bicycle, and transit routes.

Adaptation challenges and gaps, and barriers to adaptation.

Nigeria is currently dealing with a wide range of environmental challenges, some of which are exacerbated by climate change, and negatively affects every sector, particularly agriculture, water resources and infrastructure. Other challenges facing the country are deforestation and de-vegetation, causing biodiversity loss and land degradation; floods, erosion, drought and desertification which are degrading the environment especially in the semi-arid areas of the country resulting in conflicts; environmental pollution — namely air, water, land and noise; waste generation; mineral exploration and exploitation and the accompanying environmental degradation as well as limited access to safe water and poor sanitation. Climate change impacts in Nigeria is expected to have significant consequences on livelihoods and the broader economy. Rising temperatures, extreme heat, and changing precipitation patterns will induce new challenges and exacerbate existing ones.

Despite its efforts to mainstream climate change adaptation into its developmental agenda and policies, Nigeria is still struggling with challenges in achieving the desired results. Some of these challenges include funding, capacity building and poor technical skills. Other challenges are lack of synergy, coordination and collaboration by stakeholders, lack of target setting, monitoring and evaluation have giving room to overlaps, duplication of efforts and greater cost burden. Poor communication is another problem reducing the effectiveness of adaptation efforts in the country. The visible exclusion of the sub-national governments (states and local governments), CSOs, indigenous people, women, youths and the people living with disabilities constitute a major barrier to effective and inclusive NAP implementation in the country.

In addition, and as mentioned in the country's Green Climate Fund (GCF) readiness report, other challenges include:

- limited capacity to implement the NAP framework, analyse climate information and prioritise adaptation options.
- lack of capacity of national stakeholders to interpret climate risk assessments.
- lack of comprehensive climate risk assessments for priority sectors and vulnerable states.
- limited capacity of policy- and decision-makers to mainstream climate change into national and sectoral plans and policies.

- limited funding mechanisms for adequately planning and implementing adaptation actions.
- limited monitoring, reviewing or reporting on adaptation planning at the federal, state and local levels.

(c) How best available science, gender perspectives and indigenous, traditional and local knowledge are integrated into adaptation

Refer to section 3.3 above.

(d) Development priorities related to climate change adaptation and impacts

Refer to section 3.3 above.

(e) Any adaptation actions and/or economic diversification plans leading to mitigation co-benefits

- Improve the use of smart agriculture and enhance agricultural produce.
- Enhance sustainable forest management.
- Integrated and sustained waste management services.

(f) Efforts to integrate climate change into development efforts, plans, policies and programming, including related capacity-building activities

With view of integrating climate change into national development, Nigeria has produced a consolidated document, Agenda 2050 (<https://nationalplanning.gov.ng/wp-content/uploads/2023/05/Nigeria-Agenda-2050-Report-Corrected.pdf>) that portrays the country's long-term vision for all socio-economic sectors. Nigeria's Agenda 2050 aims to ensure enhanced economic growth that is inclusive and sustainable, over the Agenda period and beyond, to generate employment and reduce poverty.

(g) Nature-based solutions to climate change adaptation

A new analysis was carried out when updating the NDC on the potential role of nature-based solutions. These are actions that protect biodiversity, sustainably manage and/or restore ecosystems, while simultaneously contributing to the achievement of multiple sustainable development goals, including national goals for climate, food security, water security, disaster risk reduction and livelihoods. naturebased solutions can play a significant contribution in delivering on both the mitigation and adaptation objectives of Nigeria, further strengthening the ambition already being shown. In 2020, the establishment of 10 additional national parks was approved, bringing the number of federally protected areas to 17.

The analysis concluded that Nigeria has an estimated mitigation potential of 115.2 Mt CO₂e/year through selected nature-based solutions based on global data sets. The top three NBSs for climate mitigation are agroforestry, improved forest management and forest restoration which has a combined mitigation potential of 89 Mt CO₂e/year. This analysis does not include the potential contributions of regenerative agriculture which can be enormous. Furthermore, implementing NBS in the country can bolster water security by increasing the lifespan and efficiency of water supplies and enhancing the storage and recharge of groundwater. The NBS relevant to Nigeria can enhance food security by increasing the availability of nutritious food to address Nigeria's high rates of child malnutrition, currently costing up to 11% of GDP, increasing resilience, and reducing the environmental cost of agricultural production. Nigeria's natural disaster risks, particularly its high risk of coastal flooding, are addressed by nature-based solutions relating to mangrove restoration and management, which act as a buffer for coastal communities.

(h) Stakeholder involvement, including subnational, community-level and private sector plans, priorities, actions and programmes

Provided under section 3.5 E below.

3.5. E. Progress on implementation of adaptation

(a) Implementation of the actions identified in chapter IV.D above

Refer to section 3.4 c below.

(b) Steps taken to formulate, implement, publish and update national and regional programmes, strategies and measures, policy frameworks

Refer to section 3.3 (f) above.

(c) Implementation of adaptation actions identified in current and past adaptation communications, including efforts towards meeting adaptation needs

Ministries, Departments and Agencies

Although the greatest achievement of MDAs in adaptation is in policy formulation, a number of project level adaptation actions have been achieved through the implementation of these policies. Similarly, other stakeholders such as the CSOs/NGOs, the Academia, and the Private Sector have been actively involved in conceiving, planning, financing and implementing adaptation actions with different degrees of successes. Some of the broad adaptation actions and measures already implemented and ongoing in the country identified through the ADCOM preparation process are summarized in Table 3.1.

(<https://unfccc.int/sites/default/files/resource/Nigeria%20Final%20ADCOM%20Report.pdf>).

However, a more detailed account of these activities will require a dedicated study. The table also indicates the actors implementing these actions. Some of these actions are mitigation actions but are at the same time fostering adaptation. Information on these actions is currently being sourced and collected for presentation in the combined BTR2/NC4.

Table 3.1 Adaptation projects and stakeholders concerned

Ministries Departments and Agencies
Environment

- The Great Green Wall Project
- Action Against Desertification Project
- Sovereign Green Bond which provides much needed financing for several adaptation projects
- Coastal zone management: Shoreline protection projects
- Adaptive water harvesting programme.
- Flood Early Warning Systems (FEWS)
- Afforestation projects
- Creation of green jobs: (Sand) dune fixation, Establishment of trees • nurseries
- Training and capacity building on climate change adaptation
- Ecosystem Restoration Project
- Advocacy campaign
- Provision of funding and support for adaptation actions.
- Climate resilience building activities
- Managing atmospheric pollution
- Flood and erosion control: Construction of Climate-smart Drainage systems, land/gully reclamation across all the States of the Federation
- Space Programme and Climate Resilience
- Solid Waste Management projects
- Hospital Waste Intervention Scheme
- Material Recovery facilities
- Integrated Waste Management Facilities
- Briquetting Plants
- Scrap Metal Recycling Plants
- National Plastic Recycling programme

- Min. of Environment.
- Min. of Industry, Trade and Investment
- National Agency for the Great Green Wall
- National Emergency Management Agency
- National Oil Spill Detection and Response Agency (NOSDRA)
- National Orientation Agency (NOA)
- Nigerian Conservation Foundation (NCF)
- Bank industry
- NIMASA
- NARSDA

Agriculture

- Establishment of Automatic Weather Stations
- Run-off Water Harvesting Structures
- Climate Change Adaptation and Agric. Business Support Programme
- CSA related programme in livestock, crop and fisheries
- CSA related NEWMAP activities
- Capacity building
- Forecasting on drought and desertification
- Sustainable and innovative farming and forestry practices

- Min. of Agriculture
- Nigerian Meteorological Agency
- Gender and Environmental Risk Reduction Initiative (GERI)
- Women Environment Programme (WEP)

- Promotion of Organic Farming
 - Provision of support and funding to small-scale farmers •
- Building resilient livelihood

- OXFAM
- UK Embassy/UKAID DFID)/British Council

Water

- Meteorological services in operational hydrology and water resource activities •
- Capacity building on sustainable water management
- Advocacy campaign
- Flood early warning and vulnerability assessment
- Seasonal Rainfall Prediction

- Min. of water Resources
- Nigerian Meteorological Agency
- NOA
- Nigerian Hydrological Service Agency

Health

- Training of staff on climate change adaptation
- Waste reduction and generation
- Use of clean cook stove

- Ministry of Health

Energy and Transport

- Policy on renewable energy in the manufacturing sector
 - Low carbon technology/carbon capture technology
 - Carbon disclosure/energy transition project
 - Investment in solar power
 - Energizing Education Programme (EEP)
- Ministry of Industry, Trade and Investment
 - NOSDRA
 - Rural Electrification Agency
 - NIMASA

Human settlement and tourism, Works and Housing

- Urban resilience and sustainability
 - Plans and policy for physical and urban development
 - Urban renewal and slum upgrading projects
- Min. of Works & Housing

Subnational (State) governments

- Development and execution of land restoration projects including afforestation
 - Flood and erosion control projects
 - Promotion of irrigation farming (especially drip irrigation)
 - Promotion of the adoption of renewable energy such as solar and wind
 - Advocacy and sensitization on climate change mitigation and adaptation
 - Review of environmental laws
 - Agricultural diversification initiatives to reduce shocks and stresses from climate change
 - Provision of energy efficient stoves
 - Methane harvest and biogas production
 - Establishment of drainage systems to reduce people vulnerability to flooding
- State Government
 - Ebonyi, Kaduna, Gombe
 - Bauchi, Delta, Lagos

Civil Society Organizations (CSOs) and Non-Governmental Organizations (NGOs)

- Development and launch of National Action Plan on Gender and Climate Change
 - Promotion of Organic Farming
 - Establishment of Mini ranches
 - Training of local women in sustainable farming and agricultural practices
 - Training on coping mechanisms to climate change induced shocks and stresses
 - Training on raising of tree seedlings for tree planting activities
 - Training on animal feed production
 - Training on compost production
 - Training on production of fuel-efficient stoves
 - Skills acquisition training to diversify livelihood of rural communities (e.g. production of soaps, beads etc)
 - Public awareness campaigns on the impacts of climate change and community adaptation
 - actions across the country
 - Research and policy advocacy
 - Production of sensitization materials on climate change
 - Establishment and support of schools and environmental conservation clubs
- Women Environment Programme (WEP)
 - The Nigerian Environmental Study/Action Team (NEST)
 - Nigerian Conservation Foundation
 - (NCF)
 - African Climate Research Center
 - (ACCREC)
 - Climate Change Network of Nigeria (CCN)
 - Climate Action Network (CAN)
 - African Centre for Climate Actions and Rural Development (ACCARD)
 - Initiative

- Research on regional climate downscaling activities

Academic Institutions - Research and Innovations Adaptations

-
- Climate change, agriculture and environment interactions
 - Fast Tracking Climate Change Mitigation Strategies.
 - Desert research, monitoring and control project
 - Deep Decarbonization Pathways Project
 - Sustainable Development of Farm Agro-forestry and Fuel
 - Wood Conservation in North West Katsina sponsored by the European Union
 - Establishment of Tree Nurseries
 - Training on Non-Wood Tree Product processing techniques
 - Efficient cook stove/meat roaster and Bread Oven.
 - Development of framework for controlled harvest of fuel wood
 - Training on climate change adaptation
 - Research on energy and carbon sequestration
 - Research on green technology and clean energy
 - Conference, symposiums and workshops on climate change adaptation
 - Research on Arid Zone Ecology, Agroforestry, Hydrology, and Geomorphology
 - Research on carbon sequestration soils
 - Research on sustainable fuelwood and charcoal production and utilization
 - Research on climate change adaptation strategies in the policies of different countries of the world
 - Research on development of strategies of combating climate change by fostering adaptation in Nigeria
 - Research and Project on Building Nigeria's Response to Climate Change
 - Symposium on Climate Change Adaptation in Africa
 - Research Project on Mainstreaming Gender Concerns into Climate Change Adaptation
 - Research on Adapting Agricultural Practices to Climate Change
 - Development of localized 'clean energy' models for off-grid applications in rural areas
- University of Nigeria Nsukka
 - University of Lagos
 - Obafemi Awolowo University.
 - University of Ibadan
 - University of Port Harcourt
 - Nigerian Environmental Study action Team (NEST).
 - ABU Zaria
 - Yobe State University
 - Alex Ekwueme Federal University
 - Umaru Musa Yaraduwa University
 - Bayero University Kano.
 - University of Maiduguri
 - Abubakar Tafawa Balewa University
 - Modibbo Adama University
 - Nasarawa State University
-

The Private Sector

A study conducted across private companies in Nigeria shows that almost half of the manufacturing companies have adopted climate change adaptation strategies, and nearly half of these companies have implemented the formal strategy. Most of the companies see climate change as disturbing their businesses, and also 97% of the subjects perceive that climate change harms health. In addition, 46% of companies adopted proactive strategies, while 65% employed a reactive approach. About 52% of companies have only recently (less than five years) seen the need to adapt to climate change. Only a few of the companies implemented climate change strategies for the past 16 years and above. This shows that Nigerian companies have only recently begun to understand and integrate the climate change effect in their company strategy.

