Kano State Government

Kano State Climate Change Policy

January 2025

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FOREWORD

Climate change is one of the most pressing challenges of our time, with far-reaching environmental, social, and economic consequences. Addressing its impacts requires a comprehensive, multi-sectoral approach integrating mitigation and adaptation strategies within a dynamic policy framework. Recognising this, the Kano State Government is committed to proactive climate action to safeguard sustainable development and build resilience across all sectors.

Since adopting the National Climate Change Policy and Response Strategy (NCCPRS) in 2012, the global discourse on climate change has evolved, leading to new initiatives and commitments. Nigeria's ratification of the 2015 Paris Agreement underscores the country's commitment to a low-carbon economy and climate-resilient development. Kano State aligns with these national and global efforts by developing a policy framework tailored to its unique environmental and socio-economic context.

The Kano State Climate Change Policy provides a strategic roadmap for climate action, outlining sectoral and cross-sectoral policy measures to guide the state's response. It is the result of an inclusive and participatory process involving government institutions, private sector actors, development partners, civil society organisations, and local communities. This collaborative approach ensures that the policy reflects the realities on the ground while integrating both immediate and long-term adaptation and mitigation strategies.

The successful implementation of this policy will require strong institutional coordination, sustained commitment, and financial and technical support from all stakeholders, including the private sector and multilateral development partners. Through collective action, Kano State aims to enhance resilience, reduce vulnerabilities, and contribute to national and global climate goals under the United Nations Framework Convention on Climate Change (UNFCCC).

The Kano State Government is confident that this policy will serve as a vital tool in shaping a sustainable and climate-resilient future for the state.

ACKNOWLEDGEMENT

The Kano State Government extends its deepest appreciation to all individuals, organisations, and institutions that played a crucial role in the development and validation of the Kano State Climate Change Policy. This policy reflects a collective commitment to addressing climate challenges and promoting environmental sustainability across the state.

We recognise the leadership of the Ministry of Environment & Climate Change and the coordinating role of the Kano State Watershed, Erosion, and Climate Change Management Agency in the policy development process. Special appreciation goes to various Ministries, Departments, and Agencies (MDAs), Academic institutions, Non-Governmental Organisations (NGOs), Civil Society Organisations (CSOs), and the Media for their active participation, technical contributions, and commitment to ensuring the policy's inclusivity and effectiveness.

The Kano State Government is also grateful for the valuable support and collaboration of development partners – the Foreign Commonwealth and Development Office's (FCDO) Partnership to Engage, Reform & Learn (PERL), the Partnership for Agile Governance & Climate Engagement (PACE), and the United Nations Children's Fund (UNICEF) who provided technical and strategic assistance through the policy formulation process.

Sincere appreciation is extended to the National Council on Climate Change (NCCC) for their technical review and contribution to the policy document. Appreciation is also extended to all stakeholders involved in the consultation and review processes, whose contributions helped refine and strengthen the policy framework. The input of experts who provided data, technical advice, and insights is also highly valued.

Finally, the Kano State Government acknowledges the collective effort of all those who contributed to this policy, recognising it as a significant step towards a coordinated response to climate challenges and a more sustainable future for the state.

Acronyms

Acronym	Definition
ACReSAL	Agro-Climate Resilience in Semi-Arid Landscapes
ADB	Asian Development Bank
AF	Adaptation Fund
AfDB	African Development Bank
AFOLU	Agriculture, Forestry, and Other Land Use
AIDS	Acquired immunodeficiency syndrome
BMGF	The Bill and Melinda Gates Foundation
CBO	Community-Based Organisations
CCA	Climate Change Act
CCF	Climate Change Fund
CIDA	Canadian International Development Agency
CNG	Compressed Natural Gas
CSO	Civil Society Organisations
DBN	Development of Nigeria
DCC	Department of Climate Change
DMO	Debt Management Office
DSA-DMS	Debt Sustainability Analysis & Debt Management Strategy
EBRD	European Bank for Reconstruction and Development
ERGP	Economic Recovery and Growth Plan
ETP	Energy Transition Plan
EV	Electronic Vehicles
FBO	Faith Based Organisations
FCDO	Foreign, Commonwealth & Development Office
FEC	Federal Executive Council
FG	Federal Government
GCCI	Global Climate Change Initiative
GCF	Green Climate Fund
GEF	Global Environment Facility
GDP	Gross Domestic Product
GHG	Green House Gases
HFC	Hydro-Fluoro Carbons
ICCC	Inter- Ministerial Committee on Climate Change
ICT	Information and Communication Technology
IPPU	Industrial Processes and Product Use
ITMO	Internationally Transferred Mitigation Outcomes
IWRM	Integrated Water Resources Management
KfW	Kreditanstalt für Wiederaufbau ("Credit Institute for Reconstruction")
KIF	Danish Climate Investment Fund

Acronym	Definition
KNARDA	Kano State Agricultural and Rural Development Authority
KNSG	Kano State Government
LAN	Local area network
LDCF	Least Developed Countries Fund
LGA	Local Government Areas
LTV-LEDS	Long Term Vision – Low Emissions Development Strategy
MANR	Ministry of Agriculture and Natural Resources
MDA	Ministries, Departments & Agencies
MoECC	Ministry of Environment & Climate Change
MoF	Ministry of Finance
MoPB	Ministry of Planning & Budget
MPI	Multidimensional Poverty Index
MTEF	Medium-Term Expenditure
MTNDP	Medium Term National Development Plan
MTSS	Medium-Term Sector Strategies
MWT	Megawatt
NAF	Nigeria's National Adaptation Framework
NARF	National Agricultural Resilience Framework
NASPA-CCN	National Adaptation Strategy Plan of Action on Climate Change for Nigeria
NATIP	National Agricultural Technology and Innovation Policy
NCCC	National Council for Climate Change
NCCRPS	National Climate Change Policy And Response Strategy
NDC	Nationally Determined Contributions
NEWMAP	Nigeria Erosion and Watershed Management Project
NGGW	National Great Green Wall
NGO	Non-Governmental Organisations
NIRSAL	Nigeria Incentive-Based Risk Sharing System for Agricultural Lending
NITDA	National Information Technology Development Agency
NW	North West
OSAG	Offices of the State Accountant General
PACE	Partnership for Agile Governance & Climate Engagement
PDMO	Public Debt Management Office
PERL	Partnership to Engage, Reform and Learn
PPP	Public-Private Partnerships
PWD	People With Disabilities
SDG	Sustainable Development Goals
SLCP	Short-Lived Climate Pollutants
SPMU	State Project Management Unit
TCIF	The Challenge Initiative Foundation
UKAID	UK Department for International Development

Acronym	Definition
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation & Hygiene
WECCMA	Watershed, Erosion, and Climate Change Management Agency

1. BACKGROUND

1.1 Introduction

Nigeria, like many parts of the world, is experiencing climate change. In particular, the country is becoming warmer. Studies show that annual and seasonal timescales indicate a significant positive temperature increase in Nigeria. They show that mean temperatures have been consistently increasing throughout the country in the last five decades and have been rising significantly since the 1980s, with a change of 1.01°C (0.52 to 1.5°C) in the linear warming for the period 1951 - 2005. The linear warming for the same period for 30-year averages on a decadal slice further revealed positive changes in temperature by an average of 0.2°C/decade.

The mean annual variability and trend of rainfall over Nigeria in the last few decades depict several inter-annual fluctuations responsible for dry and wet years or extreme climate events such as droughts and floods in many parts of the country and at different times. The year 2019 has been a blockbuster one for extreme weather with persistent record-breaking floods in many parts of the country. The unusual rains also threaten a good harvest. More worrisome is the increasing knowledge that the country will be subject to consistent changes in rainfall and temperature conditions, particularly towards the end of the century.

A recent analysis of anticipated climatic trends, as captured in the Third National Communication, indicates that between 2050 to 2070, the minimum temperature increase could range from 1.48°C to 1.78°C and the maximum temperature increase of about +3.08°C to +3.48°C compared to the baseline of 1990. A general increase in the number of days of rain and days with extreme rainfall events that may generate floods is projected over most ecological zones of the country except in the northeast Sahel zone, where the scenario analysis suggests fewer extreme events related to rainfall and flooding.

Climate change is a complex environmental problem because of its long-term uncertain timeframe, scales of occurrence, differential impacts, and vulnerabilities, as well as equity and justice within the global power asymmetries. For instance, the impacts of climate change are already driving people back into poverty and undermining growth. Beyond recognising the potentially devastating effects of climate change on the socio-economic and environmental development of the country and implications for the well-being of the populace, the Kano State intends to strengthen its management of climate-related development challenges through an appropriate policy and institutional arrangements that will not only mainstream climate change into its development priorities but also encourage the implementation of mitigation and adaptation actions at all levels of governance for climate compatible sustainable development.

In 2012, the Federal Executive Council (FEC) approved a comprehensive policy on climate change, named *The Nigeria Climate Change Policy Response and Strategy (NCCPRS)*. The overarching objective of the policy is to promote low-carbon, high-growth economic development and build a climate-resilient society through the deployment of the following broad strategies:

i. Implement mitigation measures that will promote low carbon as well as sustainable and high economic growth;
ii. Enhance national capacity to adapt to climate change;
iii. Raise climate change-related science, technology and R&D to a new level that will enable the country to better participate in international scientific and technological cooperation on climate change;
iv. Significantly increase public awareness and involve private sector participation in addressing the challenges of climate change; and
v. Strengthen national institutions and mechanisms (policy, legislative and economic) to establish a suitable and functional framework for climate change governance.

Through the 2012 Policy, Nigeria intends to foster sustainable development through national initiatives that strengthen the country's strategies on climate change preparedness, adaptation and mitigation across all segments of society including vulnerable groups. The Policy has been guiding policy decisions and led to action in responding to climate change in the country. Since the development of the NCCPRS, the global discourse on climate change has led to the adoption of new initiatives that have been domesticated to guide national response to reducing the impact and adapting to the challenges of climate change.

In particular, a major basis for Nigeria's effective response to the challenge of climate change is the implementation of the 2015 Paris Agreement which the country ratified in March 2017. This Agreement constitutes an important milestone in promoting the transition to a low-carbon economy. Thus, this Kano State Policy on Climate Change aims to define a new holistic framework to guide the State's response to the development challenge of climate change. As a framework document, it prescribes sectoral and cross-sectoral strategic policy statements and actions for managing climate change within the country's pursuit of climate-resilient sustainable development.

1.2 Rationale

Climate change is perhaps the biggest challenge facing humanity. It is complex and dynamic and requires multi-dimensional and multi-sectoral mitigation and adaptation initiatives within a dynamic policy framework to properly tackle it. Kano State is particularly vulnerable to the effects of climate change due to its location in the Sahel savanna region of northwest Nigeria. The state faces multiple climate-related challenges, including extreme temperatures, with daytime highs reaching up to 41°C, which has exacerbated the incidents of drought and water scarcity, flooding during rainy seasons and desertification and land degradation. These climate impacts pose significant risks to the state's agriculture, public health, and overall socio-economic

development[1]. The review of the NCCPRS provides an opportunity to look at the following within the context of the state's vigorous effort to address the challenge of climate change:

i. the opportunities and challenges of reducing emissions on a sector-by-sector basis;
ii. the required adaptation strategies given the growing impact of climate change, particularly those increasing the frequency and intensity of extreme weather events;
iii. the integration of climate change into the national development process for effective response to the challenge;
iv. the role and operation of innovative financing instruments like the Green Bonds in emissions reduction and climate change adaptation;
v. the opportunities in emerging global climate finance mechanisms in supporting the country to meet its emissions targets;
vi. the role of research, development and innovation; and
vii. the imperative for good climate change governance.

1.3 The Policy Development Process

The process used in developing the Kano State Climate Change Policy involved close engagements with ministries, departments and agencies within Kano State, the Legislature, Academia, Non-Governmental Organisations (NGOs), women's groups, People with Disability (PWDs), traditional institutions, media, and the private sector; through three workshops, strategic consultations with key stakeholders using different templates for different levels of engagement. The purpose is to generate inputs from all sections of society that will be impacted by climate change. The review was monitored and informed by international climate policy and discourse developments. It also builds on parallel processes, including the Nationally Determined Contribution (NDC) and the National Policy on Climate Change, to derive policy statements that will guide their successful implementation. In addition, the policy development process took cognisance of the fact that Kano is a signatory to the North-West (NW) zone declaration on climate change[2]. This draft Kano State Policy on Climate Change rests on the combined thrust of these instruments.

1.4 Linkages with Other Policies and Strategies

Kano State has adopted some policies, strategies and action plans related to addressing the state's development challenges of climate change, as well as integrating environment and climate change management into the socioeconomic development activities of the state. The main development plans and enacted bills provide the platform to guide the development of a set of strategies and priorities related to the pursuit of climate-resilient and climate-compatible initiatives. They include:

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[1] https://pmc.ncbi.nlm.nih.gov/articles/PMC9772740/

[2] Kano Declaration on Climate Change and Environment from the North West Commissioners Summit on Climate Change held on February 29, 2024

i. The Kano State Development Plan III;
ii. The Kano State Policy on Environment;
iii. The Kano State Environmental Population Bill;
iv. The Kano State Forestry Bill;
v. Debt Sustainability Analysis & Medium-Term Debt Management Strategy (DSA-MTDS) Framework;
vi. Kano State Water Supply Policy; and
vii. Kano State Agriculture Policy
viii. Kano State Gender Policy
ix. Kano State Food and Nutrition Policy

These policies and framework documents with the responsible Ministries, Departments and Agencies (MDAs) are outlined in Table 1.

