

# Impact of **Climate Change** on Women in Delta State

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# Executive Summary

Temperature increases and variations in rainfall—which are more in coastal regions and less in continental areas—indicate that Nigeria is experiencing climate change. Drought, desertification, increasing sea levels, erosion, floods, thunderstorms, bushfires, landslides, land degradation, more frequent and extreme weather events, and a decline in biodiversity are further manifestations of it. Delta state popularly called "The Big Heart" is one of the largest producers of petroleum products in Nigeria and sits in the South-South geo-political zone of Nigeria. Ecologically, Delta State is blessed with natural endowments and possesses tropical savannah and monsoon vegetation.

Agriculture is one of the major sources of livelihood of the people in the state with fishing, and crop production (cassava, rubber, oil palm, cashew, and cocoa) as the main agricultural activities practised in the state. Women in Nigeria, bear a disproportionate burden of the consequences brought about by climate change. These burdens range from agriculture to health and socio-economic dynamics, the effects are multi-faceted, demanding urgent attention and action. Although governments and state and federal levels have come up with policies and initiatives to tackle the impacts of climate change, the implementation of such policies appears weak and of little consequence on the lives of women.

Following the desk review, a citizen's survey to interrogate the knowledge of women on climate change and their perception of its impact on their lives was conducted. A total of 151 women participated in the survey. Analyzed data reveals that most women who participated in the survey (97%) noticed changing weather patterns as evidence of climate change. Similarly, changing weather patterns (56%) have impacted their lives significantly suggesting involvement in agricultural endeavours. Although 74% of them do not practice sustainable environmental practices, over 98% reported that they have not received any intervention support or training from the state government on climate change.

It is recommended that the state government should invest in building the adaptation and resilience of women to climate change, implement policy frameworks, and support awareness programs on climate change. Early warning systems should be strengthened to improve preparedness and response.

# 1.0 Introduction



Climate change refers to long-term shifts in temperatures and weather patterns. As greenhouse gas emissions blanket the Earth, they trap the sun's heat. This leads to global warming and climate change. The world is now warming faster than at any point in recorded history. Warmer temperatures over time are changing weather patterns and disrupting the usual balance of nature. This poses many risks to human beings and all other forms of life on Earth<sup>1</sup>. The global climate continues to change rapidly compared to the pace of the natural variations in climate that have occurred throughout Earth's history. Trends in globally averaged temperature, sea level rise, upper-ocean heat content, land-based ice melt, arctic sea ice, depth of seasonal permafrost thaw, and other climate variables provide consistent evidence of a warming planet. These observed trends are robust and confirmed by multiple, independent research groups around the world.<sup>2</sup>

Climate change in Nigeria is evident from temperature increase, and rainfall variability (increasing in coastal areas and decline in continental areas). It is also reflected in drought, desertification, rising sea levels, erosion, floods, thunderstorms, bushfires, landslides. land degradation, more frequent. extreme weather conditions and loss of biodiversity<sup>3</sup> Nigeria is Africa's largest economy, most populous country, and home to a wealth of natural resources, particularly oil and natural gas.

> According to the United Nations, Nigeria has the highest rate of deforestation in the world, losing 3.7% of its forest every year. It is also home to Africa's largest mangrove forest, but only 6%<sup>4</sup> is protected.

- https://www.dr.org/en/centrational/gesocinal/ge gesocinal/gesoc

https://www.un.org/en/climatechange/science/causes-effects-climate-change

Nigeria also has multiple ecological zones that allow for a broad range of livelihood opportunities in agriculture and agriculturally related ventures. Such activities are being impacted by climate change to varying degrees.

Given the changing climate, inadequate access to water and poor water quality does not only affect women, their responsibilities as primary givers, and the health of their families. Agriculture, for example, is a vital sector for human survival and economic development, providing food, fibre, and other essential products. Women are the backbone of agriculture, making significant contributions to crop production, livestock management, fisheries, and forestry.

> Women make up over 70% of the agricultural labour force but suffer disproportionately from the impacts of climate change. Traditional gender roles, women's involvement in livelihood activities and their limited abilities to make decisions contribute to their vulnerability to the impacts of climate change.