(d) Implementation of adaptation actions identified in the adaptation component of NDCs

The adaptation component of the NDC covered only 2 key issues, namely the water sector in association with lake Chad and nature-based solutions. The NDC described the process for preparing its NAP within the framework of the Adaptation Communication (<https://unfccc.int/sites/default/files/resource/Nigeria%20Final%20ADCOM%20Report.pdf>) that has been prepared and submitted to the UNFCCC.

(e) Coordination activities and changes in regulations, policies and planning.

Refer to section C above.

INFORMATION ON IMPLEMENTATION OF SUPPORTED ADAPTATION ACTIONS, AND THE EFFECTIVENESS OF ALREADY IMPLEMENTED ADAPTATION MEASURES

Key initiatives that have been supported by bilateral and multilateral partners are provided in Table 3.2.

Table 3.2 Supported adaptation actions

International Donors and Development Agencies	
<ul style="list-style-type: none"> • Funding for policy formulation and reviews, preparation of action plans and national • Communications (including Nigeria' Adaptation Plans), e.g., ADCOM preparation funded by UK Government in collaboration with NAP Global Network/IISD • Climate Smart Agriculture • Providing adaptation strategies through various agricultural initiatives, insurance and other financial tools, infrastructure, skills and knowledge, information and awareness, and building institution capacity 	<ul style="list-style-type: none"> • UK Embassy/UKAID (DFID)/British Council • USAID • French embassy • World Bank • NAP Global Network/International Institute for Sustainable Development • UN Agencies (UNDP/UNEP/UNESCO)

3.6. F. Monitoring and evaluation of adaptation actions and processes

ESTABLISHMENT / USE OF DOMESTIC SYSTEMS TO MONITOR AND EVALUATE THE IMPLEMENTATION OF ADAPTATION ACTIONS

There is no formalized or systematic approach to assessing, monitoring, reviewing or reporting of ongoing adaptation efforts at all government levels (Federal, state or Local) in Nigeria (Federal Ministry of Environment, 2014; Green Climate Fund, 2017). However, conscious of the importance to be transparent and to report on adaptation in the BTR, Nigeria has started the process for setting up and operationalizing a monitoring and evaluation framework. As per the Climate Change Act of 2021, this responsibility incurs to the NCCC that has already set up a directorate to handle this issue. This Directorate will liaise with stakeholders at the national, subnational and regional levels to collect data for reporting in the BTR. The monitoring and evaluation framework is presently being tested for preparing the chapter of the BTR1. Observations to date are that it is still in its infancy and will need strengthening. Shortcomings of the monitoring and evaluation framework are a lack of capacity and funding for collecting the required information and insufficient capacity of stakeholders. It is planned to address these two key issues during the preparation of the combined BTR2/NC4.

INFORMATION RELATED TO MONITORING AND EVALUATION

Indicators for assessing increased resilience and reduced impacts in an overall manner are not yet clearly defined. Potential indicators are crop production levels at the national, subnational and regional levels, number of persons affected by extreme weather events such as droughts and floods, number of farmers adopting improved seeds, increase in area under irrigation, improvement in water management, number of restored degraded watersheds and wetlands number of storage and processing facilities provided to smallholder farmers groups, increase in area under agroforestry, area afforested/reforested, area restored under mangroves, reduction in the area affected by coastal erosion, degree of resilience of infrastructure, number of persons hospitalized due to climate change-related health diseases and number of communities capacitated to adapt to climate change impacts.

On the other hand, indicators have been developed for individual measures and ongoing projects. Most of these indicators are the same as listed in the previous paragraph but applied specifically to the project, action or measure.

It is difficult to evaluate the effectiveness of adaptation at this stage due to the absence of a comprehensive monitoring and evaluation framework. This will improve as the framework is further developed and operationalized within the combined BTR2/NC4 project.

Planning and implementation of adaptation are done in a transparent manner by the MDAs, states and civil society under the aegis of the Federal Ministry and the NCCC.

Support programmes are designed in accordance with climate change plans and strategies, namely Agenda 2050 that supersedes all previous ones. Hence, they are framed to respond to identified vulnerabilities of the sectoral plans and identified risks and hazards. More details are available in the ADCOM submitted to the UNFCCC which describes in more detail the adaptation framework.

Adaptation will first and foremost be geared to deliver in line with the Sustainable Development Goals to preserve the environment, including all natural ecosystems. Some key development goals which are privileged are food security, water access and availability, health, infrastructure and livelihoods while ensuring inclusivity and gender equity.

INFORMATION RELATED TO THE EFFECTIVENESS AND SUSTAINABILITY OF ADAPTATION ACTIONS

(a) Ownership, stakeholder engagement, alignment of adaptation actions with national and subnational policies, and replicability

Adaptation actions are fully inclusive and target all segments of the population, especially the more vulnerable ones such as women, youth and indigenous people. Actions are implemented at the national, subnational and regional levels according to declared and agreed policies more fully described in the ADCOM. Actions are country driven and ownership is wide with all stakeholders (MDAs, States, local governments and communities) concerned involved. Adaptation needs closely reflects the vulnerabilities, risk and hazards in numerous sites and regions such that actions undertaken can be replicated from one site to multiple others. However, it must be stated that there is still room for improvement on these issues.

(b) Results of adaptation actions and the sustainability of those results

Key ongoing adaptation actions that are sustainable are climate smart agriculture, adoption of improved seeds, protection of natural ecosystems, restoration of natural ecosystems, improved water management and agroforestry.

3.7. G. Information related to averting, minimizing and addressing loss and damage associated with climate change impacts

Observed and potential climate change impacts, including those related to extreme weather events and slow onset events based on data from the EM-Dat database, show the country has endured various natural hazards, including droughts, floods, landslides, epidemics, and storms are provided in Table 3.3.

Table 3.3 Natural disasters and their impacts in Nigeria between 1990 and 2020

Natural hazard	Sub type	Events count	Total deaths	Total affected	Total damage ('000 USD)
Drought	Drought	1	0	3,000,000	71,103
Epidemic	Bacterial Disease	27	17,278	163,378	0
	Viral Disease	24	8,233	182,474	0
Extreme Temperature	Cold Wave	1	18	Data not available	0
	Heat Wave	1	60	Data not available	0
Flood	Flash Flood	6	330	109,165	7,805
	Riverine Flood	28	1,110	10,275,064	636,717
Insect	Grasshopper	1	Data not available	Data not available	0
	Locust	1	Data not available	Data not available	0
Storm	Convective Storm	3	54	16,012	1,000
Landslide	Landslide	3	32	1,800	0

* Reproduced from CLIMATE RISK COUNTRY PROFILE: NIGERIA (WB)

Activities related to averting, minimizing and addressing loss and damage associated with the adverse effects of climate change are reliable and well distributed systematic observations over the whole territory of the country, operational well developed early warning systems, good awareness of the population, access to information and communication systems, preparedness of the population and well-structured support systems. However, these activities are not yet fully operational due to lack of resources, namely finance, equipment, capacity and the latest technologies.

Institutional arrangements fall under the purview of the NCCC at the topmost level with the MDAs, states and local governments operating within this framework. But due to the barriers enumerated above, it remains difficult if not almost impossible to really avert, minimize and address loss and damage in an efficient and timely manner.

3.8. H. Cooperation, good practices, experience and lessons learned

Nigeria has deployed significant efforts to share information, good practices, experience and lessons learned on adaptation at the international, national, subnational and regional levels. This is done through the reports prepared and submitted to the UNFCCC and under other multilateral environmental agreements. At the national, subnational and regional levels this is achieved through the publication of reports and studies which are shared directly with stakeholders using different digital means and also accessing them from the websites of MDAs among others. The policies have been recently reviewed and updated when preparing the ADCOM and NA 2050 which has a full coverage of all socio-economic sectors and supersedes previous ones. NA2050 also caters for integration of adaptation actions into planning at different levels. Nigeria usually embarks on sustainable adaptation actions and sharing of knowledge generated from projects serve to inform stakeholders at the national level and other developing countries. Lessons learned serve to correct shortcomings and improve newly developed projects. However, due to its size and still existing barriers and other challenges such as accessibility to available information electronically, there is room for improvement that Nigeria seeks to overcome in the future.

Nigeria is a nation investing in research and systematic observation on various aspects of the climate. However, due to its size, economic challenges, financial and technological resources and in-depth capacity in some very specific areas it is difficult to cover exhaustively all the research and systematic observation needs of the country on climate. This results in a dearth of appropriate data to inform climate services and decision-making. The coverage of observation for numerous climate variables is on the low side and research while being undertaken by the universities and other institutions is not enough to generate all climate information needed for properly inform climate services and decision-making. Studies on vulnerability and adaptation have been done in the past and are ongoing but can be considered as restrictive in coverage. Monitoring and evaluation are done at different scales but are not performed within a well-developed and fully operational framework. A national platform must be designed, developed and operationalized, supported by capacity building of stakeholders, to strengthen scientific research and knowledge related to adaptation and resilience building.

4. Information on financial, technology development and transfer and capacitybuilding support needed and received under Articles 9–11 of the Paris Agreement

4.1. A. National circumstances, institutional arrangements and country-driven strategies (MPGs Para 130)

Description of the systems and processes used to identify, track and report support needed and received, including a description of the challenges and limitations

Nigeria is in the process of developing and establishing a sustainable system for tracking and reporting support needed and received. Under other initiatives such as ICAT, Nigeria reviewed the existing monitoring and evaluation systems and processes, including the one on support needed and received, to strengthen them into performing ones for collecting data required to report in the BTR. Due to the unavailability of an appropriate tool for collecting the information needed for reporting in accordance with the MPGs of Decision 18/CMA.1, the exercise was quite laborious since data on support received is dispersed with numerous institutions at the national, subnational and regional levels. Regarding support needed, including capacity building needs, there is still the need to conduct an in-depth exercise to gather this information.

The NCCC is responsible as per the Climate Change Act of 2021 which sets the operation framework the preparation of national reports to the UNFCCC, including the chapter on support needed and received. However, the NCCC is still in the operationalization phase which explains the problems encountered to collect information exhaustively for informing the preparation of the BTR1.

Current challenges and limitations are strongly linked. Key ones are:

- Development and implementation of a data collection framework under the climate change Act to guarantee an automatic annual flow of information to inform reporting.
- Officially recognized institutional agreements to secure the commitment of all concerned stakeholders.
- Declared and agreed procedures for the smooth flow of information.
- Development and full operationalization of an appropriate tool for collecting information on support.
- Insufficient time for staff of MDAs to contribute in a systematic and timely manner due to overloaded schedules.
- Lack of capacity of stakeholders in the ETF requirements for reporting on support received and needed.

Country priorities and strategies and any aspect of Nigeria's NDC under Article 4 of the Paris Agreement that need support

Nigeria has developed its Long-Term Low Emissions Development Strategy (LT-LEDS) which runs to 2060 following the commissioning of the Long-Term Vision 2050 which supersedes and updates the sectoral policies and strategies. The National Long-Term Vision 2050 states *“By 2050, Nigeria will be a country of low-carbon, climate-resilient, high-growth circular economy that reduces its current level of emission by 50%, moving towards having net-zero emissions across all sectors of its development in a genderresponsive manner.”* The LT-LEDS will address the challenges and shortfalls of the updated 2021 NDC as identified in the NDC implementation Framework. It serves as a guide for transitioning Nigeria to the Netzero target in 2060. LT-LEDS provides a response package of actionable programmes and policies that aim to accelerate the uptake of measures and technologies in and around a climate-resilient development pathway while working towards long-term quantifiable GHG emission reductions.

The country priorities under Article 4 of the Paris Agreement are:

- Phase out flaring and reduce fugitive emissions in the Oil and Gas industry
- Promoting on-grid and off-grid electricity generation using renewables

- Improve supply- and Demand-side energy efficiency in all sectors
- Reduce emissions in through modern public transportation systems and low emitting vehicles
- Adopt sustainable practices such as Smart Agriculture
- Shift from fuelwood and charcoal to cleaner fuels and renewables for cooking
- Increase removals through the REDD activities
- Adopt cleaner waste treatment processes

4.2. B. Underlying assumptions, definitions and methodologies (MPGs Para 131)

The conversion rate adopted for reporting is 1500 Nigerian Naira to one USD.