Table 1: Kano State Climate Relevant Policy documents

Kano State Climate Relevant Policies	Responsible Entity
Kano State Development Plan III	Ministry of Planning and Budget
Kano State Policy on Environment	Ministry of Environment and Climate Change
Kano State Environmental Population Bill	Ministry of Environment and Climate Change
Kano State Forestry Bill	Ministry of Environment and Climate Change
Debt Sustainability Analysis & Medium-Term Debt Management Strategy (DSA-MTDS) Framework	Public Debt Management Office, Ministry of Finance and Economic Development
Kano State Water Supply Policy	Ministry of Water Resources
Kano State Agriculture Policy	Ministry of Agriculture and Natural Resources
Kano State Gender Policy	Ministry of Women and Social Development
Kano State Food and Nutrition Policy	Ministry of Health, Ministry of Agriculture and Natural Resources

Other policies and strategies with a direct and indirect bearing on the climate change challenge include federal policy documents. While taking on guidance from the state policy documents, it is meaningful to ensure alignment with relevant federal policies as they apply to the state.

Table 2: Federal Policy documents

Federal Climate Relevant Policies	Responsible Entity
Nationally Determined Contributions	Federal Government of Nigeria with executing authority retained with either the Department of Climate Change (DCC) or National Council for Climate Change (NCCC)
Long Term Vision – Low Emissions Development Strategy (LTV-LEDS)	This is a requirement of the United Nations Framework Convention on Climate Change (UNFCCC) of signatory countries. The French Development Agency supported this.
Medium Term National Development Plan (MTNDP)	The successor plan to the Economic Recovery and Growth Plan (ERGP) has a life till 2025 and a funding target of N348.1trillion, with an expected contribution by the states of N20trilion. It has climate themes and targets but does not explicitly focus on climate
Climate Change Act (CCA)	The Climate Change Act signed into law by the President in 2021 established in the NCCC and ultimately the Climate Change Fund (CCF)
Energy Transition Plan (ETP)	This was launched by the former Vice President, Dr Yemi Osinbajo, before leaving office and is an energy focused plan with a funding target of USD410bn by 2060
National Adaptation Action Plan	Federal Ministry of Environment
Nigeria Green Bond Program	Federal Ministry of Finance (Debt Management Office {DMO}), Federal Ministry of Environment (DCC)
National Environmental Policy	Federal Ministry of Environment, National Council for the Environment
National Adaptation Strategy Plan of Action on Climate Change for Nigeria (NASPA-CCN)	Federal Ministry of Environment with the support of the Canadian International Development Agency (CIDA), which is now Global Affairs Canada, as part of its support to the Building Nigeria's Response to Climate Change
Nigeria's National Adaptation Framework (NAF)	The DCC, Federal Ministry of Environment
National Agricultural Resilience Framework (NARF)	Federal Ministry of Agriculture & Rural Development
National Agricultural Technology and Innovation Policy (NATIP)	Federal Ministry of Agriculture & Rural Development
Nigeria Digital Agriculture Strategy (2020 – 2030)	The National Information Technology Development Agency (NITDA) under the Federal Ministry of Communications and Digital Economy
National Climate Change Policy (2021-2030)	NCCC/DCC
National Action Plan on Gender and Climate Change	NCCC/DCC

1.5 Policy Outline

The Kano State Climate Change Policy is subdivided into seven sections. Section 1 provides a general background on climate change in Kano State, the rationale for the policy review, the approach adopted, and the link between the Policy and other related national policies, strategies and plans. Section 2 puts climate change in the Kano context with emphasis on the state's vulnerability and impact, as well as policy, legal and institutional responses to the challenges. The relevance of the Paris Agreement in influencing the national response to climate change is highlighted in the section. The vision, objectives and guiding principles for the Policy are discussed in Section 3. Policy statements that would accelerate the needed process and implementation of climate change mitigation initiatives are made in Section 4, while Section 5 elaborates on the key policy directions for adaptation to climate change in the country. Section 6 addresses enabling conditions necessary for actualising the vision of ensuring a climate-resilient economy. Section 7 elaborates on the imperative for functional means of implementation that can propel the state on the path of ensuring climate-resilient compatible and sustainable development.

2. KANO STATE CONTEXT

Location: Kano State lies between latitude 130N in the North and 110N in the South and longitude 80W in the West and 100E in the East and covers approximately 20,760 sq km or 2.2% of Nigeria's land mass. It is bordered by four States: Jigawa, Kaduna, Bauchi and Katsina, within the NW geo-political zone.

Climate and Topography: Kano State is geographically situated between latitudes 10°30'N and 12°38'N and longitudes 7°45'E and 9°29'E, positioning it within the Northwest region of Nigeria (Figure 1). This location places Kano within the Köppen Aw climate zone, characterised as a Tropical Continental Climate, which exhibits distinct wet and dry seasons. The rainy season typically extends from mid-May through mid-October, bringing significant rainfall to the region, while the dry season spans from mid-October to mid-May. Annual rainfall varies across Kano State, with the northern areas receiving approximately 800 mm annually, whereas the southern parts of the State experience slightly higher rainfall, averaging around 1100 mm. These rainfall distributions are sufficient to support Sudan Savannah vegetation, which consists mainly of grasses interspersed with drought-resistant trees and shrubs, well-adapted to the region's climatic conditions (Abaje et al., 2014). The predominant vegetation type also reflects the area's semi-arid environment, which is influenced by alternating seasonal climate patterns and limited annual precipitation.

Temperature plays a significant role in shaping the climate and vegetation of Kano State. The mean annual temperature is approximately 26°C, although temperatures fluctuate seasonally. During the dry season, particularly in the months of March and April, daytime temperatures can soar above 40°C, influenced by the dry, warm Harmattan winds from the Sahara. Conversely, in the wet season, temperatures moderate somewhat, with increased humidity providing intense heat of the dry months.

These climatic conditions not only influence the region's agriculture, water resources, and biodiversity but also have implications for environmental management practices. Understanding the rainfall and temperature patterns is critical for effective planning in agriculture, water resource management, and climate adaptation strategies, especially in light of climate variability and changing precipitation patterns affecting the State.

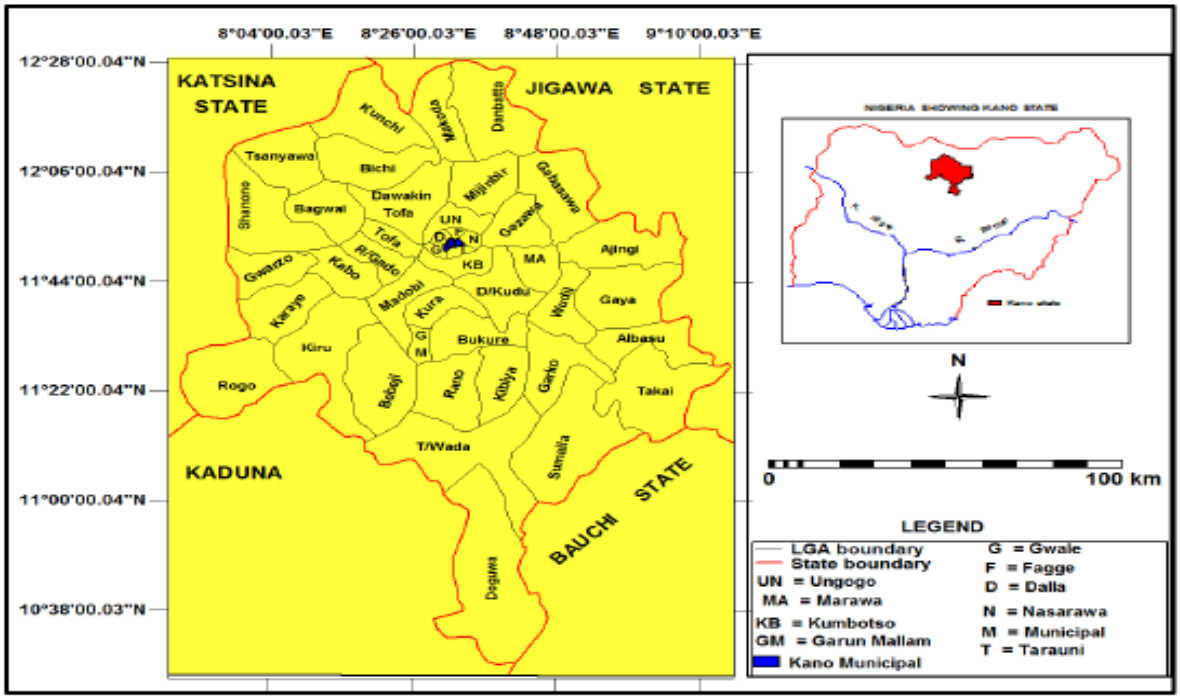


Figure 1: Abaje, I.B., Ndabula, C. and Garba, A.H. (2014) Is the Changing Rainfall Patterns of Kano State and Its Adverse Impacts an Indication of Climate Change? European Scientific Journal, 10, 192-206.

Administration: Administratively, Kano State is one of Nigeria's 36 states and was created on May 27, 1967 (by Decree No. 14 of 1967) and formally came into being on April 1, 1968. Before that, the Northern Nigeria Regional Government administered Kano [present-day Kano and Jigawa states] as a province. Today, the State comprises 44 local government councils which are divided into 40 state constituencies, grouped into 24 federal constituencies and three senatorial districts. Per the 1999 constitution of the Federal Republic of Nigeria, the State government consists of three arms: the executive, the legislature and the judiciary. The executive powers are vested on and exercised by an elected governor, who is assisted by a deputy governor similarly elected through an appointed executive council chaired by the Governor and the Deputy Governor, with a Secretary to the State Government, a Head of the State Civil Service, and Commissioners as members. Currently, the State Civil Service is made up of 19 ministries and a range of extra-ministerial departments, agencies and parastatals.

Population dynamics: Kano State is one of the most populous of Nigeria's 36 states. The current (2020 projected) population is estimated at slightly less than 15 million, up from 11 million in 2010. Population growth has been rapid: 3.6 million (62%) more people in 2006 than in 1991 and 5.2 million (90%) more in 2010 compared to 1991. The annual rate of growth averaged 3% (1991-2006), 4% (2006-2010) and 3.2% (2015-2020).

2.1 Kano's Vulnerability to Climate Change

This section provides context for the state's vulnerabilities, and as a result, the rationale for a policy document to guide activities that will address the impact. Kano is located in the Sudano-Sahelian zone of Nigeria with:

- Deteriorating ecological base linked to increasing drought;
- Heavy dependence of the economy, and individual livelihoods, on climate;
- Poverty status of a significant proportion of the State's large population;
- Rapid population growth;
- Growth rate of 2.9%, a density of 649 people per hectare compared to a national average of 235 and a world average of 442. Within Kano – a closed settled zone population density is over 1000 per hectare;
- Poor infrastructure;
- Urbanisation – the urban environment creates its unique micro-climate e.g., urban heat island effect and flood risks;
- Inadequate in defined policies;
- Limited financial resources;
- Limited organisational and technical capacity;
- Low level of awareness of climate change issues.

Further to the above, the state's vulnerability varies spatially based on isohyets, with three distinct zones identified: Zone 1 (1300-950 mm), Zone 2 (900-750 mm), and Zone 3 (700-450 mm). The state has a significant urban population of 37% (of the state's total population) with a rapid growth rate exceeding 6.5% per year.

Also;

- Climate change uniquely affects women and vulnerable groups due to their roles in agriculture, food security, water collection; and
- There is reduced access to essential resources affecting nutrition and food availability.

2.2 Climate Change Issues in Kano State

Kano State is home to over 16 million residents, with projections suggesting it could surpass 30 million by 2030. The state is a key contributor to Nigeria's grain and vegetable production and plays a crucial role in the livestock value chain, indirectly supporting over 60 million livelihoods. However, climate change is causing complex disruptions in land productivity and ecosystems, affecting more than 20% of Nigeria's food system and exacerbating food insecurity and persistent poverty.

Approximately half of Kano's cultivable land is classified as arid or semiarid, with 65% of cropland and 30% of pastureland facing degradation, leading to decreased crop yields and ongoing food insecurity. Currently, 20-35% of pristine land in the state suffers from some form of degradation, and this is expected to worsen under various emission scenarios. Soil erosion is a significant factor in land degradation, resulting in the loss of organic carbon and reduced land productivity.

The state of Nigeria's Environment report identifies the impacts of climate change and potential adaptation strategies over a 50-year horizon, focusing on sectors such as human health, maize production, plant biodiversity, water resources, rangelands, and animal husbandry. In Kano State, health issues related to increased temperatures and altered rainfall patterns include a rise in strokes, skin rashes, dehydration, and non-melanoma skin cancers. Climate change may also indirectly increase water-borne diseases.

Water resources in Kano are already characterised by high variability and unpredictability in rainfall. The availability of water is particularly sensitive to changes in precipitation, and ongoing desertification could be worsened by climate change. Shifts in the timing and intensity of storms may also alter flooding patterns.