For example, most women are generally responsible for collecting water for the household. According to UNICEF, women and girls are responsible for retrieving water in 80% of households that require water collection. However, as climate change leads to water scarcity, women must travel further to find water, increasing their workload and leaving less time for education or other income-generating activities.<sup>5</sup> Similarly, hygiene and sanitation can be severely affected by the lack of access to clean water, which means women and girls can become more vulnerable to communicable diseases.

The Delta State of Nigeria nicknamed "the Big Heart" is the largest producer of petroleum products in the country and sits in the South-South geo-political zone of Nigeria. The state has been inhabited for years by various ethnic groups, including the Isoko and Eruwa in the centre of the state; Ukwuani in the east; the Ika and Olukumi in the northeast; the Anioma lobo in the northwest; and the liaw, Itsekiri, Urhobo, and Uvwie in the southwest.6 Ecologically, Delta State is blessed with natural endowments and possesses tropical savannah and monsoon vegetation. Agriculture is one of the major sources of the livelihood of the people in the state with fishing, and crop production (cassava, rubber, oil palm, cashew and cocoa) as the main agricultural activities practiced in the state.

Delta State is also an oil-rich state. Many rural communities play host to oil companies, some of which have gas-flaring facilities. The activities of these oil companies severely impact the health status, quality of life and livelihood of the people. Furthermore, it also has an impact on the climate since gas flaring is a major source of greenhouse gases (GHG) contributing to global warming which could accelerate the problem of climatic change and harsh living conditions.

This study seeks to examine the impact of climate change on women in Delta State. Specifically, this cross-examines the inequalities that women face as a result of climate change, their knowledge of climate change and the measures they take to be resilient in the face of a regularly changing climate.

5. https://www.technoserve.org/blog/5-climate-change-impacts-women/

<sup>6.</sup> https://en.wikipedia.org/wiki/Delta\_State

# 2.0 A Review of Climate Change in Nigeria



Climate change is an adverse environmental phenomenon that is causing enormous concern all over the world including in Nigeria. The impact of climate change on Nigeria's environmental and socioeconomic systems is compounding the country's fragility risks.7 Extreme weather patterns-fiercer, longer dry seasons and shorter, more intense rainy seasons-are exacerbating challenges confronting local communities. Extensive cultivation and overgrazing have been compounded by desertification, rendering large swaths of land in northern Nigeria unproductive. Unpredictable and higher-intensity rainfall in southern Nigeria is resulting in a loss of crops and the displacement of communities. Depleting environmental resources in every part of the country poses a serious food security challenge in the face of a rapidly growing population. Data from the Notre Dame Global Adaptation



Natural disasters like hurricanes, floods, and landslides are examples of the short-term effects of climate change, while more gradual environmental deterioration are example of the long-term effects of climate change. Numerous sectors, such as agriculture and food security, biodiversity and ecosystems, water resources, human health, human settlements and migration patterns, energy, transportation, and industry, are already experiencing the negative consequences of these occurrences. About eight key areas show evidence of climate change in Nigeria and they include:

Managing existential risk and climate resilience: The case of Nigeria | Brookings
Rankings // Notre Dame Global Adaptation Initiative // University of Notre Dame (nd.edu)

Temperature Increase: Nigeria has witnessed rising temperatures. Hotter and longer dry seasons have become common, affecting agriculture, water availability, and human health.

Rainfall Variability: The distribution of rainfall has changed. Coastal regions experience increased rainfall, leading to flooding, while the northern parts face reduced precipitation, contributing to droughts.

**Drought, Desertification and Land** 

Degradation: These are becoming more pronounced, especially in the northern part of the country. The encroachment of the Sahara Desert into Nigeria's northern regions is a significant concern. Desertification threatens arable land, livelihoods, and ecosystems.

Rising Sea Levels: Coastal regions are vulnerable to sea level rise.

Erosion and Flooding: Coastal erosion and urban flooding have intensified due to sea level rise, deforestation, and poor land management. Cities in the southern part of the country are most vulnerable.

**Loss of Biodiversity:** Climate change impacts Nigeria's rich biodiversity. Species extinction, habitat loss, and altered migration patterns affect both terrestrial and marine ecosystems.