The amount of support needed based on the First NDC updated version is estimated at 177 billion USD to the 2030-time horizon.

The reporting year is 2022 for the 2030 timeframe.

Support came from multilateral and bilateral sources such as grants and concessional loans as well as technical assistance.

Information on whether support is committed, received or needed is provided in the appropriate tables at the end of this chapter.

The status of supported activities relative to whether planned, ongoing or completed is given in the appropriate tables at the end of this chapter. Nigeria has 45 planned actions for the 2030-time horizon and few ongoing as of 2022. Information on the status of the supported activity (planned, ongoing or completed) is provided in the appropriate set of tables at the end of this chapter.

Information on the channel (bilateral, regional or multilateral) is provided in the appropriate tables at the end of this chapter.

Information on the type of support (mitigation, adaptation or cross-cutting) is provided in the appropriate tables at the end of this chapter.

Information on the financial instrument (grant, concessional loan, non- concessional loan, equity, guarantee or other) is provided in the appropriate tables at the end of this chapter.

Energy, IPPU, Agriculture, LULUCF and Waste for mitigation. Key sectors for adaptation are Agriculture and Food Security, Water Resources, Biodiversity and Ecosystems, Fisheries and Aquaculture, Health, Crosscutting issues, Infrastructure and Coastal zone for adaptation. More details on the sectors and subsectors are provided in chapter 7 of this BTR.

Support needed and received contributes to implement mitigation actions towards meeting Article 2 of the PA and adaptation actions to increase the resilience of the country to climate change impacts. Mitigation actions will lead to reduction of emissions and increased removals to lower the carbon footprint of the country. The result of the combined mitigation and adaptation actions will assist the global community in combating global warming and its impacts through sustainable development initiatives. The end results will be better air quality, improved livelihood, green job creation and improved quality of livelihood among others. Information on the use, impact and estimated results of the support needed and received is provided in the appropriate set of tables at the end of this chapter.

Twenty-two of the actions identified for support contributes to technology development and transfer, and 32 are on capacity building. Information on support as contributing to technology development and transfer and capacity-building is provided in the appropriate set of tables at the end of this chapter.

All efforts have been made to avoid double counting in reporting information on support needed and received for the implementation of Article 13 of the PA and transparency- related activities, including for

transparency-related capacity-building, when reporting such information separately from other information on support needed and received. To facilitate sharing of information under the different items, the projects, actions or measures have been provided in relation to each item individually.

4.3. C. Information on financial support needed by developing country Parties under Article 9 of the Paris Agreement (MPGs Para 132-133)

International finance, including existing barriers

Sectors Nigeria wishes to attract international finance for mitigation are Energy - Energy Industries (Solar, Biomass, Wind and Hydro), Transport (Road), Commercial and Institutional (Solar), Residential (Solar, Biomass), Agriculture (Smart agriculture), Refrigeration and Air conditioning under IPPU, Livestock under Agriculture, Forestland, Cropland and Settlements under LULUCF and Solid Waste Disposal, Incineration and open Burning, and Wastewater Treatment and Discharge under Waste.

Regarding adaptation, the sectors are Agriculture (Livestock and Crops), Water Resources, Biodiversity and Ecosystems, Health, Cross-cutting issues and Infrastructure.

Barriers to attracting international finance are lack of detailed project documents, low readiness of national stakeholders to spearhead project implementation, unavailability of funds for the unconditional part, weak framework for project implementation and limited knowledge on some key technologies to be developed and transferred.

Contribution of support to the NDC and long-term goals of the Paris Agreement

Support needed will lead to mitigation of 494,348 kt CO₂ e. The adaptation measures will increase the resilience of the country to climate change impacts.

Information on Title (of activity, programme or project); Programme/project description; Estimated amount (in domestic currency and in United States dollars); Expected time frame; Expected financial instrument (grant, concessional loan, non-concessional loan, equity, guarantee or other); Type of support (mitigation, adaptation or cross-cutting); Sector and subsector; Whether the activity will contribute to technology development and transfer and/or capacity-building, if relevant; Whether the activity is anchored in a national strategy and/or an NDC; Expected use, impact and estimated results is given in Table 4.1 at the end of this chapter.

4.4. D. Information on financial support received by developing country Parties under Article 9 of the Paris Agreement (MPGs Para 134)

Information on Title (of activity, programme or project); Programme/project description; Channel; Recipient entity; Implementing entity; Amount received (in domestic currency and in United States dollars); Time frame; Financial instrument (grant, concessional loan, non-concessional loan, equity, guarantee or other); Status (committed or received); Sector and subsector; Type of support (mitigation, adaptation or cross-cutting); Whether the activity has contributed to technology development and transfer and/or capacity-building; Status of activity (planned, ongoing or completed); Use, impact and estimated results is provided in Table 4.2 at the end of this chapter.

4.5. E. Information on technology development and transfer support needed by developing country Parties under Article 10 of the Paris Agreement (MPGs Para 135-136)

Plans, needs and priorities related to technology development and transfer, including those identified in technology needs assessments

Technology development and transfer related needs for the enhancement of endogenous capacities and technologies.

Information on the Title (of activity, programme or project); Programme/project description; Type of support (mitigation, adaptation or cross-cutting); Type of technology; Expected time frame; Sector and Expected use, impact and estimated results is given in Table 4.3 at the end of this chapter.

4.6. F. Information on technology development and transfer support received by developing country Parties under Article 10 of the Paris Agreement (MPGs 137-138)

Case studies, including key success and failure stories

Key successful technology transfers are Rural electrification– PV on-grid and off-grid systems, solar water heaters, solar home systems energy-efficient cooking techniques, improved stoves, energy efficiency in public institutions, Bus Rapid Transit system for public transport, smart agriculture, forest restoration and prevention of forest degradation. Some others have been successful to a lower degree and no record of failure stories has been recorded up to now.

Contribution of support to technology development and transfer

Technology development and transfer have not been realised on a stand-alone basis. Most of the time, they are embedded with financial support. This approach has produced good results and should be pursued while not neglecting the development and transfer of key ones such as further penetration of renewable energy, extension of the BRT, introduction of CNG buses and trucks and displacement of fuelwood, charcoal and fossil fuels for cooking by renewable energy sources.

Stage of the technology cycle supported, including research and development, demonstration, deployment, diffusion and transfer of technology

Experience demonstrates that almost all technologies transferred were beyond the development stage. That is well developed, and proven technologies are usually successfully transferred if there is a capacity building component accompanying the demonstration, deployment and diffusion process. Research and development are not overlooked but requires resources that are not readily available for implementation. Research and development should be encouraged through the provision of appropriate support through academic partners/research institutes and training institutions for sustainability and enhanced deployment.

Information on the Title (of activity, programme or project); Programme/project description; Type of technology; Time frame; Recipient entity; Implementing entity; Type of support (mitigation, adaptation or cross-cutting); Sector; Status of activity (planned, ongoing or completed) and Use, impact and estimated results are provided in Table 4.4 at the end of this chapter.

4.7. G. Information on capacity-building support needed by developing country Parties under Article 11 of the Paris Agreement (MPGs 139-140)

Approach Nigeria seeks to take to enhance capacity-building support

Nigeria has adopted a multi-pronged approach to enhance capacity building support. In addition to support provided through the decisions of the COP, namely the enabling activities for the preparation of national reports to the UNFCCC and the CBIT process, Nigeria has and will continue to explore other avenues from other multilateral organizations such as UNDP, UNEP and others. Nigeria will continue to seek support from other bilateral partners, private trusts and organizations. Other possibilities are through the initiatives of the UNFCCC, the GSP global and regional platforms and peer exchanges between countries of the region.

Country-specific capacity-building needs, constraints and gaps

Capacity building needs are very wide and relates to mitigation and adaptation while being closely linked with technology development and transfer. Without underscoring mitigation and adaptation, Nigeria also needs capacity building on cross-cutting issues such as gender mainstreaming in climate actions through the development plans, knowledge management including dissemination and sharing of transparent products, research and development on climate change issues and raising awareness of the population on the PA and its requirements for action. More details on the national capacity building needs are provided in Table 5 at the end of this chapter.

Processes for enhancing public awareness, public participation and access to information in relation to capacity-building.

The best process for enhancing public awareness, public participation and access to information relating to capacity building is to engage stakeholders in a gender sensitive all-inclusive manner. Given the size of the territory, the literacy level, poverty situation and accessibility to information technologies to consult media, it is recommendable that consultation be done physically by deploying local experts trained to do that exercise. As this exercise is costly and time-consuming, Nigeria counts on the support of development partners to undertake a National Capacity Self-Assessment (NCSA), namely after the NDC updating exercise.

Information on the Title (of activity, programme or project); Programme/project description; Expected time frame; Type of support (mitigation, adaptation or cross-cutting) and Expected use, impact and estimated results are provided in the Table 4.5 at the end of this chapter

4.8. H. Information on capacity-building support received by developing country Parties under Article 11 of the Paris Agreement (MPGs Para 141-142)

Case studies, including key success and failure stories

Due to the unavailability of an appropriate system to track information on capacity building, it is difficult to identify success stories and failures. The CBIT1 project is ongoing and will develop capacity to be captured during the implementation of the combined BTR2/NC4 project.

Support received through the Initiative for Climate Action Transparency (ICAT) project partially addressed the MRV systems.

How support received has enhanced a Party's capacity

Support received through the GEF on past enabling activities and the CBIT projects has enhanced the capacity of institutions and national stakeholders. This has enhanced their participation in the activities linked with transparent data collection for reporting according to the ETF of the PA, namely for the compilation of the GHG inventory, tracking of NDC mitigation actions, and support needed and received as well as monitoring of NDC adaptation actions.

The Initiative for Climate Action Transparency (ICAT) enabled Nigeria to strengthen its MRV systems.

Capacity-building support received at the national, subnational and regional levels

Capacity building support has been received under the CBIT1, combined BTR1/NC5, ICAT projects, and UNFCCC initiatives on reporting in accordance with the ETF of the PA

Information on the Title (of activity, programme or project); Programme/project description; Implementing entity; Recipient entity; Type of support (mitigation, adaptation or cross-cutting); Time frame; Status of activity (planned, ongoing or completed) and Use, impact and estimated results are provided in Table 4.6 at the end of this chapter.

4.9. I. Information on support needed and received by developing country Parties for the implementation of Article 13 of the Paris Agreement and transparency-related activities, including for transparency-related capacity-building (MPGs Para 143-144)

Support needed and received for preparing reports pursuant to Article 13

Support needed

Nigeria will need support for the CBIT2 initiative from 2026 to 2029 and the NDC 3.0 process in 2025.

Support received

Nigeria received funds from the GEF and is presently completing its combined BTR1 and combined BTR2/NC4 for submission in December 2024 and December 2026 respectively.

Support received from the GEF for the CBIT1 to strengthen MRV systems for improving compliance with the ETF.

Support needed and received for addressing the areas for improvement identified by the technical expert review teams is not applicable as the BTR1 is yet to be reviewed.

Information on the Title (of activity, programme or project); Objectives and description; Recipient entity; Channel; Amount (in domestic currency and in United States dollars); Time frame; Status of activity (planned, ongoing or completed) and Use, impact and estimated results are provided in Table 4.7 at the end of this chapter.

There has been no double counting as each activity has been reported once only.