A significant portion of Kano's land consists of semi-natural ecosystems that provide rangelands for large herbivores. Modeling indicates that these areas may experience general acidification, particularly where they are already marginal, adversely affecting fodder production. About 70% of grain production in the state is derived from maize and Guinea corn, with crop yield models predicting a potential 40% decrease in maize production under hotter, drier conditions. Specialty crops grown in favorable areas may also be at risk due to changes in rainfall and temperature. An increase in pests and diseases poses a threat to agriculture, while invasive plant species could become more problematic.

The forestry sector in Kano, situated in a fragile environment, is also sensitive to climate change. Modeling suggests that optimal areas for major tree species will shift, affecting the costs of planting in less suitable regions. Biodiversity is vital for maintaining ecosystem functions and supporting subsistence livelihoods. Climate change modeling predicts a potential reduction of up to 55% in the area covered by current biomes over the next 50 years. Most forest reserves in Kano have already been degraded, with green spaces in the metropolis transformed for other uses.

Climate change and population growth have already reduced land productivity. For example, in 1961, there were 0.51 hectares of arable land per person; by 1990, this had decreased to 0.29 hectares, and by 2010, to 0.21 hectares. Projections indicate this could shrink to 0.17 hectares by 2020, 0.13 by 2030, 0.10 by 2040, and 0.08 by 2050. The impacts of climate change in Kano are often interconnected and difficult to separate. For instance, droughts can negatively impact food production and human health, while flooding can lead to disease outbreaks and damage to ecosystems and infrastructure.

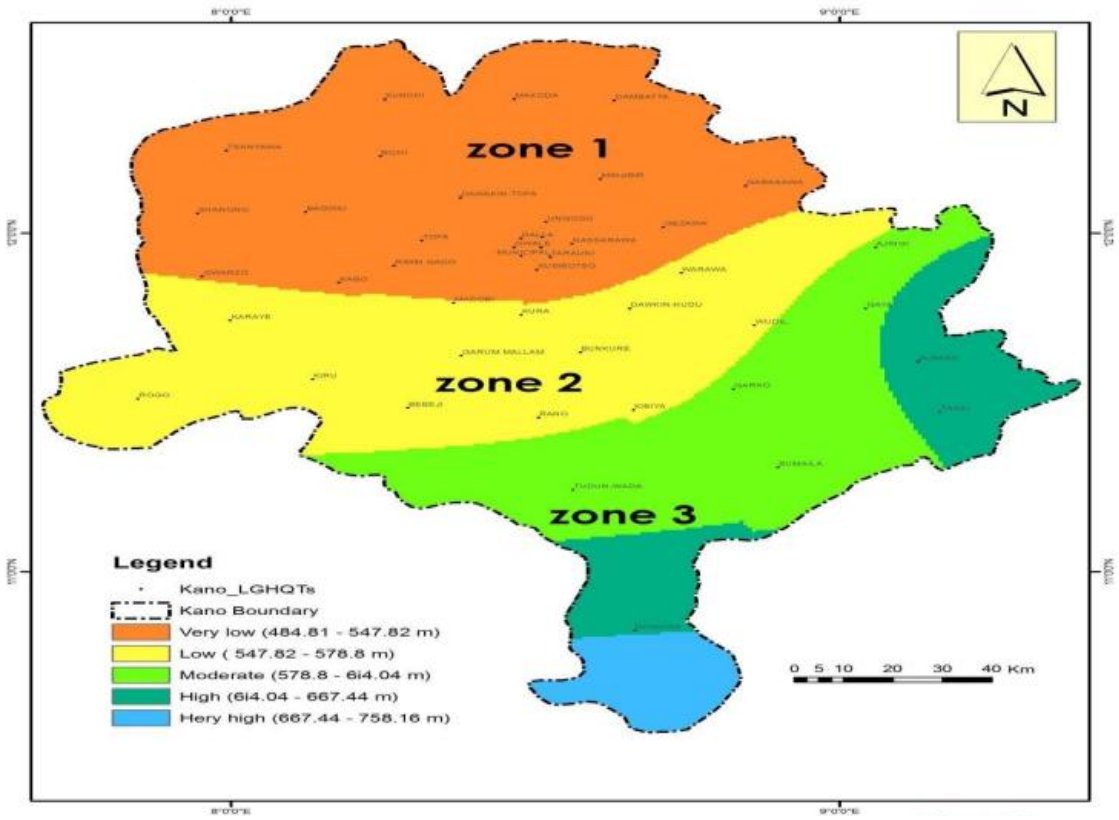
The effects of climate change are uneven across the state, varying even within communities. Long-standing socioeconomic disparities make underserved groups—who often face the highest exposure to risks and have the fewest resources to adapt—more vulnerable. Collectively, these challenges threaten livelihoods and could lead to serious consequences for food and civil security, driven by competition for scarce resources such as arable land, clean water, and

habitable land, which may become increasingly limited and costly due to ongoing climate disruptions.

Since the 1980s, temperatures have increased significantly above normal, with particularly high readings recorded in 1973, 1987, and 1998.

Climate change or its impact though global, is not linear. Between 1941 and 1970, late onsets of rains occurred in only a few areas of Kano State. However, from 1971 to 2000, late set and early cessation of rains had spread to most parts of the state, shortening the length of the rainy season. The duration and intensities of rainfall have decreased in the last three decades. There has been a 25% decrease in precipitation on average in the last 30 years. There has been temperature increases of approximately 0.2 to 0.3°C per decade. The minimum temperature has increased slightly faster than the maximum temperature, resulting in a smaller temperature range. Climate change is expected to continue to increase rainfall variability, flooding occurs alongside droughts arising from a decline in precipitation and rise in temperature. The shifts in rainfall patterns affect both the quantity and distribution. Loss of vegetation has led to the hardening of the soil surface, increased water runoff and consequently reduced groundwater recharge. The frequency and intensity of droughts are on the increase. Figure 2 illustrates the state's ecological zones demonstrating the more vulnerable sections in the state.

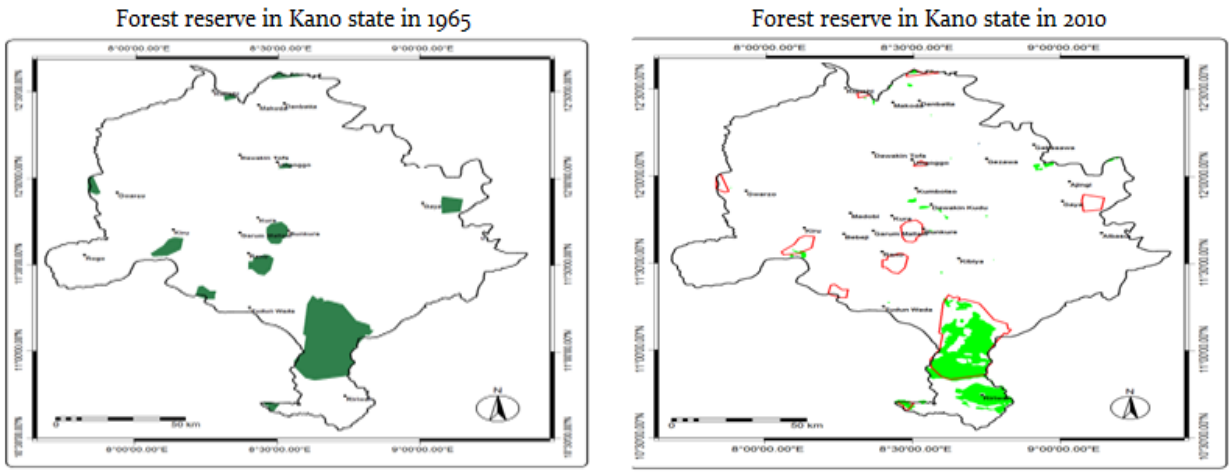
Figure 2: Ecological Zones of Kano State



Source: Nabegu, 2017

Figure 3 illustrates the change in the state's forest reserves between 1965 and 2010 highlighting the vulnerability in the Zone 1 area.

Figure 3: Changes in Forest Reserves in Kano State



Source: Nabegu, et. al., (2013a)

2.3 Overview of Kano State Response to Climate Change

In 2022, the Kano State Government (KNSG) signed the Kano State Watershed, Erosion, and Climate Change Management Agency (WECCMA) Bill into Law. This was done to institutionalise the gains from the former World Bank Nigeria Erosion and Watershed Management Project (NEWMAP). Other bills were also signed into law like the Kano State Environmental Pollution Control Law 2022 to enforce compliance with environmental laws and regulations while the state partnered with the National Great Green Wall (NGGW) Project to provide funds and lands for establishing community tree nurseries and plantations.

Kano State also provided the sum of ₦500 million counterpart funds and an office complex for a State Project Management Unit (SPMU) – a requirement for participating in the new World Bank Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) project. The state had embarked on several projects such as producing 1,000,000 seedlings for Tree-Planting Campaigns, establishing industrial waste management facilities in the popular industrial estates (Challawa, Sharada and Bompai), constructing water conservation structures, minor irrigation facilities and conducting air quality monitoring exercises, among others.

The government expanded the mandate of the Ministry of Environment and renamed it the Ministry of Environment & Climate Change (MoECC) in 2023, appointed a substantive Executive Secretary for the WECCMA and appointed a Coordinator for the ACReSAL project. Given this, the state considered it necessary to have a Climate Change Policy and Strategic Plan towards

improving the coordination and implementation of sustainable climate adaptation, resilience, and mitigation actions.

Kano State Government therefore requested technical assistance from the Partnership to Engage, Reform and Learn (PERL) programme, succeeded by the Partnership for Agile Governance and Climate Engagement (PACE) programme and UNICEF through the KN-WECCMA and MoECC and to develop both documents with key input from all stakeholders. This is to provide the state with a framework to guide the institutionalisation of the annual planning, resourcing, and coordination of the activities of all stakeholders towards achieving its objective around climate change action and management.

2.4 Emerging Issues

Kano State was part of the North West Commissioners Summit on climate change held on February 29, 2024, supported by Surge Africa. At this summit, a 'Kano Declaration on Climate Change and Environment' was issued and adopted. Key themes of this declaration form part of this climate change policy document.

- **CONSERVATION OF BIODIVERSITY**: Restoration, protection and conservation of our biodiversity contributes to the resilience of our ecosystems and helps maintain the essential services they provide. This commitment involves the protection and sustainable management of the diverse range of natural resources and ecosystems within the region. It may include the establishment and enforcement of conservation areas, the promotion of sustainable land use practices, a sustainable nature-based farm system, and efforts to combat illegal resource exploitation i.e., illegal tree felling, sand and mineral resource mining, water exploration and wildlife poaching.
- **RURAL INTEGRATION**: Rural integration focuses on bridging the urban-rural divide by promoting balanced development. It involves initiatives that improve infrastructure, access to education, healthcare, and economic opportunities in rural areas. This commitment aims to create a more equitable and sustainable development model, ensuring that the benefits of progress are shared across urban and rural communities.
- **COLLABORATION AND PARTNERSHIPS**: Building collaborative networks with various stakeholders, including neighbouring governmental bodies, non-governmental organisations (NGOs), private enterprises, international development agencies, CSOs, traditional and religious institutions and most importantly the local communities. This commitment fosters a multi-sectoral approach to addressing climate change, ensuring that diverse perspectives, resources, and expertise are leveraged for effective and comprehensive solutions.
- **ADAPTATION FINANCE**: Acknowledging the financial challenges associated with adapting to climate change, this commitment involves mobilising and allocating funds to support adaptation measures. It may include establishing a State Climate fund, securing grants or loans, floating green bonds, accessing climate funds and implementing financial mechanisms to execute adaptation projects and assist vulnerable communities in

adapting to the impacts of climate change, such as flooding, drought, deforestation, extreme heat, and changing agricultural conditions.

- **SUSTAINABLE DEVELOPMENT**: Embracing development practices that meet the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development integrates economic, social, and environmental considerations This commitment entails fostering economic growth, social equity, and environmental stewardship in a balanced and harmonious manner.
- **CLIMATE SECURITY**: Recognising the security implications of climate change, this commitment involves addressing climate-related risks that may impact national and regional security. It encompasses measures to prevent conflicts related to resource scarcity, displacement due to climate-induced events, and ensuring the resilience of critical infrastructure in the face of changing climate conditions.
- **MONITORING AND REPORTING**: Implementing a robust system for monitoring the progress of climate-related initiatives and regularly reporting on the outcomes. This commitment ensures transparency, accountability, and informed decision-making. It involves tracking key indicators, evaluating the effectiveness of implemented measures, and making data-driven adjustments to climate policies.
- **GHG REDUCTION TARGET:** Aim for between 30% - 50% reduction in greenhouse gas emissions by 2030 compared to a **business-as-usual scenario**. We should try to mirror the 2050 Long Term Vision for Nigeria. This ambitious target would demonstrate Kano State's commitment to exceeding national targets and contributing significantly to Nigeria's overall emissions reduction goals.

3. POLICY DIRECTION

3.1 Policy Vision

The vision of the State on Climate Change is to achieve "***A low-carbon content and climate-resilient Kano State"***.

3.2 Policy Mission

The mission of the Policy is to "***Ensure sustainable development and a climate-proofed economy through multi-stakeholder engagement***".

3.3 Policy Goal

The overall Policy goal is to "***Promote a low-carbon, climate-resilient and gender-responsive sustainable socio-economic development***".