Food Security Challenges: Erratic rainfall patterns disrupt agricultural cycles, affecting crop yields and food production. Farmers struggle with adapting to changing conditions.

Health Risks: Heatwaves, waterborne diseases, and malnutrition pose health risks. Malaria transmission patterns have also shifted due to changing climate conditions.

Nigeria's vulnerability to climate change is compounded by rising population growth, urbanization and other factors such as energy demand and industrialization. These factors are considered the underlying drivers of climate change.



Nigeria is the second largest oil and gas producer in Africa.<sup>9</sup> Crude oil exports account for 79.37% of Nigeria's export revenue in 2023.<sup>10</sup> Nigeria produced 129 metric tons of CO2 in 2023. the 4th highest emissions in Africa.<sup>11</sup>

The bulk of Nigeria's carbon emissions is from oil and gas production, through a process called "gas venting", which entails the release of unwanted gases during oil production into the atmosphere (predominantly methane). Methane is a greenhouse gas 28 times more potent than carbon dioxide. There is also "gas flaring", the practice of burning off surfaced gases, releasing carbon dioxide as a by-product that contributes to emissions.<sup>12</sup> An estimated 6.6 billion cubic metres of gas was flared in Nigeria in 2021 - making it the world's seventh largest gas flarer.13 Despite the massive production of oil and gas, Nigeria has one of the highest rates of energy poverty in the world. The World Economic Forum defines energy poverty as the "lack of access to modern energy services and products", a situation where sufficient choice is absent in accessing adequate, reliable, affordable, safe, and environmentally suitable energy services.14

Delta State on the other hand is an oil-producing state in Nigeria. The state, nests in the heart of Nigeria's oil-rich Niger Delta region, and stands as a symbol of the nation's oil wealth. With its vast oil reserves, the state has long been a significant contributor to Nigeria's economy. However, as the world grapples with the existential threat of climate change, the environmental costs of Delta State's oil production are becoming increasingly evident. Despite the urgency of addressing climate change, the government's relentless focus on oil production often comes at the expense of environmental sustainability. The state's economy has been largely built on oil revenue, with the oil and gas industry serving as the mainstay of its economy. The

https://globalcamoonatias.org/
https://populationmatters.org/news/2024/02/population-and-the-environment-in-nigeria-too-big-to-go-green/
https://nairametrics.com/2023/08/07/nigeria-loses-n373bn-in-h1-2023-ranks-7th-in-global-flaring/
https://populationmatters.org/news/2024/02/population-and-the-environment-in-nigeria-too-big-to-go-green/

Angola Tops Nigeria as Africa's Biggest Oil Producer in August\*. Bloomberg.com. 8 September 2022. Retrieved 25 November 2022.
https://businessday.ng/maritime/article/crude-oil-remains-nigerias-export-achilles-heet/
https://globalcarbonatlas.org/

extraction and processing of crude oil have brought substantial wealth to the state, fueling economic growth and development. However, this economic prosperity has come at a grave environmental cost.

The exploration and exploitation of oil in Delta State have led to widespread environmental degradation. Oil spills, gas flaring, and other industrial activities have polluted the region's air, water, and land, devastating local ecosystems and endangering public health.

Communities in the Niger Delta suffer the consequences of environmental pollution, with contaminated water sources, loss of

biodiversity, and health problems plaguing their daily lives.

Despite growing global concern over climate change, the Delta State government has often prioritized short-term economic gains from oil production over long-term environmental sustainability. The state's economic policies and development strategies continue to revolve around maximizing oil revenue, with little regard for the ecological consequences.

The government's emphasis on oil production has led to insufficient investment in renewable energy alternatives and climate change mitigation measures. While the rest of the world shifts towards cleaner energy sources to combat climate change, Delta State remains heavily dependent on fossil fuels, perpetuating its contribution to greenhouse gas emissions.



# **3.0 Assessing the Impact of Climate Change on Women**



Climate change is no longer a distant threat but a stark reality that is affecting communities in Nigeria and people of all works of life.

The climate crisis is not "gender neutral". Women and girls experience the greatest impacts of climate change, which amplifies existing gender

#### inequalities and poses unique threats to their livelihoods, health, and safety.<sup>15</sup>

Women in Nigeria, bear a disproportionate burden of the consequences brought about by climate change. These burdens range from agriculture to health and socio-economic dynamics, the effects are multi-faceted, demanding urgent attention and action.