Table 4.1 Financial support needed

Title (of activity, programme or project)	Programme/project description	Estimated amount (in domestic currency and in United States dollars) million	Expected time frame	Expected financial instrument (grant, concessional loan, non-concessional loan, equity, guarantee or other)	Type of support (mitigation, adaptation cross-cutting)	Sector and subsector	Whether the activity will contribute to technology development and transfer and/or capacity-building, if relevant	Whether the activity is anchored in a national strategy and/or an NDC	Expected use, impact and estimated results
Participation in Energy Access Relief Facility ("EARF")	The Energy Access Relief Facility ("EARF") is a concessional debt fund that is intended to provide energy access companies with vital liquidity during this crisis, in the form of low-interest, unsecured junior loans.	NN 26466.3522 USD 17.6442348	4-6 years	Concessional loan	Mitigation	Energy Electricity generation	None	Yes	1,330 kt CO ₂ e (see Annex 22a for detail on methodology Lifetime Build resilience Provide access to finance Create jobs
Technical Assistance (TA) Facility for the Global Subnational Climate Fund	Technical Assistance (TA) Facility for the Global Subnational Climate Fund (SnCF Global - Equity; submitted separately)	NN 27750 USD 18.5	7 years	grant	Cross cutting	Other (multiple)	Capacity Building	Yes	3,881.722 kt CO ₂ e Annual Build resilience Provide access to finance Create jobs
Global Subnational Climate Fund (SnCF Global) - Equity	Africa: Burkina Faso; Cameroon; Côte d'Ivoire; Democratic Republic of the Congo; Gabon; Guinea; Kenya; Mali; Mozambique; Nigeria; Rwanda; Senegal; South Africa; Togo; Uganda. Asia- Pacific: Cambodia; Fiji; Indonesia; Myanmar. Latin America and the Caribbean: Bahamas; Brazil; Chile; Costa Rica; Dominica; Dominican Republic; Ecuador; El Salvador; Guatemala; Haiti; Honduras, Jamaica; Mexico; Panama; Uruguay. Mediterranean: Albania; Jordan; Lebanon; Mauritania; Montenegro; Morocco; North Macedonia; Tunisia.	NN 225000 USD 150	15 years	Equity	Mitigation	Other (multiple)	Capacity Building	Yes	Build resilience Provide access to finance Create jobs

Leveraging Energy Access Finance (“LEAF”) Framework	In particular, the Framework, via a US\$ 334.9 million funding contribution from the GCF and AfDB, aims to: (i) enhance local markets by de-risking the DRE space through guarantees and subordinated debt, unlocking	NN 256350 USD 170.9	12 years	Grant, Loan, Guarantee	Mitigation	Other (multiple)	None	Yes	28,800 kt CO2e Build resilience Provide access to finance Create jobs
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	local currency debt finance and scaling up investments; and (ii) create capacity within local banks and financial institutions to engage and finance DRE businesses, structure strong financing transactions, and support governments to create enabling policies for private investment								
Inclusive Green Financing Initiative (IGREENFIN I):	Greening Agricultural Banks & the Financial Sector to Foster Climate Resilient, Low Emission Smallholder Agriculture in the Great Green Wall (GGW) countries - Phase I	NN 162887.69484 USD 108.59179656	6 years	Grant, Loan	Cross cutting	LULUCF Agriculture	None	Yes	5,637.184 kt CO2e over project life span Build resilience Provide access to finance Create jobs
Climate Investor Two	Climate Investor Two (“CI2”) has the mission to develop and construct infrastructure projects in developing countries in the water, sanitation, and ocean sectors that reduce the effects and consequences of climate change by ameliorating GHG emissions and by increasing resilience.	NN 217500 USD 145	20years	Reimbursable Grant	Cross cutting	Other (multiple)	Technology Capacity Building	Yes	44,650 kt CO2e over the lifetime of the 20 year Programme Build resilience Provide access to finance Create jobs

Programme for Energy Efficiency in Buildings (PEEB) Cool	PEEB Cool is addressing a crosscutting mitigation and adaptation problem. Green buildings can reduce vulnerability to climate change by maintaining thermal comfort in buildings that are not mechanically cooled even under future climate conditions, while addressing mitigation needs by reducing the energy use and GHG emissions related to cooling where that exists.	NN 340500 USD 282	NA	Grant Loan	Cross cutting	Other (multiple)	Technology Capacity Building	Yes	1,562.759 kt CO2e Improved livelihood Energy savings Lower expenditures
Infrastructure Climate Resilient Fund (ICRF)	The proposed Infrastructure Climate Resilient Fund (ICRF) is set up to promote the development of climate resilient infrastructures and prevent significant climate-induced losses that could be associated to infrastructure damages in Africa.	NN 0.3806325 USD 253.755	10 years	grant equity	Adaptation	Other (Infrastructure)	Technology	Yes	Build resilience Avoid loss and damage Safeguard development process
KawiSafi II	The Fund expects to continue the success demonstrated in the deployment of KawiSafi Fund I and target firms with business models that deploy low-carbon technologies in an inclusive and sustainable way and that enable people to participate and flourish in a green economy and growth out of poverty.	52.50	12 years	grant equity	Cross cutting	Other (multiple)	Technology	Yes	20,933.186 kt CO2e Access to electricity
Increase electricity generation capacity	Long term (2030)- 292, 3211, 6832 MW of biomass, wind, and solar (PV and CSP) electricity respectively - NREEEP	NN 0.07875 USD 9967.735172	2030	Not Available	mitigation	Energy Electricity	Technology Capacity Building	Yes	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health

Increase electricity generation capacity Additional renewable grid capacity	Renewables share of 30% of total grid - NREAP, NEEAP - Share of renewable energy (excluding large hydro) in the national energy sector to increase from 0.7% in the short term (2006-09), to 3.3% in the medium term (2010-15) and 10.6% in the long term (201630) - NEMP	NN 497.7195 USD 0.331813	2030	Not Available	Mitigation	Energy Electricity	Technology Capacity Building	Yes	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Increase off-grid renewable energy capacity	In 2015, a total of 11 private mini grids operated in Nigeria. These mini grids serve about 9,100 people, with a cumulated capacity of about 236kW. Also,19 other mini grids that are public, with a combined installed capacity of about 67 kW -In 2019, estimated installed mini-grid capacity was about 2.8MW, with 59 projects serving rural consumers (MGP 2020)	NN 3179427.3615 USD 2119.618241	2030	Not Available	Mitigation	Energy Electricity	Technology Capacity Building	Yes	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Increased use of Solar Home System	Combined capacity of 2.7GW of Solar Home System and Street Lights	NN 11197113.7515 USD 7464.742501	2030	Not Available	Mitigation	Other (multiple)	Technology	Yes	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Improve Urban and Rural Street Lightings	City-wide LED Street Light Retrofit Program implemented in Lagos, Kano, Ibadan, Abuja, Port Harcourt and Benin City	NN 143132.577 USD 95.421718	2030	Not Available	Mitigation	Energy Electricity	None	Yes	Cleaner environment Lower emissions (TBE)

Increase energy efficiency system through cooling technologies with low Global Warming Potential (GWP)	Transition to energy - efficient air conditioning using the low GWP natural refrigerants in residential, commercial and public buildings. of the Kigali Cooling Energy Programme (K-CEP)	NN 200344.9005 USD 133.563267	2030	Not Available	Mitigation	IPPU RAC	Technology Capacity Building	Yes	Lower emissions (TBE) Cleaner environment Protection of ozone layer Job creation Income generation Better health
Reduce gas flaring	Volume of gas flared in 2022 was 113.2 billion SCF of gas equivalent to carbon dioxide emissions of 11.9 million tonnes - NOSDRA	NN 1990.8795 USD 1.327253	2030	Not Available	Mitigation	Energy Oil and Gas	Technology Capacity Building	Yes	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Improved gas capture efficiency	Reduce venting and flaring through liquefaction for sale	NN 94.362 USD 0.062908	2030	Not Available	Mitigation	Energy Oil and Gas	Technology Capacity Building	Yes	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Reduce fugitive emissions	Increased efficiency of fugitive methane leak detection and repair (LDAR) programs	NN 524.226 USD 0.349484	2030	Not Available	Mitigation	Energy Oil and Gas	Technology Capacity Building	Yes	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
An improved transport system - Increase use of Bus Rapid Transit (BRT)	Lagos BRT system has 250 buses across a 22-kilometre corridor benefitting 200,000 passengers everyday - https://brtdata.org/location/africa/nigeria/lagos	NN 1335840.7185 USD 890.560479	2030	Not Available	Mitigation	Energy Transport	Technology Capacity Building	Yes	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health

Increased use of CNG trucks and buses	25% of trucks and buses would be using CNG by 2030	NN 423730.5465 USD 282.487031	2030	Not Available	Mitigation	Energy Transport	Technology Capacity Building	Yes	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Implement a sustainable urban mobility plan (SUMP)	100,000 non-motorised modes of transport distributed	NN 14254.275 USD 9.50285	2030	Not Available	Mitigation	Energy Transport	Technology Capacity Building	Yes	Cleaner environment Job creation Income generation Better health
Introduce low emissions vehicles	All vehicle meets Euro III emissions limits by 2023 and EURO IV by 2030 - - Lagos State subnational climate action plan	NN 833.217 USD 0.555478	2030	Not Available	Mitigation	Energy Transport	Technology	Yes	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Collaborating with development partners, donor organizations, and nongovernmental organizations (NGOs) to develop feasibility studies and business plans on electric and low carbon mobility/transportation in cities	1,000 Transport State Ministry officials trained (senior and junior, men and women)	NN 602.9985 USD 0.401999	Not Available	Not Available	Mitigation	Energy Transport	Capacity Building	Yes	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health

Implementation of smart agriculture technologies	50% increase in area	NN 933587.7195 USD 622.391813	2030	Not Available	Cross cutting	Agriculture Crops	Technology Capacity Building	Yes	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
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Enhance adoption of smart agriculture practices	Develop and implement business friendly climate smart agriculture strategy across all agriculture related institutions in the NCA and other line Ministries of importance	NN 27813.1005 USD 18.542067	2030	Not Available	Cross cutting	Agriculture Crops	Technology Capacity Building	Yes	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
capacity building of finance operators on climate smart business opportunities	Provide training to private sector investors, particularly financiers and capital allocators, on the mechanics of climate-smart agriculture technologies and the associated business opportunities	NN 16518.3585 USD 11.012239	2030	Not Available	Cross cutting	Agriculture Crops	Technology Capacity Building	Yes	Lower emissions (TBE) Access to finance Quality of products Enhanced productivity Savings on inputs Preservation of environment
Train female workers to enhance their skills and best practices on smart agriculture and the diversification of livestock production	Increase the number of women, youth and PWD trained on smart agriculture	NN 2033.9895 USD 1.355993	2030	Not Available	Cross cutting	Agriculture Crops	Technology Capacity Building	Yes	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment

Achieve a 50% reduction in crop residue burning	Target at least 50% of reduced crop residue burning by farmers by 2030	NN 2374999.9995 USD 1583.333333	2030	Not Available	Mitigation	Agriculture Crops	None	Yes	Lower emissions (TBE) Preservation of environment Better health Increased output of workers
Enhanced climate smart agriculture through an integrated approach to managing landscapes	Reduction in GHG emissions resulting from the adoption of sustainable land management practices	NN 1412423.694 USD 941.615796	2030	Not Available	Cross cutting	Agriculture Crops	Capacity Building	Yes	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment

Enhance forest restoration by recovering degraded areas expanding forest cover	2006 National Forest Policy targets increased forest cover to 25% by 2030	NN 1452526.9815 USD 968.351321	2030	Not Available	Mitigation	LULUCF Forestry	None	Yes	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Improved forest conservation practices	Increase in sustainable forest area using verified reported data, including reduction in illegal logging incidents and forest resource theft	NN 494.8665 USD 0.329911	2030	Not Available	Mitigation	LULUCF Forestry	Capacity Building	Yes	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Capacity building of women, youth and disabled on agriculture and forestry	By 2030, aim to train at least 5,000 women, youth, and persons with disabilities in agriculture and forestry programs	NN 3797.6175 USD 2.531745	2030	Not Available	Cross cutting	LULUCF Forestry Agriculture	Capacity Building	Yes	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation

									of environment
Enhanced biodiversity and ecosystem health	Increase terrestrial protected area coverage by 374 km2, help private owners and communities reserve forests in the NFP and include an additional 10 parks (NPS)	NN 7007.091 USD 4.671394	2030	Not Available	Mitigation	LULUCF Forestry	Capacity Building	Yes	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Enhance forest preservation	Improvement in the resilience of forest ecosystems to natural disturbances and climate change from recovery rates and adaptive management practices	NN 674.8185 USD 0.449879	2030	Not Available	Mitigation	LULUCF Forestry	Capacity Building	Yes	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Improve forest management	Engage with stakeholders and the public to share information on forest resilience strategies, climate change adaptation, and the role of sustainable forest management in enhancing ecosystem resilience	NN 346.5 USD 0.231	2030	Not Available	Mitigation	LULUCF Forestry	Capacity Building	Yes	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Enhance reforestation by restoring the Mangrove ecosystem across coastal states	Hectares (Ha) of mangrove ecosystem restored across all coastal states in the Niger Delta by 2030	NN 1102869.0495 USD 735.246033	2030	Not Available	Mitigation	LULUCF Forestry	Capacity Building	Yes	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment

Improved Forest Monitoring Systems and Safeguard Measures	Development of a national REDD+ registry and system monitoring REDD+ activities, integrated to national MRV system	NN 33596.9475 USD 22.397965	2030	Not Available	Mitigation	LULUCF Forestry	Technology Capacity Building	Yes	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Build capacity of educational institutions on waste management	Achieve at least 75% on waste reduction, recycling and reuse training	NN 1172.268 USD 0.781512	Not Available	Not Available	Mitigation	Waste Solid waste	Technology Capacity Building	Yes	Lower emissions (TBE) Preservation of environment Better health
Training of senior and junior officials of subnational on promoting the use of different waste bins for recyclables and solid waste as well as the practical processes of circularity of waste	In-house capacity developments for Federal, State and LGA levels organisations involved in waste management optimised to at least 25% by 2025 (within 5 years of the policy)- National Policy of Solid Waste Management 2020	NN 116.976 USD 0.077984	Not Available	Not Available	Mitigation	Waste Solid waste	Capacity Building	Yes	Lower emissions (TBE) Preservation of environment Better health Income generation Job creation
Provide training on plumbing, water plant treatment, communitybased quality monitoring system and service provisions at state and rural levels.	30 training sessions per year with 36 people per session	NN 5978.8755 USD 3.985917	Not Available	Not Available	Adaptation	Water Resources	Capacity Building	Yes	Income generation Job creation

Collaborating with development partners, donor organizations, and non-governmental organizations (NGOs) to advance awareness and capacitybuilding initiatives about quality wastewater recycling for municipal distribution and use	In-house capacity developments for Federal, State and LGA levels organisations involved in waste management optimised to at least 25% by 2025 (within 5 years of the policy)- National Policy of Solid Waste Management 2020	NN 470.1645 USD 0.313443	Not Available	Not Available	Mitigation	Waste Wastewater	Capacity Building	Yes	Income generation Job creation Better health
Develop renewable energy investment strategy and funding options	37 sub-national renewable energy clusters formed, including the Federal Capital Territory (FCT), with roles defined	NN 332.736 USD 0.221824	Not Available	Not Available	Mitigation	Energy	Capacity Building	Yes	Lower emissions (TBE) Preservation of environment Better health Income generation Job creation Access to finance
Energy Audit of Fuel Consumption and Vehicular Emission of Road Transport Sector in Kano, Lagos and Abuja, Nigeria.	The project aims to reduce the carbon footprints of vehicular transportation accessing the consumption and utilization of fuels in the sub sector, by collecting information on vehicle condition and use for the implementation of a rationalization plan and the subsequent verification of compliance.	NN176.9799375 6 USD 0.12	2026-2029	Grant	Mitigation	Energy	Technology Capacity Building	Yes	Lower emissions (TBE) Preservation of environment Better health Income generation Job creation

Upscaling biogas technology for cooking in northwest region (Nigeria)	This project aims to implement biogas technology in selected villages in Kano, Sokoto and Kebbi states, demonstrating its potential to address climate change, environmental degradation,	NN USD 0.33	500	2026-2028	Grant	Mitigation	Energy	Technology Capacity Building	Yes	Lower emissions (TBE) Preservation of environment Better health Income generation
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	gender equality and economic challenges in the region									Job creation Savings
MRV systems	Strengthen and improve MRV systems to enhance Part's ability to report in compliance with the MPGs	TBE		2025	Grant	Cross cutting	GHG inventory Mitigation Support	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Improve completeness of GHG inventory	Complete time series with missing years 1990 to 1999	TBE		2025	Grant	Cross cutting	GHG inventory All IPCC sectors	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Improve completeness of GHG inventory	Conduct surveys to collect AD and estimate emissions for subcategories 2.F.1. Refrigeration and air conditioning, 2.F.3. Fire protection, 2.F.4. Aerosols and 2.F.5. Solvent	TBE		2025	Grant	Cross cutting	GHG inventory All IPCC sectors	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Improve completeness of GHG inventory	Conduct surveys to collect AD and estimate emissions for subcategories 2.G.1. Electrical equipment, 2.G.2. SF6 and PFCs from other product use and 2.G.3. N2O from product use	TBE		2025	Grant	Cross cutting	GHG inventory All IPCC sectors	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Develop tool for estimating uncertainties at category level	TBE	2025	Grant	Cross cutting	GHG inventory All IPCC sectors	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect AD on vehicle classes, km run and consumption by vehicle class	TBE	2025	Grant	Cross cutting	Energy Road transportation	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Contact cement producers for plant data to move to Tier2	TBE	2025	Grant	Cross cutting	IPPU Mineral industry	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Conduct surveys and studies as appropriate to collect AD for moving to Tier 2 for Enteric Fermentation	TBE	2025	Grant	Cross cutting	Agriculture Enteric fermentation	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Collect detailed information on Rice cultivation to move to Tier 2	TBE	2025	Grant	Cross cutting	Agriculture Rice cultivation	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Avail land use maps at 5-year time steps from 2000 to 2020 to build land use change matrix. Estimate carbon stocks in the different carbon pools reflecting the ecological zones of the country and improve information on wood removals and disturbances.	TBE	2025	Grant	Cross cutting	LULUCF All land classes	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Engage stakeholders to collect subcategory AD for estimating emissions for 1.A.2.b. Nonferrous metals 1.A.2.d. Pulp, paper and print 1.A.2.e. Food processing, beverages and tobacco 1.A.2.g.viii Other	TBE	2025	Grant	Cross cutting	Energy Manufacturing Industries and Construction	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect data, estimate emissions for Glass production to enhance completeness	TBE	2025	Grant	Cross cutting	IPPU Mineral Industry	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect data, estimate emissions for 2.D.1. Lubricant use 2.D.2. Paraffin wax use to enhance completeness	TBE	2025	Grant	Cross cutting	IPPU Non-energy products from fuels and solvent use	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect data, estimate emissions for Petrochemical and carbon black production to enhance completeness	TBE	2025	Grant	Cross cutting	IPPU Chemical industry	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data, estimate emissions from Composting enhance completeness	TBE	2025	Grant	Cross cutting	Waste Biological treatment of solid waste	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data, estimate emissions for Liming to enhance completeness	TBE	2025	Grant	Cross cutting	Agriculture Liming	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data, estimate emissions from 5.C.1. Waste incineration to enhance completeness	TBE	2025	Grant	Cross cutting	Waste Incineration and open burning of waste	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Investigate if activity is occurring for Pulp and paper 2.H.2. Food and beverages industry	TBE	2025	Grant	Cross cutting	IPPU Other	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data and estimate emissions for 1.B.2.a. Oil 1.B.2.b. Natural gas at Tier 2 level	TBE	2025	Grant	Cross cutting	Energy Oil and natural gas and other emissions from energy production	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data and estimate emissions for 1.B.1.b. Fuel transformation at Tier 2 level	TBE	2025	Grant	Cross cutting	Energy Solid fuels	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness Energy industries sub-categories	TBE	2025	Grant	Cross cutting	Energy Energy industries	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Undertake in-depth study to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness on Other sectors	TBE	2025	Grant	Cross cutting	Energy Other sectors	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
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Meeting Article 13 of Paris Agreement	Undertake in-depth study to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness on 3.D.1. Direct N2O emissions from managed soils 3.D.1.a. Inorganic N fertilizers 3.D.1.c. Urine and dung deposited by grazing animals 3.D.2. Indirect N2O Emissions from managed soils	TBE	2025	Grant	Cross cutting	Agriculture Agricultural soils	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study on Solid waste disposal to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness	TBE	2025	Grant	Cross cutting	Waste Solid waste disposal	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study on Wastewater treatment and discharge to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness	TBE	2025	Grant	Cross cutting	Waste Wastewater treatment and discharge	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Review and strengthen the engagement process and train all key stakeholders to use developed tools and templates for collecting data and information for reporting on Article 4 as per the MPGs	TBE	2025	Grant	Cross cutting	NDC All IPCC sectors	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Review the engagement process and train all key stakeholders to use tools to be developed and templates for collecting data and information for reporting on Article 7 as per the MPGs	TBE	2025	Grant	Cross cutting	NDC Adaptation	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Review the engagement process and train all key stakeholders to use developed tools and templates for collecting data and information for reporting as per the MPGs and identify and estimate needs in relation to climate actions	TBE	2025	Grant	Cross cutting	NDC Support	Capacity Building	Yes	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
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Table 4.2 Financial support received

Title (of activity, programme or project)	Programme /project description	Channel	Recipient entity	Implementing entity	Amount in domestic currency (M N\$)	Amount in United States dollars (M USD)	Time frame	Financial instrument (grant, concessional loan, non-concessional loan, equity, guarantee or other)	Status (committed or received)	Sector and subsector	Type of support (mitigation, adaptation or crosscutting)	Whether the activity has contributed to technology development and transfer and/or capacitybuilding	Status of activity (planned, ongoing or completed)	Use, impact and estimated results
Improving access to electricity	Installation of mini grids	Multilateral	Government of Nigeria	Rural Electrification Agency (REA)	525,000	350	2018 onwards	Concessional Loan	Committed	Energy Electricity generation	Mitigation	Technology transfer	Ongoing	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Improving access to electricity	Installation of mini grids	Multilateral	Government of Nigeria	Rural Electrification Agency (REA)	300,000	200	2019 onwards	Concessional Loan	Committed	Energy Electricity generation	Mitigation	Technology transfer	Ongoing	Lower emissions (TBE) Access to

														electricity Income generation Job creation Improved livelihood Better health
Agro-Climatic Resilience in SemiArid Landscapes (ACReSAL)	Increase the adoption of sustainable landscape management practices in targeted watersheds in northern Nigeria and strengthen Nigeria's long-term framework for integrated climate resilient landscape management	Multilateral	Federal Ministry of Environment	Rural Electrification Agency (REA)	1,050,000	700	2018 onwards	Concessional Loan	Committed	Agriculture Rural development	Mitigation	Technology transfer Capacity building	Ongoing	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
Promoting Integrated Landscape Management Sustainable Food Systems in the Niger Delta Region in Nigeria (FSP)	Not Available	Multilateral	Ministry of finance	Not available	12,011	8.007	2022 onwards	Grant	Received	Agriculture	Adaptation	capacity Building	Ongoing	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment

Table 4.3 Technology development support needed

Title (of activity, programme or project)	Programme/project description	Type of support (mitigation, adaptation or cross-cutting)	Type of technology	Expected time frame	Sector	Expected use, impact and estimated result
Climate Investor Two	Climate Investor Two (“CI2”) has the mission to develop and construct infrastructure projects in developing countries in the water, sanitation, and ocean sectors that reduce the effects and consequences of climate change by ameliorating GHG emissions and by increasing resilience.	Cross cutting	Infrastructure	20years	Other Multiple	44,650 kt CO2e over the lifetime of the 20 year Programme Build resilience Provide access to finance Create jobs
Programme for Energy Efficiency in Buildings (PEEB) Cool	PEEB Cool is addressing a crosscutting mitigation and adaptation problem. Green buildings can reduce vulnerability to climate change by maintaining thermal comfort in buildings that are not mechanically cooled even under future climate conditions, while addressing mitigation needs by reducing the energy use and GHG emissions related to cooling where that exists.	Cross cutting	Green building	NA	Other Multiple	1,562.759 kt CO2e Improved livelihood Energy savings Lower expenditures
Infrastructure Climate Resilient Fund (ICRF)	The proposed Infrastructure Climate Resilient Fund (ICRF) is set up to promote the development of climate resilient infrastructures and prevent significant climate-induced losses that could be associated to infrastructure damages in Africa.	Adaptation	Infrastructure	10 years	Other (Infrastructure)	Build resilience Avoid loss and damage Safeguard development process

KawiSafi II	The Fund expects to continue the success demonstrated in the deployment of KawiSafi Fund I and target firms with business models that deploy low-carbon technologies in an inclusive and sustainable way and that enable people to participate and flourish in a green economy and growth out of poverty.	Cross cutting	low carbon technologies	12 years	Other Multiple	20,933.186 kt CO2e Access to electricity Income generation Job creation
Increase electricity generation capacity	Long term (2030)- 292, 3211, 6832 MW of biomass, wind, and solar (PV and CSP) electricity respectively - NREEEP	Mitigation	Renewable energy technologies	2030	Energy (Electricity generation)	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Increase electricity generation capacity Additional renewable grid capacity	Renewables share of 30% of total grid - NREAP, NEEAP - Share of renewable energy (excluding large hydro) in the national energy sector to increase from 0.7% in the short term (2006-09), to 3.3% in the medium term (2010-15) and 10.6% in the long term (2016-30) – NEMP	Mitigation	Renewable energy technologies	2030	Energy (Electricity generation)	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Increase off-grid renewable energy capacity	In 2015, a total of 11 private mini grids operate in Nigeria. These mini grids serve about 9,100 people, with a cumulated capacity of about 236kW. Also,19 other mini grids that are public, with a combined installed capacity of about 67 kW In 2019, estimated installed minigrid capacity was about 2.8MW, with 59 projects serving rural consumers (MGP 2020)	Mitigation	PV technology	2030	Energy (Electricity generation)	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Increased use of Solar Home System	Combined capacity of 2.7GW of Solar Home System and Street Lights	Mitigation	PV technology	2030	Other Multiple	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health