The goal of Kano's Climate Change Policy will be achieved through the attainment of the following objectives:

I. Implementing adaptation and mitigation measures that promote low-carbon development.
II. Strengthening capacities and synergies within the state and at individual and institutional levels to implement climate change response.
III. Promoting scientific research, technology and innovations to address the challenges of climate change
IV. Developing and implementing appropriate strategies and actions to reduce the vulnerability of Kano Indigenes to the impacts of climate change across all sectors.
V. Mainstreaming gender, children and youth, and other vulnerable groups into all climate change interventions.
VI. Promoting sustainable land-use systems that enhance agricultural production, ensure food security and maintain ecosystem integrity.
VII. Promoting climate-proofing of construction and infrastructural development.
VIII. Enhancing state-wide capacity to mobilise international and national resources, both technical and financial, for investment in climate change.
IX. Developing an effective climate change communication and information management system that facilitates access by all stakeholders to climate information.
X. Strengthening national institutions and mechanisms (policy, legislative and economic) to establish a suitable and functional system for climate change governance.

Some of the expected outcomes of the policy's goal include:

I. Reduced vulnerability to climate change impacts across all sectors.
II. Improved social, cultural, economic and ecological resilience.
III. Reduced greenhouse gas emissions.
IV. Increased awareness of climate change impacts and adaptation and mitigation measures.

V. Enhanced and strengthened research, innovation and technology development and transfer and systematic observations.
VI. Enhanced capacity to implement climate change-related interventions within the subregional, state and community levels.
VII. Climate change and its cross-cutting issues are mainstreamed in the State's development planning.

3.4 Strategic Objectives

Deepen Climate Governance: The state will deepen Institutional and Governance reforms based on national and regional practice. It may include, when necessary, the creation of new institutions or the introduction of new legislation. **Strengthen public institutions' capacity to address climate change** and ensure capacity is enhanced and resources mobilised and redistributed across the State's public institutions. **Stimulate and achieve the development of a green economy**. This is a necessary, though not sufficient condition for progress. Conscious development of a green economy will introduce green jobs to make it easier to achieve the Sustainable Development Goals (SDGs) and increase indigene commitment to address the effects of climate change. **Encourage the use of alternative forms of Energy –** the increased use of low emissions fuel and renewable combustion-free – power sources (like solar, windmills, hydro co-mini grids and rooftop solar power generation), etc.

3.5 Guiding Principle

The following guiding principles are relevant to the attainment of the strategic objectives of the Policy:

i. Country-driven and country-specific climate change interventions and responses.
ii. Effective citizenship participation.
iii. National & zonal partnerships and cooperation.
iv. Gender equality and social inclusion.
v. Sustainable management of the environment.
vi. Shared vision and responsibility among stakeholders.
vii. Precaution when faced with uncertainty.
viii. Promotion of environmental quality and ecological equilibrium.
ix. Comprehensive and coordinated approach among government, civil society organisations and the private sector.
x. Transparency, accountability and equity.
xi. Monitoring, evaluation and reporting of all climate change interventions and lessons.

4. MITIGATION

As outlined in the updated National Climate Change Policy (June 2021), Nigeria is committed to becoming a low-carbon economy as a means of promoting sustainable development as well as contributing to global efforts to reduce the incidence of Greenhouse Gases (GHG). Nigeria's approach is to increase the availability of carbon sinks, whilst reducing the level of emissions released into the atmosphere, ideally in sectors such as energy generation; oil and gas; agriculture, forestry, and other land use (AFOLU); transport; mining and manufacturing (industry), which produce the greatest amounts of emissions in the country. Kano's strategic objective will be to adapt these interventions where they apply to the State.

The new mitigation analysis estimated that GHG emissions in 2018 (the latest year for which estimates are available) were 347 MtCO2e. The energy sector was the largest source of GHG emissions with 209 MtCO2e emitted in 2018 (60% of the national total emissions). Fugitive emissions from oil and gas are the largest contributor to overall energy sector emissions (36% of total energy sector emissions in 2018), followed by transport, electricity generation (grid and off-grid), and residential and industrial energy consumption. AFOLU is the second largest contributor to total GHG emissions, contributing approximately 25% of national total GHG emissions in 2018, followed by waste (9%), and Industrial Processes and Other Product Use (IPPU) (5%). Kano will explore avenues to determine the level of GHGs attributable to the state.

5. ADAPTATION

The federal government has determined vulnerability across Nigeria's geographical regions, focusing on the three principal determinants of vulnerability - adaptive capacity, sensitivity and exposure. In an assessment of the relative vulnerability of the six geopolitical zones of Nigeria, there is a general north-south divide. The three northern zones show higher vulnerability compared to those in the south. Kano being in the northwest zone falls within an area that is most subject to the impact of climate change.

Agriculture and Food Security

Agriculture is one of the sectors most sensitive to climate change. Under a business-as-usual scenario, agricultural productivity could decline between 10% to 25% by 2080. In some parts of the north, the decline in yield in rain-fed agriculture could be as much as 50%. This in turn would impact gross domestic product (GDP), reducing it by as much as 4.5% by 2050, and the share of agriculture in GDP will decline from 40% to just 15%. Furthermore, in the absence of mitigating measures, the net import of yams and other vegetables is expected to increase in the long term. The net import of rice, however, is expected to increase by as much as 40%.

6 SECTORS

6.1 Agriculture

The agriculture sector in Kano State is a cornerstone of the economy, providing food, employment, and raw materials for industries. In 2013, it accounted for about 20% of the state's GDP, and despite a decrease to approximately 18% by 2017, the sector has shown resilience to economic shocks, maintaining an upward trend in value terms. However, the sector faces substantial challenges due to climate change, including erratic rainfall, increasing temperatures, and frequent droughts, which threaten agricultural productivity and farmer livelihoods.

The impacts of climate change compound existing challenges, such as small farm sizes, informal land tenure, limited access to technology, and narrow employment opportunities. Under a "business as usual" scenario, agricultural productivity could decline by 10% to 25% by 2080. Current yields in rainfed agriculture have already decreased by up to 50%. These effects increase the vulnerability of rural households involved in subsistence and smallholder farming.

Kano State has a state-wide, unified, and all-inclusive extension delivery system under the Kano State Agricultural and Rural Development Authority (KNARDA). This system actively promotes the agro-allied industry, aiming to strengthen the linkage and effect of agriculture on the economy through the integration of agroforestry and climate-smart techniques. The policy will ensure the provision of facilities and incentives such as rural infrastructure, primary healthcare, and cottage industries to encourage agricultural and rural development and attract women and youth engagement.

The state will explore the application of nature-based solutions, with clear targets to form a network of carbon sinks. Nigeria's NDCs identify agroforestry, improved forest management, and forest restoration as top solutions for climate mitigation. Kano State, with its considerable land area, aims to contribute significantly to these national targets. Implementing regenerative agriculture and nature-based solutions will also bolster water security by enhancing the storage and recharge of groundwater, addressing a critical issue highlighted in the Kano State Water Supply Policy (2007).

Kano State is committed to developing climate-smart policies, to achieve sustainable agricultural development for food security under climate change. This includes sustainably increasing agricultural productivity and incomes, building resilience to climate change, and reducing GHG emissions. The state recognises the critical need for well-trained agricultural extension officers to disseminate knowledge and provide support to farmers, ensuring the effective implementation of these initiatives.

Policy Measures

i. **Promote Climate-Smart Agriculture**: Implement sustainable agricultural practices that increase productivity and resilience to climate change impacts and strengthen the focus

on nutritional outcomes by promoting the production of nutrient-rich and biofortified crop varieties that enhance both food security and dietary diversity.

ii. **Enhance Irrigation Infrastructure**: Develop and improve irrigation systems to support year-round farming and reduce dependency on erratic rainfall.
iii. **Improve Agricultural Extension Services**: Strengthen agricultural extension services to provide farmers with the knowledge and resources needed for sustainable, climate-smart farming, emphasising the training and deployment of extension officers.
iv. **Increase Access to Renewable Energy**: Support the use of renewable energy sources, such as solar-powered irrigation pumps, to reduce the carbon footprint of agricultural activities.
v. **Capacity Building and Training**: Provide training for farmers on climate-smart agricultural practices, sustainable land management, and efficient resource use
vi. **Policy and Regulatory Support**: Develop and enforce policies and regulations that promote sustainable agriculture and support farmers in adapting to climate change.

vii. Promote the integration of trees into farmlands to enhance carbon sequestration and improve soil fertility for farming.
viii. Adopt climate-smart agriculture practices and introduce drought-tolerant crop varieties to farmers to reduce the effects of drought on farm produce.
ix. Promote diversification of crops to enhance food security and resilience against climate variability.
x. Combat bush burning through legislation, enforcement, and surveillance.
xi. Ensure equitable access to climate-smart technologies, agricultural inputs, and extension services for vulnerable groups, particularly women, by setting gender-specific targets.
xii. Support women's access to credit, land rights, and training in climate-smart agriculture (CSA) practices to enhance their contributions to agricultural resilience and food security
xiii. Promote the cultivation of nutrient-dense and biofortified crop varieties that contribute to dietary diversity and improve nutrition. Integrate these practices into extension services and community outreach to improve both food security and health outcomes.

6.2 Forests and Other Land Use

Kano State is blessed with a total area of cultivable land estimated at approximately 1,754,200 hectares (ha) of which 86,500 ha is lowland (Fadama) and about 75,000 ha comprises forest and grazing land.

Kano State will strive to achieve self-sufficiency in forest products and services through the employment of sound forest management principles and techniques, as well as the mobilisation of human and material resources.

Through this framework, the government will work to reduce (or where possible prevent) the adverse effects of drought and desertification, halt or even reverse the processes of

desertification, and stimulate sustainable development. The development of alternative sources of energy through growing biofuel crops will add to the energy benefits, also help to revegetate the environment thereby reduce further desertification. The forestry programme is the main mitigant to the relentless advance of the desert.

The state will seek to increase the total area under sustainable forest management to 25% of the state's land area. However, with the immense threat that climate change poses for Nigeria's highly natural capital-dependent economy, the forest sector holds real potential for a much greater contribution to the state's economy, its climate targets, as well as its green growth and sustainable development agenda. The state will embark on reforming and improving its forest management practices, seeking to end illegal firewood harvesting, placing a focus on promoting efficient use of forest resources and more deliberately supporting sustainable development.

Policy Measures

i. Promote Sustainable Forest Management: Implement sustainable forest management practices to reduce deforestation and land degradation.
ii. Enhance Reforestation and Afforestation Efforts: Increase efforts in reforestation and afforestation to restore degraded lands and enhance carbon sinks.
iii. Strengthen Land Use Policies: Develop and enforce land use policies that promote sustainable land management and prevent illegal logging and land conversion.
iv. Support Community-Based Forest Management: Encourage community involvement in forest management to ensure sustainable use and conservation of forest resources.
v. Enhance Public Awareness: Conduct public awareness campaigns to educate communities about the importance of sustainable forest management and conservation.
vi. Promote Alternative Energy Sources: Encourage the use of alternative energy sources to reduce dependency on fuelwood and mitigate deforestation.
vii. Protect Land Tenure and Resource Rights: Ensure gender-equitable, inclusive, and transparent benefit sharing while protecting forest and land tenure and resource rights.
viii. Promote Gender-Inclusive Forest Management: Implement strategies to ensure equitable access to forest resources for women, particularly in rural areas, by promoting their participation in forest management decision-making. Establish capacity-building programs to equip women with leadership skills and create opportunities for them to take active roles in community-based forest initiatives.
ix. Integrate Agroforestry for Nutrition Security: Promote agroforestry systems that incorporate the cultivation of edible plants, wild fruits, and nuts to enhance dietary diversity and food security. Ensure that forest management practices support both livelihoods and nutrition by integrating these food sources, which can provide essential nutrients and supplement local diets.
x. Aim to increase forest cover in Kano State by 25% by 2030.

6.3 Energy

The State priorities would include investments to improve power supply for domestic consumption and for businesses to thrive. There are 6 renewable energy projects in the pipeline with an estimated value of US$750 million and, the potential to deliver on implementation, an estimated output of approximately 450 MW of Solar Power.

The current demand for power in Kano State stands at approximately 500MW. The average daily dispatch is much lower at between 80-100MW, leaving a huge power supply gap of over 400MW. Beyond 2020, the projected demand is approximately 2,000 MW. About 45% of this is expected to come from Independent Power Projects under Public-Private Partnership (PPP) initiated by the State

There are additional efforts by the State in active collaboration with the private sector to boost electricity power supply through four solar power projects with a combined output of 400 MWTs. Renewable energy supply is expected to exceed 1,000 MWTs by the end of the plan period.

Policy Measures

i. Renewable Energy Expansion: Increase the share of renewable energy sources, to enhance the energy mix and reliability. Developing a mix of solar, wind, hydro and geothermal energy projects
ii. Infrastructure Enhancement: Upgrade and expand power transformers and distribution grids to improve efficiency and reliability, reaching underserved areas and making more efficient energy available to more people.
iii. Energy Efficiency Promotion: Implement programs to reduce energy consumption and encourage the use of energy-efficient appliances and technologies.
iv. Community Awareness and Engagement: Raise awareness about renewable energy and energy conservation through outreach programs and educational campaigns.
v. Supportive Policies and Regulations: Develop and enforce policies and regulations that support the development of renewable energy projects and promote energy efficiency.
vi. Develop a smart grid initiative to enhance energy efficiency by integrating renewable energy sources to reduce emissions.