15. Explainer: How gender inequality and climate change are interconnected | UN Women - Headquarters

### **3.1 The Impact of Climate Change on Agriculture**

Agriculture forms the backbone of many communities in Nigeria and indeed Delta State, with women playing a crucial role in various aspects of agricultural production. However, the changing climate has led to erratic rainfall patterns, prolonged droughts, and increased temperatures, significantly impacting agricultural activities. Women farmers, who often rely on rain-fed agriculture, bear the brunt of these challenges. During periods of drought and erratic rainfall, women, as agricultural workers, work harder to secure income and resources for their families. This further compounds the pressure on girls, who often have to leave school to help their mothers manage the increased burden.<sup>16</sup>

In addition, the inability to predict weather patterns and the decline in crop yields due to climate variability pose significant threats to food security and household incomes. Women, who are primarily responsible for food production and family sustenance, find themselves struggling to adapt to these changes, often facing increased food insecurity and economic hardship as a result. The regular deforestation and land-grabbing activities in the Delta region further affect the agroecology of the areas thus impacting those who are involved in some livestock agricultural activities.

## 3.2 The Health Impact of Climate Change

Climate change affects health through a multitude of mechanisms, including heat, poor air quality, and extreme weather events, as well as through meteorological changes that alter vector-borne disease, reduce water quality, and decrease food security. The health risks associated with these exposure pathways are mediated through physiologic, cultural, and socioeconomic vulnerabilities, which differ substantially between men and women.17 Research indicates that extreme heat increases the incidence of stillbirth, and climate change is increasing the spread of vector-borne illnesses such as malaria, dengue fever, and Zika virus, which are linked to worse maternal and neonatal outcomes.<sup>18</sup>

Women, especially those in rural areas, bear the primary responsibility for caring for sick family members, putting them at greater risk of exposure to these diseases. Moreover, extreme weather events, such as floods can lead to injuries, displacement, and the spread of waterborne diseases, further exacerbating health vulnerabilities. Mining activities of crude oil such as gas flaring also negatively impact the health status of women in oil-producing communities. Additionally, women spend greater amounts of time in the home and thus are disproportionately exposed to particulate matter from the use of traditional indoor stoves for cooking and heating.<sup>19</sup>

### 3.3 The Socio-Economic Impact of Climate Change

The socio-economic impacts of climate change are felt acutely by women in Delta State. Disruptions in agricultural activities force women to seek alternative livelihood options, often in the informal sector where they face exploitation and precarious working conditions. Additionally, women's limited access to resources such as land, credit, and technology (equipment) hinders their ability to adapt to changing climatic conditions and diversify their income sources. The recent flooding in many

parts of Nigeria including Delta State is a testament to the socioeconomic impact of climate change on women.

Furthermore, women are often marginalized in decision-making processes related to climate change adaptation and mitigation, despite being disproportionately affected by its impacts. This lack of inclusion perpetuates existing inequalities and undermines efforts to build resilience in vulnerable communities.

Explainer: How gender inequality and climate change are interconnected | UN Women – Headquarters
Climate change and women's health: Impacts and policy directions (unwomen.org)

www.unfpa.org
World Health Organization. Gender, climate change and health. 2014. Available from: http://apps.who. int/iris/bitstream/10665/144781/1/9789241508186\_eng.pdf.

# 4.0 Government Actions on Climate Change



Government at the federal level, have come up with several policy frameworks, institutions and laws to address the issues of climate change in the country. They include the following;

## The National Climate Change Policy (2021-2030)

The National Climate Change Policy (NCCP) of Nigeria is a comprehensive framework developed to guide the country's response to climate change. It aims to promote sustainable development while enhancing resilience to climate change impacts across various sectors of the economy. The policy prescribes sectoral and cross-sectoral strategic statements and actions, within a medium-term time framework, between 2021 and 2030, for pursuing a climate-resilient national sustainable development. On these bases, the protection of the environment becomes essential for achieving the mission and the overall goals of this National Policy: ensuring sustainable development and a climate-proofed economy through multi-stakeholder engagement and promoting a low-carbon, climate-resilient and gender-responsive sustainable socio-economic development.