Increase energy efficiency system through cooling technologies with low Global Warming Potential (GWP)	Transition to energy - efficient air conditioning using the low GWP natural refrigerants in residential, commercial and public buildings. of the Kigali Cooling Energy Programme (K-CEP)	Mitigation	F-gases recovery	2030	IPPU (RAC)	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Reduce gas flaring	Volume of gas flared in 2022 was 113.2 billion SCF of gas equivalent to carbon dioxide emissions of 11.9 million tonnes - NOSDRA	Mitigation	Gas recovery	2030	Energy (Oil and Gas)	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Improved gas capture efficiency	Reduce venting and flaring through liquefaction for sale	Mitigation	Gas recovery	2030	Energy (Oil and Gas)	Lower emissions (TBE) Access to electricity Income generation Job creation

						Improved livelihood Better health
Reduce fugitive emissions	Increased efficiency of fugitive methane leak detection and repair (LDAR) programs	Mitigation	LDAR	2030	Energy (Oil and Gas)	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
An improved transport system - Increase use of Bus Rapid Transit (BRT)	Lagos BRT system has 250 buses across a 22-kilometre corridor benefitting 200,000 passengers everyday - https://brtdata.org/location/africa/nigeria/lagos	Mitigation	BRT	2030	Energy (Transport)	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Increased use of CNG trucks and buses	25% of trucks and buses would be using CNG by 2030	Mitigation	CNG engines	2030	Energy (Transport)	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Implement a sustainable urban mobility plan (SUMP)	100,000 non-motorised modes of transport distributed	Mitigation	Urban transport planning	2030	Energy (Transport)	Cleaner environment Job creation Income generation Better health

Introduce low emissions vehicles	All vehicle meets Euro III emissions limits by 2023 and EURO IV by 2030 - - Lagos State subnational climate action plan	Mitigation	Low emissions engines	2030	Energy (Transport)	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Implementation of smart agriculture technologies	50% increase in area	Cross cutting	Smart agriculture techniques	2030	Agriculture (Crops)	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
Enhance adoption of smart agriculture practices	Develop and implement business friendly climate smart agriculture strategy across all agriculture related institutions in the NCA and other line Ministries of importance	Cross cutting	Smart agriculture techniques	2030	Agriculture (Crops)	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
Capacity building of finance operators on climate smart business opportunities	Provide training to private sector investors, particularly financiers and capital allocators, on the mechanics of climate-smart agriculture technologies and the associated business opportunities	Cross cutting	Smart agriculture techniques	2030	Agriculture (Crops)	Lower emissions (TBE) Access to finance Quality of products Enhanced productivity Savings on inputs Preservation of environment
Train female workers to enhance their skills and best practices on smart agriculture and the diversification of livestock production	Increase the number of women, youth and PWD trained on smart agriculture	Cross cutting	Smart agriculture techniques	2030	Agriculture (Crops)	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
Improved Forest Monitoring Systems and Safeguard Measures	Development of a national REDD+ registry and system monitoring REDD+ activities, integrated to national MRV system	Mitigation	Forest monitoring techniques	2030	LULUCF (Forestry)	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Build capacity of educational institutions on waste management	Achieve at least 75% on waste reduction, recycling and reuse training	Mitigation	Solid waste management techniques	Not Available	Waste (Solid waste)	Lower emissions (TBE) Preservation of environment Better health

Table 4.4 Technology development support received

Title (of activity, programme or project)	Programme/project description	Type of technology	Time frame	Recipient entity	Implementing entity	Type of support (mitigation, adaptation or cross-cutting)	Sector	Status of activity (planned, ongoing or completed)	Use, impact and estimated results
Improving access to electricity	Installation of mini grids	Renewable energy Solar PV	2018 onwards	Government of Nigeria	Rural Electrification Agency (REA)	Mitigation	Energy Electricity generation	Ongoing	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Improving access to electricity	Installation of mini grids	Renewable energy Solar PV	2019 onwards	Government of Nigeria	Rural Electrification Agency (REA)	Mitigation	Energy Electricity generation	Ongoing	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL)	Increase the adoption of sustainable landscape management practices in targeted watersheds in northern Nigeria and strengthen Nigeria's long-term framework for integrated climateresilient landscape management	Smart agriculture	2018 onwards	Federal Ministry of Environment	Rural Electrification Agency (REA)	Cross cutting	Agriculture Rural development	Ongoing	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
Promoting Integrated Landscape Management Sustainable Food Systems in the Niger Delta Region in Nigeria (FSP)	Not Available	Smart agriculture	2022 onwards	Ministry of finance	Not available	Adaptation	Agriculture food production	Ongoing	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment

Table 4.5 Capacity building support needed

Title (of activity, programme or project)	Programme/project description	Expected time frame	Type of support	Expected use, impact and estimated results
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			(mitigation, adaptation or cross-cutting)	
Technical Assistance (TA) Facility for the Global Subnational Climate Fund	Technical Assistance (TA) Facility for the Global Subnational Climate Fund (SnCF Global - Equity; submitted separately)	7 years	Cross cutting	3,881.722 kt CO ₂ e Annual Build resilience Provide access to finance Create jobs
Global Sub national Climate Fund (SnCF Global) - Equity	Africa: Burkina Faso; Cameroon; Côte d'Ivoire; Democratic Republic of the Congo; Gabon; Guinea; Kenya; Mali; Mozambique; Nigeria; Rwanda; Senegal; South Africa; Togo; Uganda. Asia- Pacific: Cambodia; Fiji; Indonesia; Myanmar. Latin America and the Caribbean: Bahamas; Brazil; Chile; Costa Rica; Dominica; Dominican Republic; Ecuador; El Salvador; Guatemala; Haiti; Honduras, Jamaica; Mexico; Panama; Uruguay. Mediterranean: Albania; Jordan; Lebanon; Mauritania; Montenegro; Morocco; North Macedonia; Tunisia.	15 years	Mitigation	Build resilience Provide access to finance Create jobs
Climate Investor Two	Climate Investor Two ("CI2") has the mission to develop and construct infrastructure projects in developing countries in the water, sanitation, and ocean sectors that reduce the effects and consequences of climate change by ameliorating GHG emissions and by increasing resilience.	20years	Cross cutting	44,650 kt CO ₂ e over the lifetime of the 20 year Programme Build resilience Provide access to finance Create jobs
Programme for Energy Efficiency in Buildings (PEEB) Cool	PEEB Cool is addressing a crosscutting mitigation and adaptation problem. Green buildings can reduce vulnerability to climate change by maintaining thermal comfort in buildings that are not mechanically cooled even under future climate conditions, while addressing mitigation needs by reducing the energy use and GHG emissions related to cooling where that exists.	NA	Cross cutting	1,562.759 ktCO ₂ eq Improved livelihood Energy savings Lower expenditures
Increase electricity generation capacity	Long term (2030)- 292, 3211, 6832 MW of biomass, wind, and solar (PV and CSP) electricity respectively - NREEEP	2030	Mitigation	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Increase electricity generation capacity Additional renewable grid capacity	Renewables share of 30% of total grid - NREAP, NEEAP - Share of renewable energy (excluding large hydro) in the national energy sector to increase from 0.7% in the short term (2006-09), to 3.3% in the medium term (2010-15) and 10.6% in the long term (2016-30) - NEMP	2030	Mitigation	Lower emissions (TBE) Access to electricity Income generation Job creation
				Improved livelihood Better health

Increase off-grid renewable energy capacity	In 2015, a total of 11 private mini grids operate in Nigeria. These mini grids serve about 9,100 people, with a cumulated capacity of about 236kW. Also, 19 other mini grids that are public, with a combined installed capacity of about 67 kW -In 2019, estimated installed mini-grid capacity was about 2.8MW, with 59 projects serving rural consumers (MGP 2020)	2030	Mitigation	Lower emissions (TBE) Access to electricity Income generation Job creation Improved livelihood Better health
Increase energy efficiency system through cooling technologies with low Global Warming Potential (GWP)	Transition to energy - efficient air conditioning using the low GWP natural refrigerants in residential, commercial and public buildings. of the Kigali Cooling Energy Programme (K-CEP)	2030	Mitigation	Lower emissions (TBE) Cleaner environment Protection of ozone layer Job creation Income generation Better health
Reduce gas flaring	Volume of gas flared in 2022 was 113.2 billion SCF of gas equivalent to carbon dioxide emissions of 11.9 million tonnes - NOSDRA	2030	Mitigation	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Improved gas capture efficiency	Reduce venting and flaring through liquefaction for sale	2030	Mitigation	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Reduce fugitive emissions	Increased efficiency of fugitive methane leak detection and repair (LDAR) programs	2030	Mitigation	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
An improved transport system - increased use of Bus Rapid Transit (BRT)	Lagos BRT system has 250 buses across a 22-kilometer corridor benefitting 200,000 passengers everyday - https://brtdata.org/location/africa/nigeria/lagos	2030	Mitigation	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Increased use of CNG trucks and buses	25% of trucks and buses would be using CNG by 2030	2030	Mitigation	Lower emissions (TBE) Cleaner environment Job creation Income generation Better health
Implement a sustainable urban mobility plan (SUMP)	100,000 non-motorised modes of transport distributed	2030	Mitigation	Cleaner environment Job creation Income generation Better health

Collaborating with development partners, donor organizations, and non-governmental	1,000 Transport State Ministry officials trained (senior and junior, men and women)	Not Available	Mitigation	Lower emissions (TBE) Cleaner environment Job creation
organizations (NGOs) to develop feasibility studies and business plans on electric and low carbon mobility/transportation in cities				Income generation Better health
Implementation of smart agriculture technologies	50% increase in area	2030	Cross cutting	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
Enhance adoption of smart agriculture practices	Develop and implement business friendly climate smart agriculture strategy across all agriculture related institutions in the NCA and other line Ministries of importance	2030	Cross cutting	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
capacity building of finance operators on climate smart business opportunities	Provide training to private sector investors, particularly financiers and capital allocators, on the mechanics of climate-smart agriculture technologies and the associated business opportunities	2030	Cross cutting	Lower emissions (TBE) Access to finance Quality of products Enhanced productivity Savings on inputs Preservation of environment
Train female workers to enhance their skills and best practices on smart agriculture and the diversification of livestock production	Increase the number of women, youth and PWD trained on smart agriculture	2030	Cross cutting	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
Enhanced climate smart agriculture through an integrated approach to managing landscapes	Reduction in GHG emissions resulting from the adoption of sustainable land management practices	2030	Cross cutting	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs Preservation of environment
Improved forest conservation practices	Increase in sustainable forest area using verified reported data, including reduction in illegal logging incidents and forest resource theft	2030	Mitigation	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Capacity building of women, youth and disabled on agriculture and forestry	By 2030, aim to train at least 5,000 women, youth, and persons with disabilities in agriculture and forestry programs	2030	Cross cutting	Lower emissions (TBE) Quality of products Enhanced productivity Savings on inputs

				Preservation of environment
Enhanced biodiversity and ecosystem health	Increase terrestrial protected area coverage by 374 km ² , help private owners and communities reserve forests in the NFP and include an additional 10 parks (NPS)	2030	Mitigation	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Enhance forest preservation	Improvement in the resilience of forest ecosystems to natural disturbances and climate change from recovery rates and adaptive management practices	2030	Mitigation	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Improve forest management	Engage with stakeholders and the public to share information on forest resilience strategies, climate change adaptation, and the role of sustainable forest management in enhancing ecosystem resilience	2030	Mitigation	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment

Enhance reforestation by restoring the Mangrove ecosystem across coastal states	Hectares (Ha) of mangrove ecosystem restored across all coastal states in the Niger Delta by 2030	2030	Mitigation	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Improved Forest Monitoring Systems and Safeguard Measures	Development of a national REDD+ registry and system monitoring REDD+ activities, integrated to national MRV system	2030	Mitigation	Increase sink capacity (TBE) Enhanced ecosystem services Preservation of environment
Build capacity of educational institutions on waste management	Achieve at least 75% on waste reduction, recycling and reuse training	Not Available	Mitigation	Income generation Job creation
Training of senior and junior officials of subnational on promoting the use of different waste bins for recyclables and solid waste as well as the practical processes of circularity of waste	In-house capacity developments for Federal, State and LGA levels organisations involved in waste management optimised to at least 25% by 2025 (within 5 years of the policy)- National Policy of Solid Waste Management 2020	Not Available	Mitigation	Lower emissions (TBE) Preservation of environment Better health Income generation Job creation
Provide training on plumbing, water plant treatment, community-based quality monitoring system and service provisions at state and rural levels.	30 training sessions per year with 36 people per session	Not Available	Adaptation	Income generation Job creation