6.4 Health

Kano State is dedicated to improving its health sector to ensure the well-being of its residents in the face of climate change. According to the National Multidimensional Poverty Index 2022, Kano State has the highest rate of malnutrition in Nigeria, with approximately 14.7% of its population malnourished, and about 11.7% facing significant delays in accessing healthcare facilities. Climate change exacerbates these issues, as increased temperatures, irregular rainfall, and extreme weather events impact agricultural productivity, leading to food shortages and reduced crop yields. These changes drive up food prices, limiting access to nutritious food, especially for vulnerable populations. Additionally, climate-related impacts on infrastructure can hinder access to healthcare, further compounding the region's challenges with both malnutrition and

healthcare accessibility. The state faces significant challenges, including inadequate healthcare infrastructure, the need for additional well-trained health professionals and administrators, and a higher incidence of climate-sensitive diseases. These challenges are exacerbated by climate change impacts such as rising temperatures, increased flooding, and extreme weather events, which strain the health system and heighten public health risks.

To address these issues, Kano State is committed to developing a resilient health system that can adapt to and mitigate the effects of climate change. This involves enhancing healthcare infrastructure, providing renewable energy systems to power health facilities, particularly in rural areas, integrating climate change considerations into health policies, and improving disease surveillance and response systems. By promoting climate-smart healthcare practices and ensuring the availability of essential health services, the state aims to safeguard public health and enhance the resilience of its health sector. These efforts will not only improve health outcomes but also contribute to the overall sustainability and resilience of the community.

Kano State will ensure it takes on board the goals of the CoP28 declaration on climate and health, of which Nigeria is a signatory. The state will pay particular attention to; strengthening the development and implementation of policies that maximise the health gains from mitigation and adaptation actions and prevent worsening health impacts from climate change, including through close partnerships with indigenous people, local communities, women and girls, children and youth, healthcare workers and practitioners, persons with disabilities and the populations most vulnerable to the health impacts of climate change, among others and; encouraging the scaling up of investments in climate and health from domestic budgets, multilateral development banks, multilateral climate funds, health financing institutions, philanthropies, bilateral development agencies, and private sector actors.

Policy Measures

i. **Climate-Resilient Health Infrastructure:** Construct and upgrade healthcare facilities using climate-resilient designs and materials to withstand extreme weather events and ensure continuous service delivery.
ii. **Equitable Health Services:** Promote equitable, efficient, high-quality, and affordable health services based on the primary health care approach for all citizens.
iii. **Disease Surveillance and Early Warning Systems:** Strengthen disease surveillance and early warning systems to detect and respond to climate-sensitive diseases, such as malaria and cholera, more effectively.
iv. **Renewable Energy Solutions:** Deploy renewable energy sources, such as solar power, in healthcare facilities to ensure reliable energy supply and reduce carbon emissions.
v. **Water and Sanitation Improvements:** Enhance water and sanitation facilities in healthcare facilities using climate friendly solutions to improve quality of care settings to prevent waterborne diseases and ensure a safe environment for patients and staff.

vi. **Community Health Education:** Implement community health education programs to raise awareness about the health impacts of climate change and promote preventive measures.

vii. **Emergency Preparedness and Response:** Strengthen emergency preparedness and response systems to manage health crises resulting from extreme weather events and other climate-related impacts.

viii. **Monitoring and Evaluation:** Establish robust monitoring and evaluation frameworks to track health outcomes related to climate change and assess the effectiveness of health interventions.

ix. **Support for Climate-Smart Healthcare:** Support and fund primary, secondary, and tertiary health systems to adopt climate-smart healthcare practices.

x. **Gender, Equality, Diversity, and Social Inclusion (GEDSI):** Ensure that all climate resilience and health initiatives consider gender, equality, diversity, and social inclusion (GEDSI) by tailoring health services, infrastructure, and community education programs to meet the needs of women, children, persons with disabilities, and other vulnerable groups. This inclusive approach aims to address the unique health challenges faced by these groups in the context of climate change and promote equitable access to health services across Kano State.

6.5 Industrial Processes and Product Use

The Industrial Processes and Product Use (IPPU) sector in Kano State is a significant contributor to greenhouse gas (GHG) emissions, primarily from activities such as plastic manufacturing, leather tanning, textile production, and pharmaceutical manufacturing. These industries play a crucial role in the State's economy but also pose environmental challenges that need to be addressed through sustainable practices and technological innovations. Additionally, Kano State is committed to aligning its industrial practices with national and international climate goals, including compliance with the Kigali Amendment to the Montreal Protocol to phase down Hydro-Fluoro Carbon (HFC) gases. The state's approach will integrate energy efficiency, renewable energy use, and green technology adoption to foster a sustainable industrial sector.

Policy Measures

i. **Adopt Cleaner Production Technologies:** Encourage the adoption of cleaner production technologies and energy efficiency in industrial processes to reduce GHG emissions and other pollutants.

ii. **Enhance Waste Management Practices:** Implement efficient waste management practices to minimise industrial waste and promote recycling and reuse.

iii. **Support Renewable Energy Use:** Encourage the use of renewable energy sources, such as solar power, in industrial operations to reduce reliance on fossil fuels.

iv. **Strengthen Regulatory Frameworks:** Develop and enforce adequate environmental regulations to control industrial emissions and ensure compliance with sustainability standards.
v. **Incentivise Sustainable Practices:** Offer incentives to industries that adopt sustainable practices and reduce their carbon footprint.
vi. **Facilitate Revenue from Emission Savings Offsets:** Simplify the process of documentation and verification of emission savings through support for a third-party aggregation entity to enable smaller players in the State to benefit from revenue streams such as Internationally Transferred Mitigation Outcomes (ITMOs).
vii. **Promote gender inclusion in sustainable industries** by supporting women's participation in green technology fields, such as renewable energy and eco-friendly production.

6.6 Flooding & Erosion Control

Kano State needs to deal not only with drought and desertification but also with floods and erosion. Flooding and erosion pose significant threats to Kano State, exacerbated by the impacts of climate change, including increased rainfall intensity and variability.

Historical incidents of flooding in Kano, such as those in 2012, 2018, and 2020, have resulted in loss of life, property damage, and disruption of economic activities. These events highlight the urgent need for effective flood and erosion control measures.

Guided by federal regulations such as the National Environmental (Soil Erosion and Flood Control) Regulations, 2011 and lessons from federal programs such as the Nigeria Erosion and Watershed Management Project (NEWMAP), Kano State is committed to implementing comprehensive strategies to mitigate these risks and enhance the resilience of communities and infrastructure. By adopting sustainable land management practices, improving drainage systems, and promoting community awareness, the state aims to reduce vulnerability to flooding and erosion and protect its citizens and assets. Additionally, the development of a comprehensive watershed management plan will serve as a foundation for effective flooding and erosion control policies.

In instances where flood and erosion events occur, the National Disaster Management Framework will guide Kano State to implement effective response and recovery actions, supporting affected communities and facilitating a swift and organised recovery process.

Policy Measures

i. **Enhance Flood Risk Assessment and Mapping:** Conduct detailed flood risk assessments and develop flood hazard maps to identify vulnerable areas and guide planning and mitigation efforts, in line with the National Environmental (Soil Erosion and Flood Control) Regulations.

ii. **Improve Drainage Infrastructure:** Upgrade and expand urban and rural drainage systems to effectively manage storm water and prevent flooding, following best practices.
iii. **Implement Sustainable Land Management Practices:** Promote soil conservation, reforestation, and sustainable agricultural practices to reduce runoff and prevent soil erosion.
iv. **Develop and Enforce Land Use Regulations:** Implement land use planning and zoning regulations that restrict development in flood-prone areas and promote sustainable land use practices, in line with national policies.
v. **Enhance Early Warning Systems:** Develop and deploy advanced early warning systems for floods and erosion to provide timely information and alerts to communities at risk, following the framework provided by federal guidelines.
vi. **Develop and effectively implement a Watershed Management Plan:** Create a comprehensive watershed management plan to guide flood and erosion control efforts, ensuring a coordinated and sustainable approach to managing water resources and mitigating climate impacts.
vii. **Raise Awareness on Social and Behavioral Change**: Conduct community awareness campaigns to educate the public on flood and erosion risks and promote behavioral changes that reduce vulnerabilities, including responsible land use and waste management practices that contribute to flood prevention.
viii. **Ensure Gender, Equality, Diversity, and Social Inclusion (GEDSI)**: Integrate GEDSI principles into flood and erosion control initiatives by ensuring equitable access to resources, involving diverse community members in planning and decision-making, and addressing the unique needs of vulnerable groups affected by climate-related risks.

6.7 Urban Development

Kano State is focused on developing a resilient urban infrastructure that supports sustainable growth and enhances the quality of life for its residents. Urbanisation and population growth present both opportunities and challenges, particularly in the context of climate change.

Rapid urbanisation exacerbates these issues, as expanding urban areas encroach on agricultural land, further diminishing the State's capacity to produce food and support its population. The rapid changes in land use in Kano State due to urbanisation, and industrial development highlight the urgent need for effective land management strategies.

The inadequate planning, infrastructure, and services in urban areas, including sanitary and waste management facilities, particularly in public marketplaces (which attract large volumes of human traffic) have led to the proliferation of poor housing conditions. These areas face water and sanitation challenges and lack basic services due to inadequate town planning, poor land use control, and insufficient infrastructure development. Addressing these issues is critical to improving the overall health and well-being of the population.

To build resilience and promote sustainable urban growth, Kano State is committed to improving infrastructure, enhancing public transportation systems to encourage a modal shift, and promoting green building practices. The state also recognises the importance of social inclusion and gender equity in urban development, ensuring that all communities benefit from sustainable growth.

Kano State will leverage federal initiatives and collaborate with the private sector and development partners to achieve its urban development goals. This includes exploring the potential of high-capacity buses running on cleaner energy and leveraging the Presidential Compressed Natural Gas Initiative (Pi-CNG) for transportation to complement its targets in the transport sector. By fostering sustainable urban development, Kano State aims to create vibrant, livable cities that can adapt to the challenges posed by climate change.

Policy Measures

i. **Upgrade Basic Infrastructure:** Prioritise the development and upgrading of basic infrastructure such as roads, drainage systems, and sanitation facilities in urban areas to improve living conditions and support sustainable growth.
ii. **Develop Affordable Housing Solutions:** Implement housing policies that focus on developing affordable, climate-resilient housing units, particularly in low-income areas, to reduce the proliferation of slums and improve overall urban living standards.
iii. **Strengthen Land Use Planning and Enforcement:** Enhance land use planning and enforce zoning regulations to prevent haphazard urban expansion, promote organised development, and ensure the provision of essential services.
iv. **Promote Sustainable Waste Management:** Develop and improve waste management systems to handle the increasing volume of waste in urban areas, focusing on recycling, composting, and proper disposal methods to minimise environmental impact.
v. **Expand Access to Clean Water and Sanitation:** Invest in expanding access to clean water and improved sanitation facilities in urban areas, with a focus on underserved communities, to promote public health and environmental sustainability.
vi. **Improve Public Transportation Systems:** Develop and expand public transportation networks that are efficient, affordable, and run on cleaner energy sources, reducing the reliance on private vehicles and lowering urban emissions.
vii. **Enhance Green Spaces and Recreational Areas:** Develop parks, green spaces, and recreational areas in urban environments to improve the quality of life, reduce urban heat islands, and enhance community well-being.

6.8 Transport

Kano State desires to create a safe, affordable, reliable, and efficient transportation system for both urban and intrastate movement of people and goods. Transportation is predominantly road-based and presently, the mode consists of taxis, buses, tricycles, and motorcycles. The potential

of the rail infrastructure within the Kano metropolis is yet to be tapped and will be explored as an avenue to reduce commuter-derived emissions.

The state's climate change policy will ensure that the provision of public transport services is efficiently managed, safe and environmentally sustainable.

Consistent with the broader goal of aligning federal initiatives, the state will explore leveraging the Presidential Compressed Natural Gas Initiative (Pi-CNG) and other alternative energy sources such as solar and electric vehicles to complement its targets in the transport sector. By enhancing infrastructure, promoting public transportation, and investing in modern, low-emission technologies, Kano State aims to build a resilient and sustainable transport system.

In pursuing these goals, Kano State is committed to the principle of a 'Just Transition', ensuring that the shift to a low-carbon transport system is fair and inclusive. This includes creating decent job opportunities, protecting workers' rights, and providing support for communities affected by the transition.

Policy Measures

i. Introduction of fuel-efficient means to transport and increased shared ride services.
ii. Improve the quality and coverage of public transport.
iii. Facilitate and promote a gender-friendly and socially inclusive modal shift from road travel.
iv. Improve the environmental performance of the transport sector.
v. Incorporate Compressed Natural Gas (CNG) as an energy source for the transport sector in urban areas.
vi. Promote public, and private participation (PPP) in the development of the sector.
vii. Implement measures to reduce carbon emissions from motor vehicles.

6.9 Waste

Kano State is committed to transforming its waste management system to enhance environmental sustainability and public health. Rapid urbanisation and population growth have significantly increased the volume of waste generated in the State, presenting substantial challenges. The current waste management infrastructure is insufficient, leading to improper waste disposal practices that contribute to environmental pollution and greenhouse gas emissions.