The policy is subdivided into seven sections which address a general background of climate change, the Paris Agreement, goals, objectives and guiding principles, key directions for adaptation and implementation among others. This National Policy reflects the government's commitment to address the climate change challenge through various measures in different areas. It particularly provides for a Nationally Determined Contribution, following the ratification of the Paris Agreement and aiming at reducing greenhouse gas emission intensity of GDP by 20% by 2030, above all in agriculture, forestry and other land use and then optimising production, without compromising food security.

Energy is another core sector where the Policy is committed to reducing greenhouse gas emissions and improving the transition towards clean and affordable energy sources.

The Policy also aims at promoting health facilities and infrastructure that are climate resilient. Other relevant sectors in which the Policy is oriented towards the reduction of greenhouse gas emissions are industry, oil and gas, transportation routes, waste management, drinking water and wastewater treatment. To improve the financial resources to effectively respond to climate change challenges, the Government launched green bonds focused on national projects related to environment, agriculture, power and energy efficiency-transportation.<sup>20</sup>

## Paris Agreement and Other Climate Pledges

Nigeria has signed up to the Paris Agreement, the international pledge made by countries to reduce their carbon emissions. The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. It entered into force on 4 November 2016.<sup>21</sup> In its first climate policy submitted under the Paris Agreement in 2017, Nigeria pledged to reduce its greenhouse gas emissions by 20% below business-as-usual (BAU) levels by 2030.

#### Nigeria Climate Change Act 2021

The Climate Change Bill was signed into law by

former President Muhammadu Buhari in November 2021 to provide Nigeria with a legal framework for the country to achieve its climate goals, and achieve long-term social and economic sustainability, and resilience. Following the President's commitment made at the COP 26 in Glasgow of achieving net zero by 2060, the Act enacts an overarching objective of achieving net zero emissions between 2050 and 2070.<sup>22</sup> Notable clauses of the Act are as follows:

- It mandates the government to set a National Climate Change Action Plan and a five-year carbon budget (with quantified annual objectives) accordingly. Both of these are to be validated by the Federal Executive Council.
- It creates the National Council on Climate Change and defines its members and attributions. The Council is in charge of implementing the National Climate Change Action Plan. The institution will be responsible for managing the newly-instituted Climate Change Fund. The Fund will be provisioned according to debates in Parliament, and enable the running of the Council itself as well as subventions.
- It compels any private entity with 50 or more employees to put in place measures to achieve the annual carbon emission reduction targets in line with the National Climate Change Action Plans and requires the private entity to designate a Climate Change Officer for reporting. Private entities that fail to meet targets may be subject to fines.

#### **Energy Transition Plan**

The Nigeria Energy Transition Plan (ETP) is a home-grown, data-backed, multipronged strategy developed for the achievement of net-zero emissions in terms of the nation's

<sup>20.</sup> National Climate Change Policy for Nigeria: 2021-2030. | UNEP Law and Environment Assistance Platform

<sup>21.</sup> https://unfccc.int/process-and-meetings/the-paris-agreement 22. https://climate-laws.org/document/nigeria-s-climate-change-act\_5ef7

energy consumption. The Nigeria ETP sets out a timeline and framework for the attainment of emissions reduction across 5 key sectors; Power, Cooking, Oil and Gas, Transport and Industry.

Within the scope of the ETP, about 65% of Nigeria's emissions are affected.<sup>23</sup> It is expected that Nigeria's net-zero pathway will result in significant net job creation with up to 340,000 jobs created by 2030 and up to 840,000 jobs created by 2060 driven mainly by the Power, **Cooking, and Transport** sectors.

Additionally, the plan suggests that gas will play a critical role as a transition fuel in Nigeria's net-zero pathway particularly in the Power and Cooking sectors.

Furthermore, the ETP aims to use gas as a "transition fuel" with a huge increase in gas consumption for national power in household and industry sectors by 2030, before phasing out gas by 2050 in favour of renewable energy sources. However, this plan risks locking Nigeria into carbon-intensive infrastructure, with industries designed around and reliant upon gas power. Nigeria's rapidly growing population will drive huge energy demand, putting an even greater strain on the later transition to renewable energies - wind and solar.24

#### National Agency for the Great Green Wall

Nigeria is a member state of the Great Green Wall (GGW) initiative. The initiative, launched in 2007 by the African Union, aims to restore degraded land, sequester carbon and create

green jobs across the Sahel region.