Collaborating with development partners, donor organizations, and non-governmental organizations (NGOs) to advance awareness and capacity-building initiatives about quality wastewater recycling for municipal distribution and use	In-house capacity developments for Federal, State and LGA levels organisations involved in waste management optimised to at least 25% by 2025 (within 5 years of the policy)- National Policy of Solid Waste Management 2020	Not Available	Mitigation	Income generation Job creation Better health
Develop renewable energy investment strategy and funding options	37 sub-national renewable energy clusters formed, including the Federal Capital Territory (FCT), with roles defined	Not Available	Mitigation	Lower emissions (TBE) Preservation of environment Better health Income generation Job creation Access to finance
Energy Audit of Fuel Consumption and Vehicular Emission of Road Transport Sector in Kano, Lagos and Abuja, Nigeria.	The project aims to reduce the carbon footprints of vehicular transportation accessing the consumption and utilization of fuels in the sub sector, by collecting information on vehicle condition and use for the implementation of a rationalization plan and the subsequent verification of compliance.	2026-2029	Mitigation	Lower emissions (TBE) Preservation of environment Better health Income generation Job creation
Upscaling biogas technology for cooking in northwest region (Nigeria)	This project aims to implement biogas technology in selected villages in Kano, Sokoto and Kebbi states, demonstrating its potential to address climate change, environmental degradation, gender equality and economic challenges in the region	2026-2028	Mitigation	Lower emissions (TBE) Preservation of environment Better health Income generation Job creation Savings

MRV systems	Strengthen and improve MRV systems to enhance Part's ability to report in compliance with the MPGs	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Improve completeness of GHG inventory	Complete time series with missing years 1990 to 1999	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Improve completeness of GHG inventory	Conduct surveys to collect AD and estimate emissions for sub-categories 2.F.1. Refrigeration and air conditioning, 2.F.3. Fire protection, 2.F.4. Aerosols and 2.F.5. Solvent	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Improve completeness of GHG inventory	Conduct surveys to collect AD and estimate emissions for sub-categories 2.G.1. Electrical equipment, 2.G.2. SF6 and PFCs from other product use and 2.G.3. N2O from product use	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Develop tool for estimating uncertainties at category level	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS

Meeting Article 13 of Paris Agreement	Conduct surveys to collect AD on vehicle classes, km run and consumption by vehicle class	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Contact cement producers for plant data to move to Tier2	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Conduct surveys and studies as appropriate to collect AD for moving to Tier 2 for Enteric Fermentation	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Collect detailed information on Rice cultivation to move to Tier 2	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Avail land use maps at 5-year time steps from 2000 to 2020 to build land use change matrix. Estimate carbon stocks in the different carbon pools reflecting the ecological zones of the country and improve information on wood removals and disturbances.	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Engage stakeholders to collect subcategory AD for estimating emissions for 1.A.2.b. Non-ferrous metals 1.A.2.d. Pulp, paper and print 1.A.2.e. Food processing, beverages and tobacco 1.A.2.g.viii Other	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect data, estimate emissions for Glass production to enhance completeness	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect data, estimate emissions for 2.D.1. Lubricant use 2.D.2. Paraffin wax use to enhance completeness	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect data, estimate emissions for Petrochemical and carbon black production to enhance completeness	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data, estimate emissions from Composting enhance completeness	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data, estimate emissions for Liming to enhance completeness	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data, estimate emissions from 5.C.1. Waste incineration to enhance completeness	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Investigate if activity is occurring for Pulp and paper 2.H.2. Food and beverages industry	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data and estimate emissions for 1.B.2.a. Oil 1.B.2.b. Natural gas at Tier 2 level	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS

Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data and estimate emissions for 1.B.1.b. Fuel transformation at Tier 2 level	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness Energy industries sub-categories	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness on Other sectors	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness on 3.D.1. Direct N2O emissions from managed soils 3.D.1.a. Inorganic N fertilizers 3.D.1.c. Urine and dung deposited by grazing animals 3.D.2. Indirect N2O Emissions from managed soils	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study on Solid waste disposal to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study on Wastewater treatment and discharge to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Review and strengthen the engagement process and train all key stakeholders to use developed tools and templates for collecting data and information for reporting on Article 4 as per the MPGs	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Review the engagement process and train all key stakeholders to use tools to be developed and templates for collecting data and information for reporting on Article 7 as per the MPGs	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS
Meeting Article 13 of Paris Agreement	Review the engagement process and train all key stakeholders to use developed tools and templates for collecting data and information for reporting as per the MPGs and identify and estimate needs in relation to climate actions	2025	Cross cutting	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LT-LEDS

Table 4.6 Capacity building support received

Title (of activity, programme or project)	Programme/project description	Expected time frame	Type of support (mitigation, adaptation or cross-cutting)	Expected use, impact and estimated results
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Improving access to electricity	Installation of mini grids	Rural Electrification Agency (REA)	Government of Nigeria	Mitigation
Improving access to electricity	Installation of mini grids	Rural Electrification Agency (REA)	Government of Nigeria	Mitigation
Agro-Climatic Resilience in SemiArid Landscapes (ACReSAL)	Increase the adoption of sustainable landscape management practices in targeted watersheds in northern Nigeria and strengthen Nigeria's long-term framework for integrated climate-resilient landscape management	Rural Electrification Agency (REA)	Federal Ministry of Environment	Cross cutting
Promoting Integrated Landscape Management Sustainable Food Systems in the Niger Delta Region in Nigeria (FSP)	Not Available	Not available	Ministry of finance	Adaptation

Table 4.7 Support needed and received for Article 13 of the Paris Agreement

Title (of activity, programme or project)	Objectives and description	Recipient entity	Channel	Amount domestic currency (N\$)	Amount in United States Dollars (USD)	Time frame	Status of activity (planned, ongoing or completed)	Use, impact and estimated results
Nigeria First Adaptation Communication to the UNFCCC	Provide information on the Adaptation goals, actions and challenges and means of implementation of identified NDC actions	NCCC	Not available	Not available	Not available	2024	Completed	Provide the path and framework for strengthening the implementation of NDC adaptation actions, speed up resilience building and avoid losses while supporting sustainable development
CBIT1	Strengthening the capacity of institutions in Nigeria to implement the transparency requirements of the Paris Agreement	Min Env - Forestry Department	multilateral	2198.25	1.4655	2024	Ongoing	Strengthen capacity of institutions and national experts, enhance capacity of Nigeria to conform to Article 13 of the Paris Agreement, Nigeria will produce transparent reports to the UNFCCC
Climate Promise II	Enhance capacity to conform to Article 13 of the PA through development of appropriate frameworks for reporting in the BTR	NCCC	multilateral	Not available	Not available	2022-2024	Ongoing	Strengthen capacity of institutions and national experts, enhance capacity of Nigeria to conform to Article 13 of the Paris Agreement, Nigeria will produce transparent reports to the UNFCCC

Initiative for Climate Action Transparency (ICAT) project	Set up a Just and Gender Inclusive Transition (JGIT) MRV System in Nigeria	Ministry of environment	multilateral	Not available	Not available	2022-2023	Completed	Develop Just and Gender Inclusive Transition (JGIT) MRV and ensure it links with the sectoral MRV system and the ETF implemented by the Ministry of Environment to achieve synergy, institutional memory and stakeholder inclusion and cooperation. Enable a tripartite cooperation between Government, Labour and Employer Associations to achieve a Just and Gender Inclusive Transition going forward with the implementation of the Paris agreement. Support policymakers in setting up JGIT MRV and designing a JGIT roadmap to track just transition impacts of climate policies and actions.
Initiative for Climate Action Transparency (ICAT) project	Developing and applying a sectoral MRV framework to measure the performance of targeted climate policies defined for the Industrial Processes and Other Product Use (IPPU) sector and integrating this sectoral MRV system into the national overarching MRV system under the Enhanced Transparency Framework (ETF) Supporting Nigeria in tracking the implementation of its Energy Transition Plan (ETP), with the application of the ICAT Renewable Energy policy assessment guide	NCCC	multilateral	Not available	Not available	2022-2024	Ongoing	Operationalize Nigeria's national MRV framework Build capacity within the NCCC with setting up an operational GHG inventory management system (GHGIMS) Develop the IPPU sectoral MRV framework and integrate it within the national MRV system and institutional arrangements. Track progress in implementing Nigeria's Energy Transition Plan (ETP), including harmonizing it with its NDCs
Nigeria's First Biennial Transparency Report (BTR1) and combined Second Biennial Transparency Report and Fourth National Communication	Support Nigeria to prepare its BTR1 and combined BTR2 and NC4 according to the MPGs contained in Decision 18/CMA to meet its obligations to the UNFCCC according to the MPGs contained in Decision 18/CMA to meet its obligations to the UNFCCC	NCCC	multilateral	3607.0995	2.404733	2023-2026	Ongoing	Update and improve the GHG inventory to 2022 and 2024, Track and report on NDC Mitigation and Adaptation actions, and Support received and needed, including capacity building needs for period 2021 to 2024
CBIT2	Strengthening the capacity of institutions in Nigeria to implement the transparency requirements of the Paris Agreement	NCCC	multilateral	3000	2.00	2026	Planned	Strengthen capacity of institutions and national experts, enhance capacity of Nigeria to conform to Article 13 of the Paris Agreement, Nigeria will produce transparent reports to the UNFCCC
NDC 3.0	Update NDC including its implementation plan and strategy	NCCC	Not available	750	0.50	2025	Planned	NDC updating, latest info on mitigation path and improved action to meet Article 2 of the Paris Agreement

Carbon registry	Create a carbon registry to track and report on climate projects	NCCC	Not available	TBE	TBE	2025	Planned	NDC updating, latest info on mitigation path and improved action to meet Article 2 of the Paris Agreement, Participate in ITMOs
MRV systems	Strengthen and improve MRV systems to enhance Part's ability to report in compliance with the MPGs	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Improve completeness of GHG inventory	Complete time series with missing years 1990 to 1999	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Improve completeness of GHG inventory	Conduct surveys to collect AD and estimate emissions for subcategories 2.F.1. Refrigeration and air conditioning, 2.F.3. Fire protection, 2.F.4. Aerosols and 2.F.5. Solvent	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Improve completeness of GHG inventory	Conduct surveys to collect AD and estimate emissions for subcategories 2.G.1. Electrical equipment, 2.G.2. SF6 and PFCs from other product use and 2.G.3. N2O from product use	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Develop tool for estimating uncertainties at category level	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect AD on vehicle classes, km run and consumption by vehicle class	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Contact cement producers for plant data to move to Tier2	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Conduct surveys and studies as appropriate to collect AD for moving to Tier 2 for Enteric Fermentation	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Collect detailed information on Rice cultivation to move to Tier 2	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Avail land use maps at 5-year time steps from 2000 to 2020 to build land use change matrix. Estimate carbon stocks in the different carbon pools reflecting the ecological zones of the country and improve information on wood removals and disturbances.	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
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Meeting Article 13 of Paris Agreement	Engage stakeholders to collect subcategory AD for estimating emissions for 1.A.2.b. Non-ferrous metals 1.A.2.d. Pulp, paper and print 1.A.2.e. Food processing, beverages and tobacco 1.A.2.g.viii Other	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect data, estimate emissions for Glass production to enhance completeness	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect data, estimate emissions for 2.D.1. Lubricant use 2.D.2. Paraffin wax use to enhance completeness	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Conduct surveys to collect data, estimate emissions for Petrochemical and carbon black production to enhance completeness	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data, estimate emissions from Composting enhance completeness	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data, estimate emissions for Liming to enhance completeness	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data, estimate emissions from 5.C.1. Waste incineration to enhance completeness	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Investigate if activity is occurring for Pulp and paper 2.H.2. Food and beverages industry	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data and estimate emissions for 1.B.2.a. Oil 1.B.2.b. Natural gas at Tier 2 level	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Engage stakeholder to collect data and estimate emissions for 1.B.1.b. Fuel transformation at Tier 2 level	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Undertake in-depth study to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness Energy industries sub-categories	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness on Other sectors	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness on 3.D.1. Direct N2O emissions from managed soils 3.D.1.a. Inorganic N fertilizers 3.D.1.c. Urine and dung deposited by grazing animals 3.D.2. Indirect N2O Emissions from managed soils	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

Meeting Article 13 of Paris Agreement	Undertake in-depth study on Solid waste disposal to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Undertake in-depth study on Wastewater treatment and discharge to identify responsible sub-category for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Review and strengthen the engagement process and train all key stakeholders to use developed tools and templates for collecting data and information for reporting on Article 4 as per the MPGs	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Review the engagement process and train all key stakeholders to use tools to be developed and templates for collecting data and information for reporting on Article 7 as per the MPGs	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS
Meeting Article 13 of Paris Agreement	Review the engagement process and train all key stakeholders to use developed tools and templates for collecting data and information for reporting as per the MPGs and identify and estimate needs in relation to climate actions	NCCC	Not available	TBE	TBE	2025	Planned	Reporting to UNFCCC, quality information for global stocktake, enhanced implementation of LTLEDS

5. Information to be reported when national communications and biennial transparency reports are submitted jointly every four years

- A. Vulnerability assessment, climate change impacts and adaptation measures¹²
- B. Research and systematic observation
- C. Education, training and public awareness

Not applicable for a BTR.