The waste generation per capita is 0.55kg per person per day based on the AFD survey in 2018 and 0.56kg/person/day by the NCCRP survey in 2022. The total waste generation is 9000 tonnes per day.

The state aims to develop an integrated and sustainable waste management system that reduces waste generation, promotes recycling and reuse, and ensures safe disposal of waste. This will involve upgrading waste collection and treatment infrastructure, encouraging community

participation in waste management, and implementing policies that support the circular economy.

By adopting climate-smart waste management practices, Kano State will reduce its environmental footprint, create green jobs, and improve the quality of life for its residents. The state will work in collaboration with federal initiatives, the private sector, and development partners to achieve these goals. This integrated approach aligns with national and international climate objectives, contributing to a cleaner, healthier, and more sustainable environment for future generations.

Policy Measures

i. **Integrated Waste Management Systems:** Develop and implement integrated waste management systems that include waste reduction, reuse, recycling, and proper disposal.
ii. **Develop Waste-to-Energy Projects:** Implement waste-to-energy projects that convert waste into energy, reducing landfill use and providing a renewable energy source.
iii. **Promote public Awareness and Education:** Conduct public awareness campaigns and educational programs to inform residents about the importance of waste reduction, recycling, and proper waste disposal.
iv. **Promote Composting:** Encourage composting of organic waste to reduce landfill use and produce valuable compost for agricultural purposes. Promote the production of agricultural manure from compost to enhance soil health and reduce dependence on chemical fertilisers.
v. **Promote Biomass Fuel, a cleaner substitute to wood burning:** Promote conversion of agricultural waste to biomass fuel (briquettes) which are considered as clean and reliable energy compared to wood burning, especially for cooking.
vi. **Improve Landfill Management:** Upgrade existing landfills to meet environmental standards and establish new sanitary landfills to handle urban waste safely and efficiently.
vii. **Waste Collection and Separation at source**: Enhance waste collection systems to improve service quality, particularly for climate resilience. Implement policies to encourage at-source waste separation by households and businesses, facilitating more effective recycling and waste management.
viii. **Infrastructure Development**: Prioritise investment in waste management infrastructure, including recycling facilities and composting stations, to support a comprehensive, climate-resilient waste management system.
ix. **Policy and Regulatory Framework**: Strengthen waste management policies and regulations to ensure compliance with environmental standards and to promote responsible waste disposal practices aligned with Kano State's climate resilience goals.
x. Improving waste collection systems to enhance the services for a comprehensive response to weather events and climate impact.

6.10 Water, Sanitation and Hygiene

Kano State is dedicated to enhancing its water and sanitation sector to ensure the well-being of its residents and the sustainability of its economy. The state faces significant challenges related to water supply, quality sanitation, and management, which are exacerbated by climate change impacts such as erratic rainfall patterns, droughts, and increased temperatures. Currently, only 6% of the population has access to safely managed drinking water, with similarly low percentages for schools and healthcare facilities. Inadequate sanitation facilities further compound public health risks and environmental degradation.

Climate change poses significant challenges to water, sanitation, and hygiene (WASH) services in Kano State, necessitating resilient and adaptive measures to mitigate its impacts. The effects of climate change on sanitation facilities hinder progress toward the Sustainable Development Goal (SDG) 6 targets. Floods and droughts have deteriorated existing water and sanitation infrastructure (United Nations, 2019). Located within the Semi-Arid zone of Northwestern Nigeria, Kano State has suffered from climate change-induced flooding over the years (National Bureau of Statistics, 2021).

Kano State aims to implement comprehensive water and sanitation management strategies that ensure the sustainable use and availability of water resources and improve sanitation infrastructure. This involves developing and upgrading water supply infrastructure, promoting efficient water use, protecting water sources, and improving sanitation services. The state is committed to adopting climate-smart approaches to avoid the developmental errors of the past that focused solely on solutions with polluting options. By enhancing infrastructure, promoting community engagement, and leveraging renewable energy sources, Kano State will build a resilient water and sanitation sector that can adapt to the changing climate and support the needs of its population.

Policy Measures

i. **Improve water supply and sanitation coverage state-wide**, to at least 75% by the end of the plan period, through a coordinated effort involving the communities, other tiers of government, development partners and the private sector.
ii. **Procure additional motorised, hand-pump and solar-powered boreholes** for improved rural water supply.
iii. **Integrated Water Resources Management:** Implement integrated water resources management (IWRM) practices to ensure the sustainable and equitable use of water resources.
iv. **Enhance Water Supply Infrastructure:** Develop and upgrade water supply infrastructure, including reservoirs, treatment plants, boreholes, and distribution networks, using renewable energy sources where applicable, to ensure reliable access to clean water.

v. **Promote Water Conservation and Efficiency:** Encourage the adoption of water-saving technologies and practices in households, industries, and agriculture to reduce water wastage and enhance efficiency.
vi. **Enhance Sanitation Infrastructure:** Develop and upgrade sanitation facilities to ensure access to safe and hygienic sanitation services for residents, including the construction of adequate toilets in public places.
vii. **Public Awareness and Education:** Conduct public awareness campaigns and educational programs to inform residents about the importance of water conservation, proper sanitation, and hygiene practices.
viii. **Strengthen Institutional Capacity:** Build the capacity of water and sanitation management institutions to develop, implement and enforce sustainable WASH policies and practices.

6.11 Short-Lived Climate Pollutants

The approval in 2019 of Nigeria's National Action Plan to reduce short-lived climate pollutants (SLCPs) guided the reduction of SLCPs. The plan contains 22 priority measures that would result in an 83% reduction in black carbon emissions by 2030 and reduce methane emissions by 61%, as well as the adoption and ratification of the Kigali Amendment to the Montreal Protocol aimed at the phase down of HFCs. Kano State will explore avenues by which these targets can form part of its climate policy objectives.

Kano State faces significant environmental challenges, particularly regarding pollution of air, water, land, and noise. In 2015, 94% of the population was exposed to air pollution levels exceeding WHO guidelines for particulate matter (PM2.5). Many areas in Kano metropolis report noise levels ranging from 73 to 92 dB, well above the 60 dB recommended for industrial zones. There is also a decline in water quality with indicators such as pH, biochemical oxygen demand (BOD), nitrate, and phosphate levels in water bodies

Policy Measures

i. For industry: Clean technologies that reduce industrial smokestack emissions improve the management of urban and agricultural waste, including the capture of methane gas emitted from sites as alternatives to incineration (for use as biogas).
ii. For transport: Shifting to electronic vehicles (EVs) and introducing recharge infrastructure, prioritising rapid urban transit, walking and cycling networks in cities as well as rail interurban freight and passenger travel, shifting to cleaner heavy-duty diesel vehicles and low emissions vehicles and fuels, including fuels with reduced sulphur content.
iii. For urban planning: improving the energy efficiency of buildings and making cities more compact and thus energy efficient.
iv. For power generation: increased use of low emissions fuel and renewable combustion-free – power sources (like solar, windmill, hydro co-min grids and rooftop solar power generation) etc.

6.12 Education

Kano State is committed to advancing its education sector to ensure that it meets the needs of its growing population while adapting to the challenges posed by climate change. The State faces substantial educational development needs, including inadequate school infrastructure, insufficient teaching materials, and a lack of climate change awareness among educators and students. These issues are compounded by the impacts of climate change, such as increased temperatures and more frequent extreme weather events, which can disrupt educational activities.

Kano State aims to transform its education system by building new climate-resilient schools and renovating existing facilities, integrating climate change education into the curriculum, and improving waste management practices within schools. By focusing on sustainable development, the State intends to create an education system that is both resilient and forward-thinking. These initiatives will not only enhance educational outcomes but also promote environmental stewardship among the younger generation, preparing them to tackle future climate challenges effectively.

Policy Measures

i. **Climate-Smart Infrastructure Development:** Construct and renovate school buildings using climate-resilient designs and materials to ensure safety and sustainability.
ii. **Curriculum Integration:** Incorporate climate change education into the school curriculum to raise awareness and equip students with knowledge on sustainable practices.
iii. **Teacher Training:** Provide specialised training for teachers on climate change and sustainable practices to enhance their capacity to educate students effectively.
iv. **Renewable Energy in Schools:** Promote the use of renewable energy sources, such as solar panels, in school facilities to reduce carbon footprint and ensure reliable power supply.
v. **Water and Sanitation Improvements:** Enhance water and sanitation facilities in schools to ensure a healthy learning environment, including the implementation of rainwater harvesting systems.
vi. **Waste Management Programs:** Implement waste management and recycling programs in schools to promote environmental stewardship among students.

7. GREENING THE BUDGET / CLIMATE FINANCING

7.1 Exploring Avenues for Mobilising Funding – Green Bond Issuance

Kano State, through this climate change policy document, will continually explore avenues for greening portions of its annual budget and spending, while also developing a regular pipeline of projects that will meet with targets in this document. Options available to the State will be creating a framework that will warehouse the resources tagged as green. Chart 1 below gives a summary view of the process for separation and segmentation of resources.

7.2 Greening Sources of Funding for Project Interventions

As part of the climate change policy, Kano State will explore avenues to enhance the availability of credit for all farmers and agribusinesses through:

- Stimulating cooperative banking and affordable green loans through commercial banks;
- Increasing the utilisation of opportunities in capacity and size of market-driven guarantee and risk schemes (e.g., the Nigeria Incentive-Based Risk Sharing System for Agricultural Lending {NIRSAL}) for climate-smart agriculture;
- Legislation recognises alternative finance mechanisms e.g., warehouse receipt financing, commodity-trade financing, crowdsourcing, private equity, etc.;
- Deepening of the Ministry of Agriculture and Natural Resources (MANR) capacity to facilitate agribusiness investment agreements;
- Improved Access to savings and financing for agro-dealers to offer trade credit; and
- Exploring and promoting areas of agribusiness peculiar to women and other vulnerable people to increase their participation in the sector.
- Improving reporting on climate-responsive expenditures and associated outcomes and impacts

Policy Measures

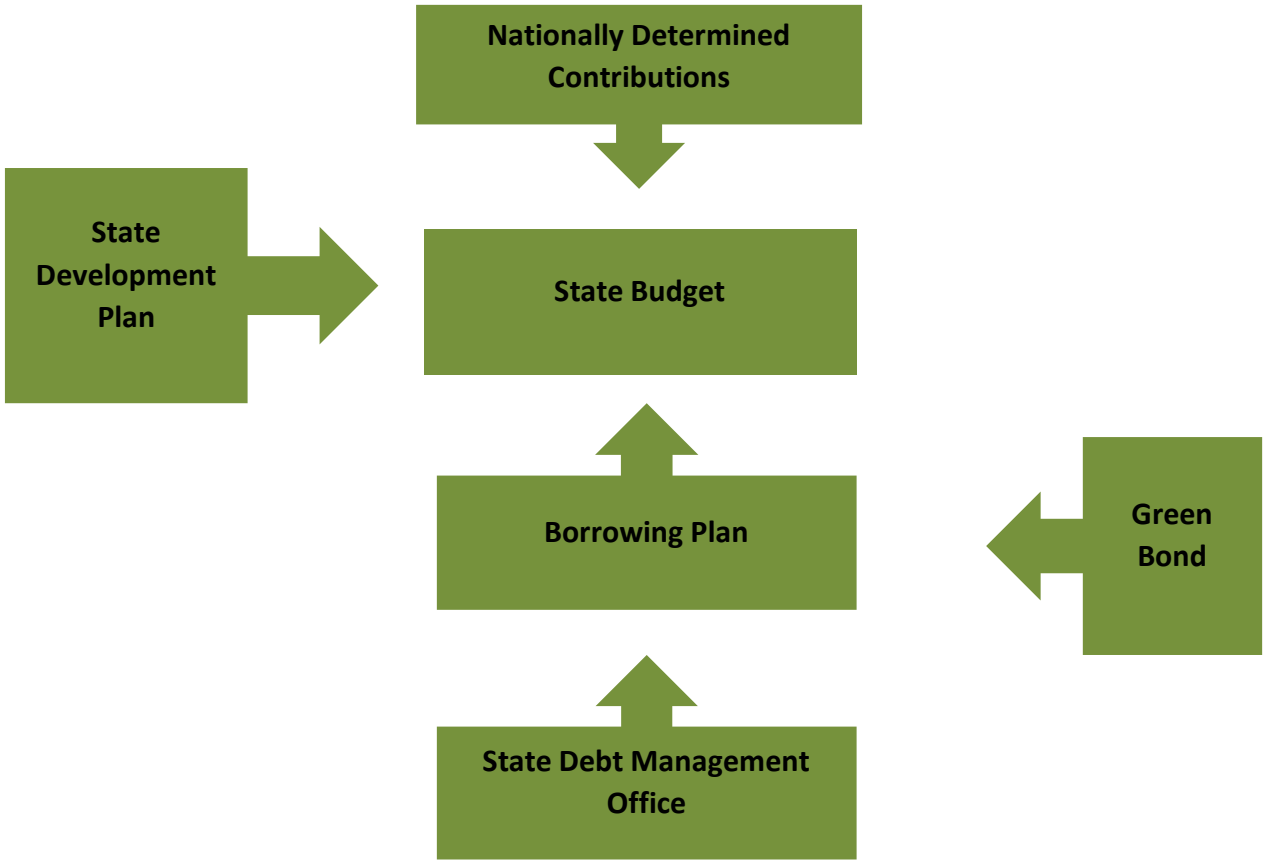
i. Develop and implement a Kano State Climate Finance Strategy that is gender-responsive and socially inclusive;
ii. Facilitate the establishment of a Kano State Climate Change Adaptation Fund;
iii. Facilitate investment to meet climate financing needs;
iv. Mainstream climate finance across Kano MDAs with appropriate monitoring and tracking systems;
v. Explore the issuance of variants of Green Bonds (such as Sukkuk, and sustainability-linked bonds) and other innovative financial instruments;
vi. Strengthen the institutional framework for mobilising climate finance;
vii. Integrate the search for green projects into the call circular and adopt green tagging as part of the budget process.

7.3 Finance and Finance Mobilisation

The state used a multi-year cash forecasting model to project the total resources needed to finance its development plan, and the scenario adopted for the computations is based on the

projected performance of the annual budget. The model projected revenue over the medium term by linking main sources of government revenue to a set of macroeconomic variables. The state's climate change policy will seek to align with these projections to ensure that resources are provided for climate-related interventions and that there are direct reflows to the state from the allocations and implemented projects.

Chart 1: Framework for Warehousing of Climate Resources



The climate change policy would explore avenues to deepen the modes of funding that are available to the state, not just to fund its budget but also to draw from its existing liabilities and natural assets. Chart 2 below lists some approaches that can be adapted in the state that will form part of the process. The state will proactively ensure the identification of development of a pipeline of projects that either address or respond to the key causes of climate change within the state. This will entail the preparation of detailed project appraisals, that will be financed through the issuance of Green Bonds/Sukuks.

Table 3: Framework for Mobilising Resources to Implement Adaptation-themed Programs.

S/N	Type of Vehicle	Approach
1.	Appropriation	Green tagging of the annual budget creates a segment of the capital budget that is classified as green. The impact of each project on NDC targets needs to be quantified.
2.	Issuance of Green Bonds	The FG's green bond provides a model to be adapted in the issuance of a subnational equivalent, greening components of the state's debt.
3.	Issuance of green Sukuks	A green sukuk provides the state with a theme that aligns with Islamic financing principles. The Indonesia Green Sukuk as a model.
4.	Refinance of Existing Debt	Limited headroom can be avoided by refinancing existing debt with a commitment to warehouse savings in a trust, to be used for climate interventions.
5.	Blended Finance	Drawing a mix of resources from appropriation, impact investors and climate funds can provide additional resources for the state.
6.	Debt for Nature Swaps	Entering an agreement with impact investors that would provide relief and unlock resources for project funding.
7.	Accessing Carbon Markets	Quantifying the emissions associated with project interventions and registering them on carbon exchanges or sale through bilateral agreements.

8. ENABLING CONDITIONS

8.1 Legal Framework

A legal framework, amongst other things, is aimed at providing a mechanism to achieve any set policy objective and provide legal backing for compliance with such policies. Within the context of climate change governance in Kano State, the government recognises that a functional legal framework to guide the state's response to climate change will, among other things:

- Clarify roles and responsibilities of different layers of governance (state and local government/communities);
- Enhance cooperation for problem-solving among different sectors – government, private sector, research institutions, CSOs;
- Promote the existence of rules, regulations and laws on climate change that are needed for compliance and enforcement of measures adopted in the national climate policies, plans and strategies, clarify the intersection of climate change and other legal and governance areas such as taxation, energy, transport and forestry and other climate-related issues;
- Discourage policy reversal and inconsistency in approach to addressing climate mitigation and adaptation;
- Facilitate the establishment of an authority instrument on the State Assembly to appropriate sufficient resources for climate actions
- Promote coordination of climate change response goals with other relevant development agendas such as the Sustainable Development Goals (SDGs), Agenda 2063 and the Sendai Framework on Disaster Risk Reduction; and
- Continue to mainstream climate change into state development and budget plans and strategies.

Policy Measures

i. Facilitate the passage of the Kano State Climate Change Bill - that will serve as an overarching legal instrument for integrated climate change governance in the state.
ii. Harmonise sectoral regulations to align with the proposed Climate Change Act and their implementation.
iii. Promote sector-specific legislative and regulatory amendments to establish and/or strengthen the enabling frameworks for mitigation and adaptation actions.
iv. Accelerate the domestication and contribution of Kano State to relevant international instruments, treaties, and agreements that deliver climate co-benefits and/or enhance the attainment of the nation's obligations under the UNFCCC.

8.2 Institutional framework

Strong state ownership, shared vision and participatory decision-making are critical factors for successful implementation of the state response to climate change. Kano State has 44 Local

Government Areas (LGAs) with each LGA assigned constitutional responsibilities of managing the environment and by extension climate change. It also has a well-defined management and coordination arrangement for the management of climate change in the state. It is important to note that the Kano Central Senatorial District (made up of 15 LGAs) has 44% of the state's population and will receive special attention in the implementation of the State's Climate Change Policy.

In the process of implementing this Policy, the Ministry of Environment and Climate Change, through WECCMA, will drive the state's response to climate change at the state and national levels as the State's focal point and work with Ministries, Departments and Agencies through the Inter-Ministerial Committee on Climate Change (ICCC). Its capacity will be strengthened to enable it to deliver the elements of this State Policy. This be drawn through a soon-to-be-developed Climate Change Action Plan that will enable the following:

- align and strengthen the capacity of relevant institutions to manage climate-related challenges;
- encourage the implementation of mitigation and adaptation initiatives at all levels of governance; and
- promote the roles of local governments in climate change governance.

8.3 Capacity Development

The complex and cross-cutting nature of climate change requires the development of both human and institutional capacities including appropriate gender and social inclusion skills.
The Paris Agreement acknowledges capacity-building as a fundamental precondition to foster enhanced and sustained coordination and coherence to enable governments and stakeholders to cut emissions and adapt to climate change. Various climate actors and stakeholders (governments, departments and agencies, the private sector, communities and development partners) need to collaborate to strengthen knowledge and capacity for managing climate risks. The Policy direction on capacity building is to increase human and institutional capacities to address issues on climate change.

Policy Measures

i. Strengthen Kano State Government's capability of mainstreaming climate actions and implementation, including linkage
ii. Enhance the skills and capabilities of staff in relevant and participating institutions, including capacities to mainstream gender concerns into the national response to climate change
iii. Ensure high-level political commitment for enhanced capacity development
iv. Facilitate public and private sector investments in capacity-building programmes for sustained response to climate change.
v. Institutional strengthening of the capacity of government institutions at state and local levels to design, implement, and monitor climate policies and programs.

vi. Enhance the capacity of local governments and traditional institutions to implement climate action plans, including through training, resource allocation, and the provision of technical support.
vii. Establish or support centres of excellence and knowledge hubs dedicated to climate change research, innovation, and capacity building.
viii. Invest in research programs focused on climate change impacts, adaptation, and mitigation.
ix. Establish grant programs and incubators to support innovation in climate solutions, particularly those developed by startups, small businesses, and local entrepreneurs.
x. Facilitate the transfer of climate-friendly technologies from developed to developing regions, including through partnerships, licensing agreements, and capacity-building programs that enable local adaptation and use of these technologies.

8.4 Private Sector

The private sector is a critical partner for a comprehensive climate change response and strategy. The inclusion of the private sector in climate change adaptation and mitigation planning and activities is not only strategic and well-informed but a key part of the state's efforts in meeting her action plan targets. Engaging the private sector to promote green growth and climate-friendly actions and activities has become necessary. This is even more so considering that the financing required for an orderly transition to a low-carbon, resilient economy is enormous. Furthermore, it is accepted that private climate initiatives can reduce GHG emissions significantly.
The possible areas of contribution by the private sector in addressing climate change include:

- Mobilising financial resources and technical capabilities;
- Supporting the efforts of governments;
- Broadening participation and building partnerships to create new opportunities to technologies, services and markets;
- Developing and adopt low-carbon operations, technologies and services;
- Expanding and accessing new markets;
- Facilitating efficient resource management and savings;
- Playing a complementary role in providing additional information and motivation to achieving emissions reductions;
- Harnessing opportunities through the building of partnerships with other businesses, associations, NGOs, government agencies themselves and development partners while taking advantage of the resources, networks and expertise provided to implement climate actions and projects;
- Catalysing local technological capabilities and inventions to provide climate solutions.

The policy direction is to secure the interest of the private sector in promoting investments in and financing of climate response initiatives.

Policy Measures

i. Encourage information sharing that supports the raising of awareness of the private sector to understanding climate-related risks and opportunities, including the business case for climate mitigation and adaptation;
ii. Provide enhanced technical and institutional capacities for private sector actors to scale up adaptation and mitigation actions that are gender responsive and socially inclusive;
iii. Assist the private sector in incorporating adaptation and climate resilience into their business operations;
iv. Promote economic incentives to catalyse low-carbon investments;
v. Support regional and state-level investment entities to develop appropriate policies that will play a catalytic role in providing the financial and de-risking products needed to fund innovations necessary for climate actions;
vi. Encourage private sector participation in promoting insurance to build climate resilience;
vii. Provide clear guidance on the range of business opportunities available (including carbon markets, adopting and implementing relevant components of the Paris Agreement Article 6) towards contributing to the attainment of national commitments under the UNFCCC.

8.5 Technology and Innovation

Since 2004, the Kano State government has taken two important steps in information and communications technology (ICT) development. First, an ICT policy was articulated; and second, adopted the establishment of an ICT Park. These steps are expected to open new opportunities, attract investments, create new jobs and thus help in poverty alleviation and in promoting rapid economic growth. There are numerous opportunities to be exploited once the ICT Park becomes operational:

- Software development for businesses and industries;
- Outsourcing services;
- Research and Development (R&D) in ICT;
- Content creation and development;
- Manpower training and development;
  Fabrication and manufacture of telecommunications equipment etc.

Policy Measures

i. Development of a Web Portal and E-Education solution for state-owned tertiary institutions.
ii. Creating a paperless working environment in the Ministry by:
    a. Building a robust local area network (LAN) infrastructure;
    b. Automating paper-based processes that rely on forms and applications that capture and share data;
    c. Implementing a secured email system;
    d. Implementing an Internet Exchange Point and Software Laboratory at the ICT Park;

e. Development and provision of state-wide ICT infrastructure;
f. Implementing point to multipoint internet connection in MDAs;
g. Establishing a State Databank;
h. Training and capacity development; and
i. Public training and advocacy.

8.6 Research and Development

Research and development will promote innovative interventions in the areas of climate change adaptation and mitigation, climate finance mobilisation and utilisation, socio-economic issues, security, gender and social inclusion, including the roles of market and non-markets approaches at both national and international levels. Targeted and focused research will, among others, help to:

- improve understanding of the climate system and its drivers;
- improve understanding of climate change impacts and vulnerability;
- increase understanding of adaptation pathways;
- identify the mitigation options that reduce the risk of longer-term climate change;
- Improve decision support and integrated assessment; and
- Facilitate national and local government cooperations and partnerships.

The main policy direction is to build research capacity that improves the state's ability for deeper understanding, proper anticipation and response to climate change impacts and vulnerabilities. Appropriate technology for research in various aspects of climate change including resource management and products will be developed.

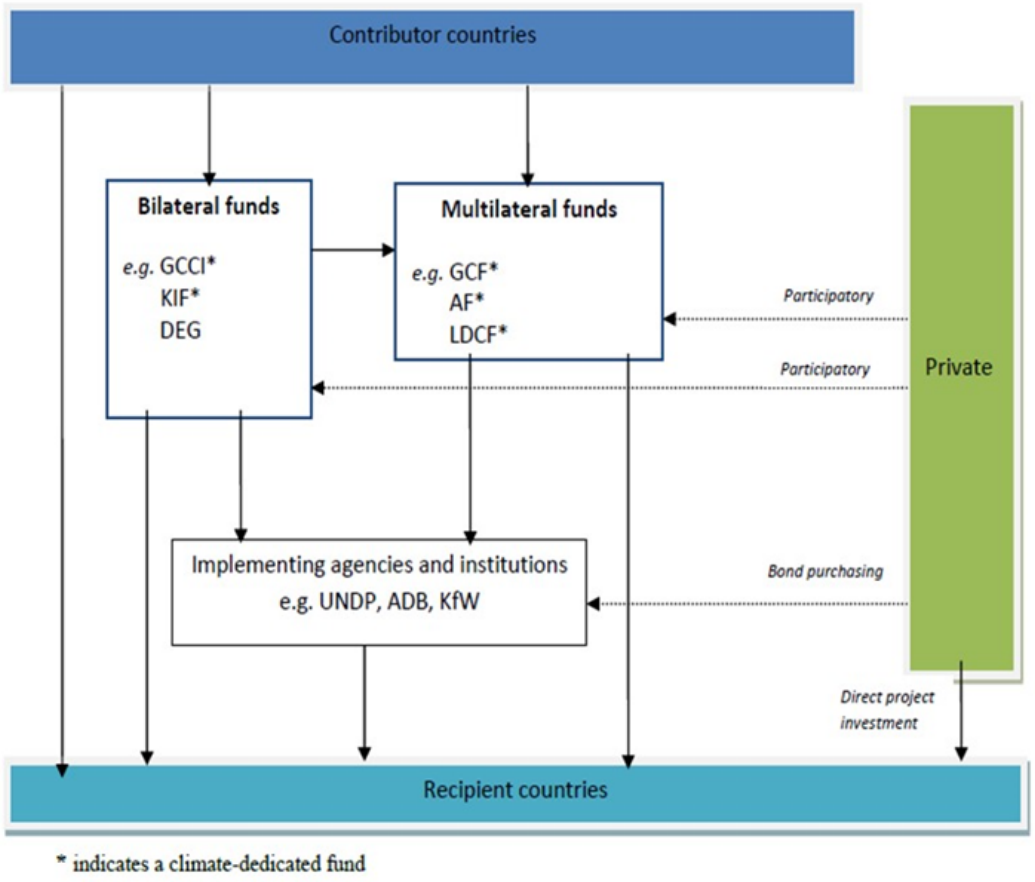
Policy Measures

i. Strengthen the integration of natural and social sciences, engineering, and other disciplines.
ii. Integrate climate science research into the state education system.
iii. Ensure availability of observations, monitoring, and infrastructure for critical data collection and analysis.
iv. Build state capacity for climate assessment through training, education, and workforce development that ensures gender equity and social inclusion.
v. Enhance the development and use of scenario planning.
vi. Promote national research and collaboration.