6. Information on flexibility

Information on flexibility applied is given in Table 6.1. There are 3 flexibility clauses that have been applied namely for the timeseries starting with 1990 and coverage of F-gases. The needs for these improvements have yet to be determined.

Table 6.1 Summary of flexibility applied and time frames for improvements

Sector improvement	Areas of	Identification mechanism	Capacity constraint	Addressing areas of improvement	Timeline
Energy, IPPU, Agriculture, categories LULUCF, Waste	All occurring categories	Flexibility Para. 57 of MPGs	Mandatory, Time series	Complete time series with missing years 1990 to 1999	2030
	2.F. Product uses as substitutes for ODS	Flexibility Para. 48 of MPGs	Mandatory, Scope of gases of inventory	Conduct surveys to collect AD and estimate emissions for sub-categories 2.F.1. Refrigeration and air conditioning, 2.F.3. Fire protection, 2.F.4. Aerosols and 2.F.5. Solvent	2032
IPPU 2	.G. Other product manufacture and use	Flexibility Para. 48 of MPGs	Mandatory, Scope of gases of inventory	Conduct surveys to collect AD and estimate emissions for sub-categories 2.G.1. Electrical equipment, 2.G.2. SF6 and PFCs from other product use and 2.G.3. N2O from product use	2032

7. Improvements in reporting over time

Areas of improvement together with how Nigeria intends to address them, are given in Table 7.1. These areas regrouped under 3 major themes which are: flexibility, key category analysis for Tier 2 estimates of GHG emissions and as identified by the Party. The improvement areas have been prioritized in terms of P1 (highest) to P3 (lowest). Priority 1 areas numbers at 15, P2 at 9 and P3 at 6 for a total of 30.

One critical area of improvement is the strengthening of the MRV systems which will directly impact on other improvement areas particularly with regards collection of data and information. Furthermore, areas where flexibility has been applied are also given the highest priority.

Table 7.1 Areas identified to improve reporting over time

Sector	Areas of improvement	Identification mechanism	Constraint/objective	Addressing areas of improvement	Priority level	Timeline	Needs
Cross cutting	MRV systems	Party	Lack of understanding and engagement / To improve	Strengthen and improve MRV systems to enhance Part's ability to report in compliance with the MPGs	P1	2026	TBE
GHG Inventory							
Energy, IPPU, Agriculture, LULUCF, Waste	All occurring categories	Flexibility Para. 57 of MPGs	Mandatory, Time series	Complete time series with missing years 1990 to 1999	P1	2030	TBE
IPPU	2.F. Product uses as substitutes for ODS	Flexibility Para. 48 of MPGs	Mandatory, Scope of gases of inventory	Conduct surveys to collect AD and estimate emissions for sub-categories 2.F.1. Refrigeration and air conditioning, 2.F.3. Fire protection, 2.F.4. Aerosols and 2.F.5. Solvent	P1	2032	TBE
	2.G. Other product manufacture and use	Flexibility Para. 48 of MPGs	Mandatory, Scope of gases of inventory	Conduct surveys to collect AD and estimate emissions for sub-categories 2.G.1. Electrical equipment, 2.G.2. SF6 and PFCs from other product use and 2.G.3. N2O from product use	P1	2032	TBE
QA/QC plan operationalization	GHG Inventory	Party	Mandatory, Assigning roles and responsibilities and different accuracy and levels to ensure appropriate quality of data	QA/QC procedures are used implemented	P1	2026	TBE
Tool for estimating uncertainties at category level	GHG inventory	Party	Mandatory to report uncertainties at category level	Develop Uncertainty tool to make assessments at category level and train stakeholders on its use	P1	2028	TBE
Energy	1.A.3. Transport - 1.A.3.b. Road transportation	Key category	Improve level of detail of the inventory class	Conduct surveys to collect AD on vehicle classes, km run and consumption by vehicle	P1	2032	TBE
IPPU	2.A. Mineral industry - 2.A.1. Cement production	Key category	Improve level of detail of data the inventory	Contact producers for plant to move to Tier2	P1	2026	TBE

Agriculture	3.A. Enteric fermentation 3.A.1. Cattle 3.A.4. Other livestock (Goats)	Key category	Improve level detail of the inventory	Conduct surveys and studies of as appropriate to collect AD for moving to Tier 2	P1	2032	TBE
	3.C. Rice cultivation	Key category	Improve level of detail of the inventory	Collect detailed information of to move to Tier 2	P1	2028	TBE
LULUCF	4.A Forestland, 4.B Cropland, 4.C Grassland, 4.D Wetlands, 4.E Settlements and 4.F Other Land	Key category	Improve level of detail of the inventory	Avail land use maps at 5-year time steps from 2000 to 2020 to build land use change matrix. Estimate carbon stocks in the different ecological zones of the country and improve information on wood removals and disturbances.	P1	2030	TBE
Energy	1.A.2. Manufacturing industries and construction-1.A.2.b. Non-ferrous metals 1.A.2.d. Pulp, paper and print 1.A.2.e. Food processing, beverages and tobacco 1.A.2.g.viii Other	Key category, Party	Improve level of detail of the inventory	Engage stakeholders to collect subcategory AD for estimating emissions. This of detail of action could possibly also remove this category from the key ones	P2	2030	TBE
IPPU	2.A. Mineral industry - 2.A.3. Glass production	Party	Scope of the data, estimate emissions and inventory enhance completeness	Conduct surveys to collect emissions and inventory enhance completeness	P2	2028	TBE
	2.D. Non-energy products from fuels and solvent use - 2.D.1. Lubricant use 2.D.2. Paraffin wax use	Party	Scope of the data, estimate emissions and inventory enhance completeness	Conduct surveys to collect emissions and inventory enhance completeness	P2	2028	TBE
	2.B. Chemical industry 2.B.8. Petrochemical and carbon black production	Party	Scope of the data, estimate emissions and inventory enhance completeness	Conduct surveys to collect emissions and inventory enhance completeness	P2	2028	TBE
Agriculture	3.G. Liming	Party	Scope of the data, estimate emissions and inventory enhance completeness	Engage stakeholder to collect emissions and inventory enhance completeness	P2	2028	TBE
Waste	5.B Biological treatment of solid waste	Party	Scope of the data, estimate emissions and inventory enhance completeness	Engage stakeholder to collect emissions and inventory enhance completeness	P2	2028	TBE
	5.C. Incineration and open burning of waste 5.C.1. Waste incineration	Party	Scope of the data, estimate emissions and inventory enhance completeness	Engage stakeholder to collect emissions and inventory enhance completeness	P2	2028	TBE
IPPU	2.H. Other 2.H.1. Pulp and paper 2.H.2. Food and beverages industry	Party	Scope of the inventory	Investigate if activity is occurring	P2	2028	TBE
	1.B.2. Oil and natural gas and other emissions from energy production 1.B.2.a. Oil 1.B.2.b. Natural gas	Key category	Improve level detail of the inventory	Engage stakeholder to collect of data and estimate emissions the at Tier 2 level	P2	2028	TBE

Energy	1.B.1. Solid fuels 1.B.1.b. Fuel transformation	Key category	Improve level of detail of inventory	Engage stakeholder to collect of data and estimate emissions the at Tier 2 level	P3	2030	TBE
Energy	1.A.1. Energy industries	Key category	Improve level of detail of the inventory	Undertake in-depth study to identify responsible subcategory for further action relative to engagement of stakeholders and conducting the inventory surveys to collect data, estimate emissions and enhance completeness	P3	2032	TBE
	1.A.4. Other sectors	Key category	Improve level of detail of the inventory	Undertake in-depth study to identify responsible subcategory for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness	P3	2032	TBE
Agriculture	3.D. Agricultural soils 3.D.1. Direct N2O emissions from managed soils 3.D.1.a. Inorganic N fertilizers 3.D.1.c. Urine and dung deposited by grazing animals 3.D.2. Indirect N2O Emissions from managed soils	Key category	Improve level of detail of the inventory	Undertake in-depth study to identify responsible subcategory for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness	P3	2032	TBE
Waste	5.A. Solid waste disposal	Key category	Improve level of detail of the inventory	Undertake in-depth study to identify responsible subcategory for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness	P3	2032	TBE
	5.D. Wastewater treatment and discharge	Key category	Improve level of detail of the inventory	Undertake in-depth study to identify responsible subcategory for further action relative to engagement of stakeholders and conducting surveys to collect data, estimate emissions and enhance completeness	P3	2032	TBE
Tracking of the NDC							
Mitigation actions	Data and information collection	Party	Improve data and information collection from all key stakeholders	Review and strengthen the engagement process and train all key stakeholders to use developed tools and templates for collecting data and information for reporting as per the MPGs	P1	2028	TBE
Tracking of Adaptation climate actions							

Information on adaptation actions	Data and information collection	Party	Improve data and information collection from all key stakeholders	Review the engagement process and train all key stakeholders to use tools to be developed and templates for collecting data and information for reporting as per the MPGs	P1	2028	TBE
Tracking of Support needed and received							
Support received and needed	Data and information collection	Party	Improve data and information collection from all key stakeholders	Review the engagement process and train all key stakeholders to use developed tools and templates for collecting data and information for reporting as per the MPGs and identify and estimate needs in relation to climate actions	P1	2028	TBE

8. Any other information the Party considers relevant to the achievement of the objective of the Paris Agreement, and suitable for inclusion in its biennial transparency report

No additional information.

9. Annexes as outlined in the annex to decision 18/CMA.1

9.1. Annex I: Technical annexes for REDD+

9.2. Annex II: Common reporting tables for the electronic reporting of the national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases

Submitted on a stand-alone basis and available on the UNFCCC website at <https://unfccc.int/first-biennialtransparency-reports>.

9.3. Annex III: Common tabular formats for the electronic reporting of:

Information necessary to track progress in implementing and achieving nationally determined contributions under Article 4 of the Paris Agreement.

The CTFs are submitted separately and are available on the UNFCCC website (<https://unfccc.int/firstbiennial-transparency-reports>).

Information on financial, technology development and transfer and capacity- building support needed and received under Articles 9–11 of the Paris Agreement.

The CTFs are submitted separately and are available on the UNFCCC website (<https://unfccc.int/firstbiennial-transparency-reports>).

9.4. Annex IV: Information in relation to the Party's participation in cooperative approaches, as applicable

Nigeria is in the process for transitioning from the Kyoto Protocol to the ITMO framework which is yet to be completed. When the transitioning will be completed and Nigeria will resort to Article 6, then emissions traded will be discounted from the national achievements of its NDC.

Nigeria has one project under the Programme of Activity which it intends to use under the ITMO framework. Details pertaining to this project are given in the table below.

GS ID of programme	GS834		
Title of programme	Improved Cooking Stoves for Nigeria Programme of Activities		
Monitoring Agency	Gold Standard		
Name and GS ID of fully validated CPA/VPAs	CPA # 1 Improved Cooking Stoves for Nigeria, GS 1162 CPA # 2 Improved Cooking Stoves for Nigeria, GS 1352 CPA # 3 Improved Cooking Stoves for Nigeria, GS 1353 CPA # 4 Improved Cooking Stoves for Nigeria, GS 2437 Improved Cooking Stoves for Nigeria Programme of Activities CPA # 5, GS2438		
Link for monitoring reports	https://registry.goldstandard.org/creditblocks/issuances?q=GS834&page=1		
Issued VERs	Credits	2021	2022
	CPA1	4795	-
	CPA2	6045	3387
	CPA3	5592	2795
	CPA4	4804	2691
	CPA6	-	-
	Total	21,236	8,873
Not issued VERs	Credits	2021	2022
	CPA1	-	-
	CPA2	-	288
	CPA3	-	-
	CPA4	-	3017
	CPA6	-	-
	Total	-	3305