8.7 International Cooperation

Kano State government will take on board the opportunities that exist in aligning with international networks that focus on climate change. Chart 2 below illustrates the linkages between such networks in order to guide the approach to be applied by the State.

Chart 2: Interfaces between Climate Finance Networks



Policy Measures

i. Develop platforms for dialogue with bilateral partners, particularly the Foreign, Commonwealth and Development Office (FCDO) and its portfolio of programs.

ii. Establish working groups that will interrogate national and regional support programs of the multilateral such as the World Bank, African Development Bank (AfDB) and European Bank for Reconstruction and Development (EBRD) to identify areas of alignment with Kano State's climate goals.

iii. Apply a directed effort to engage with implementing agencies of the climate funds, particularly those with bilateral affiliations.

iv. Apply a directed effort to engage with non-state actors with climate allocations within their mandate, such as The Challenge Initiative Foundation (TCIF), Bill and Melinda Gates Foundation (BMGF), etc., and the more recently Green Climate Fund (GCF) accredited Development Bank of Nigeria (DBN).

9. IMPLEMENTATION STRATEGIES AND ACTIONS

9.1 Mainstreaming Climate Change Concerns into State Development

Mainstreaming climate change concerns into all existing Kano State sectoral policies, planning, and development processes is critical to achieving the policy's goals and objectives in alignment with the State Development Plan. The state will develop a climate change action plan building on the policy measures captured in this document in addition to a results framework.

The Ministry of Environment and Climate Change, in collaboration with the Watershed Erosion and Climate Change Management Agency, will be the anchor of the implementation of the climate change policy, working closely with government officials from the Ministry of Finance (MoF) and Ministry of Planning & Budget (MoPB) to take the leadership role in ensuring that all state and sectoral policy planning and development processes mainstream climate exchange considerations, working closely with relevant MDAs in the state.

Policy Measures

i. Explore setting up an Interministerial Committee on Climate Change (ICCC), comprised of ministries within the State with mandates to address the causes of climate change relevant to the State.
ii. Institutionalise inclusive governance and an integrated approach to climate change management by explicitly identifying and integrating mitigation and adaptation considerations. Draw up and segment the climate elements of the Medium-Term Sector Strategies (MTSS) within the context of a Medium-Term Expenditure (MTEF) and annual budgets to drive the implementation of the plan at sector levels and execution by MDAs.
iii. Institutionalise strategic climate change assessments and management approaches to all policies. Programmes and plans
iv. Ensure effective mobilisation of resources for climate change policy through collaboration and engagement with the offices of the State Accountant General (OSAG) and Public Debt Management Office (PDMO) to ensure transparent and effective public finance management processes and procedures in mobilising funds for climate change projects.
v. Ensure synergies between projects in the 3rd State Development Plan and the Climate Change Policy.
vi. Develop an implementation plan and results framework to guide reporting and review of progress and regularly update both documents.

9.2 Mainstreaming Gender

Kano State, one of the populous states in Nigeria, has experienced problems with poverty, with increased vulnerability for women, men and children, youths, older people and persons living

with disability. These problems range from undernourishment, dispossession, disease, poverty, illiteracy and inequality in terms of livelihood.

Climate change is not gender neutral, the issues negatively affect the lives of women and girls. It is a threat multiplier and issues such as increased drought frequency, rainfall variability, elevated temperatures, and flooding are making the situation worse for women, who are already facing inequality in the region. The impacts of climate change will be felt more by women, as they will lose their socio-economic dependence on agriculture, especially in rural areas. The sustainable use of natural resources in the region, such as water, land, and forestry, depends on proper management. According to the National Poverty Indicator Survey of 2022, 10.5 million people in Kano are poor, and the city's level of multidimensional poverty affects 66.3% of the people. The state Multidimensional Poverty Index (MPI) is 0.27, which is the same as the national average. It also has a low Human Development Index (HDI) of 0.487, below the national average of 0.534. People who face the risk of social exclusion in the Kano metropolis comprise women and girls, people with disabilities, ethnic and religious minorities, migrants and internally displaced people, children and older persons, sexual minorities, and people living with Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS).

Kano State conducted a situational analysis on issues of gender and social exclusion experienced by men, women, adolescent girls and boys in Kano State that will serve as a basis for developing its State Gender Policy and domestication of the National Gender Policy. In response to the findings of the situational analysis on social exclusion, gender-based discriminations, and gender-based impunities, a social protection and economic empowerment pillar was included in the Kano State Development Plan and a Gender Policy was developed.

This Policy recognises women and vulnerable persons as agents of change with unique knowledge and capabilities. Encouraging and supporting their leadership to address climate change and inform policy is one way to ensure that a gender perspective is included, without this, climate policies could fail to be effective.

Involving women, girls, and other vulnerable groups in designing and implementing climate change management programmes is essential for effectively managing the impacts. This concerns ensuring that every group is included in the efforts to minimise the consequences. It is also about population growth as a driver of climate change. The high population growth rate of Kano State is putting pressure on the environment and natural resources, causing environmental degradation, which aggravates the adverse effects of climate change. Therefore, incorporating demographic dynamics such as population density, urbanisation, reproductive health, and family planning in development plans will help deal with the effects of climate change.

The Government is committed to gender mainstreaming into climate change policies, programmes, and actions and is working with relevant stakeholders to develop innovative strategies and ensure an action plan for climate change planning and programming.

Policy Measures

i. Enhance understanding of the overall gender and social inclusion/exclusion dimensions of climate change.
ii. Address specific inequalities that contribute to the disproportionate exposure and vulnerability of women and other vulnerable groups to the effects of climate change, and the role of women as critical agents of change in climate responses.
iii. Support responses that are complementary to the goals of gender equality, women's empowerment, and climate change adaptation and mitigation.
iv. Incorporate gender perspectives in climate change responses and climate finance processes.
v. Ensure that women participate equally and actively alongside men and are enabled to take up leadership positions throughout the climate change programme management cycle.
vi. Bridge data gap on gender and climate change.
Invest in women, youth, and other vulnerable groups to participate effectively in the response to national climate change.
vii. Ensure all climate-resilient infrastructure (e.g., flood shelters, evacuation routes) is designed to be fully accessible to people with disabilities, children, and the elderly.
viii. Develop tailored emergency preparedness and response plans that consider the mobility, communication, and medical needs for people with special needs.
ix. Offer health services that address climate-sensitive illnesses with an emphasis on vulnerable groups, ensuring facilities are accessible and adaptable to changing climate conditions.
x. Use multiple formats—braille, sign language, and simplified content—to communicate climate risks, emergency procedures, and resilience strategies to people with disabilities.
xi. Involve people with special needs in policy planning and climate adaptation programs to ensure solutions meet diverse needs and enhance community resilience inclusively.
xii. Provide social assistance, such as subsidies and grants, for people with special needs to adopt climate-resilient measures (e.g., reinforced housing, cooling aids).

9.3 Roles and Responsibilities

Climate change management and governance require that all stakeholders work together as a cross-cutting issue. Thus, implementing the Policy will involve many different groups, including the private sector, civil society, community and faith-based organisations, local communities, the

public, and government agencies at local, State, national, and regional levels. A key element is defining the roles and responsibilities of the various groups within the climate change governance structure that will be utilised for the implementation of the Policy.

Policy Measures

i. Strengthen the capacity of the WECCMA through the relevant technical departments in the Ministry of Environment and Climate Change to oversee the implementation of the policy.
ii. Develop and implement legal and institutional frameworks for cooperative and collaborative management of climate change between the Ministry of Environment & Climate Change, through WECCMA and other MDAs
iii. Strengthen government capacity to assess, negotiate, and monitor investments, contracts, leases, and concessions to manage climate change for sustainable development.
iv. Strengthen the capacity of the educational system to provide pertinent climate education and research.

9.4 Public Private Participation and Partnerships

The key criterion for achieving climate-resilient development is broad public participation in decision-making. Promoting climate-compatible development is the responsibility of all state residents. A primary responsibility of government and NGOs is to assist local communities to create awareness of the impacts of climate change on their survival and support them to enhance their adaptive capacities. Thus, critical to the effective implementation of the objectives of the Policy is the commitment and sincere involvement of all institutions and sectors of society. Government, Civil Society Organisations (CSOs), Community-Based Organisations (CBOs), Faith Based Organisations (FBOs), Organised and Informal Private Sector, Trade Unions and other organisations will be partners in implementing policy objectives in Kano State.

Policy Measures

i. Build public support through mass education and awareness.
ii. Develop and implement a partnership and stakeholder involvement strategy to enhance climate change management.
iii. Develop and implement strategy for building capacities and capabilities among the various stakeholders to effectively manage climate change.
iv. Promote investments in climate change response and programmes by providing appropriate economic incentives.

9.5 Monitoring and Evaluation

To ensure effective implementation of this Policy, an Action Plan and Results Framework will be developed to guide implementation, track progress, assess impact, and ensure alignment with national and global climate objectives. These frameworks will provide a structured mechanism for measuring policy effectiveness, identifying gaps, and informing necessary adjustments.

9.5.1 Indicators and Performance Metrics

Measurable indicators will be defined for each policy objective and action, covering respective sectors. These indicators will allow for quantitative assessment of progress towards policy goals.

9.5.2 Data Collection and Reporting

Relevant data will be collected through various sources, including government agencies, research institutions, private sector, community-based organisations, and climate data from sources like the Nigerian Meteorological Agency (NiMet). Data collection methods will include surveys, remote sensing, field measurements, and participatory assessments.

Working closely with the KanBUS and the central department of M&E at the MoPB, a centralised data management system will be established to ensure the quality, accessibility, and security of climate-related data. This system will facilitate data sharing and collaboration among stakeholders and will support evidence-based decision-making.

Progress reports - quarterly reports from implementing agencies, biannual review reports and annual reports will be prepared and disseminated to relevant stakeholders, including policymakers, implementing agencies, development partners, and the public. These reports will provide updates on key indicators, highlight successes and challenges, and recommend corrective actions.

9.5.3 Review and Policy Adjustment

Periodic evaluations and reviews will be conducted every three years to assess the overall effectiveness and impact of the Policy. The Policy Review will provide an avenue to assess implementation progress, recommend adjustments, and integrate emerging climate science, policy trends, and international agreements.

9.5.4 Budget and Resource Allocation

The Ministry and implementing agencies shall provide adequate financial resources for M&E activities to ensure the implementation of the framework. This will include funding for data collection, analysis, reporting, and evaluation. Training and capacity building programs will be conducted to enhance the skills and knowledge of government officials, researchers, and community members in climate change monitoring and evaluation.

10. Bibliography

1. Kano State, Ministry of Environment and Climate Change “Kano Declaration on Climate Change and Environment (2024)”
2. Kano State, Ministry of Budget and Economic Planning “Kano Development Plan (2020-2025)”
3. Federal Ministry of Environment department of climate change “National Climate Change Policy for Nigeria (2021-2030)”
4. Kano State, Ministry of Environment “Kano State Policy on Environment (2020)”
5. Kano State, Ministry of Environment, Agro-Climate Resilience in Semi-Arid Landscapes (ACReSAL) “Climate Change: An Overview of the Problems, Issues and Challenges in Kano State, Nigeria” by Prof. A B Nabegu, mni
6. Draft Kaduna Climate Change Policy
7. Kano State Government, “Preliminary Draft for Kano State Climate Change Policy: Context, Dimensions & Considerations (2024)”
8. Kano State, Ministry Women and Social Development “Kano State Gender Equity and Social Inclusion Policy”
9. Kano State, Ministry of Education, Science, Technology, and Innovation “Kano State Non-State School Policy (2023)”
10. Federal Republic of Nigeria “National Environment (Soil Erosion and Flood Control) Regulations (2011)”
11. International Journal of Education Humanities and Social Science “Assessment of Environmental Sanitation Practices in Federal Capital Territory – Abuja (2024)”
12. Kano State, Ministry of Health “Subnational Health Accounts 2017-2021 (2023)”
13. Kano State, Ministry of Education “Kano State Teacher Development Policy (2023)”
14. Kano State Government “Approved Water Supply Policy (2007)”
15. Kano State Ministry of Agriculture and Natural Resources MANR “Kano State Agriculture Policy”
16. Kano State Food and Nutrition PolicyMinistry of Health, Ministry of Agriculture and Natural Resources


WORK AND PROGRESS