The National Agency for the Great Green Wall (NAGGW) is a Nigerian federal agency under the Federal Ministry of Environment (Nigeria), established to address land degradation and desertification, boost food security and support communities to adapt to climate change in the Nigerian states of Sokoto, Kebbi, Katsina, Zamfara, Kano, Jigawa, Bauchi, Gombe, Yobe, Borno, and Adamawa.<sup>25</sup> The initiative which effectively commenced in Nigeria in 2013, is centred on the efforts to combat land degradation, drought desertification and other menace orchestrated by impacts of climate change and a strive in the implementation process to improve the livelihoods of the affected communities and reduce the apparent manifestation of poverty and building the resilience of the people on the phenomena of climate change.<sup>26</sup>

Other policy directions of the government include;

- The National Agricultural Resilience Framework
- Nigeria's National Action Plan (Nap) to Reduce Short-Lived Climate Pollutants (SLCPS) and other policy efforts of the federal government that may not be covered by this study.
- The National Livestock Transformation Plan (NLTP)

Delta state government on the other hand has made a couple of efforts to address the impact of climate change in the state. In November 2013, Delta state developed and launched a comprehensive climate change policy and framework of action to mitigate climate change's growing negative impacts in the state which at that time was considered one of the most volatile coastal regions, with worsening levels of ecological hazards, in sub-Saharan

https://energytransition.gov.ng/
https://populationmatters.org/news/2024/02/population-and-the-environment-in-nigeria-too-big-to-go-green.
https://p.wikipedia.org/wiki/National\_Agency\_for\_the\_Great\_Green\_Walls
https://ggwnigeria.gov.ng/about-us/

Africa. This policy initiative is expected to set in motion an effort to ensure the steady evolution of environmentally friendly clean energy and a green economy process that would see the state emerge as one of the most proactive and 'smart states' in Nigeria and indeed Africa within the next few years.27

Similarly, successive governments have made efforts to address climate and environmental-related issues in the state. Speaking with journalists in Asaba, the Commissioner of Environment stated that sanitation and waste management, erosion,

deforestation, flood control, pollution, climate change mitigation and adaptation, wildlife, conservation and management, among others, are some of his ministry's focus while the government is determined on its full implementation.<sup>28</sup> In another move, the Delta state government signed a memorandum of understanding, MOU with Serendib Capital UK for the restoration and preservation of the State's Manarove Forest and its Ecosystem.29

### 4.1 Level of the Implementation of these Strategies

The level of implementation of policies on climate change in Nigeria varies across different sectors and regions. Nigeria, like many other countries, has made commitments to address climate change through various international agreements, including the Paris Agreement. Additionally, the Nigerian government has developed several policies and frameworks aimed at mitigating greenhouse gas emissions, adapting to the impacts of climate change, and promoting sustainable development. However, the implementation of these policies has been marred with numerous challenges such as;

- Constraints in terms of financial resources. technical capacity, and institutional capabilities needed to effectively implement climate change policies.
- The problem of coordination among different stakeholders.
- Overlapping mandates, conflicting priorities, and inefficiencies in policy implementation.
- Weak enforcement mechanisms lead to limited compliance and enforcement of climate-related measures.

https://www.environewsnigeria.com/tackling-climate-change-in-delta-state/
https://punchng.com/delta-commits-to-re-engineer-environmental-policies-for-renewable-efficiency/
https://www.vanguardngr.com/2024/02/delta-govt-sets-pace-on-conservation-environmental-sustainability/

# **5.0 Outcomes from the Citizen's Survey**



Following the review of literature on the impact of climate change on women in Delta state, the efforts of the federal and state governments towards addressing the challenges in terms of adaptation and resilience strategies, and in consolidating this study, the team carried out a citizen's survey to interrogate the knowledge of women on climate change in line with the objectives of the study. The population frame included all women living in Delta State.

A random selection sampling technique was deployed to select participants for the study. An initial target sample size of 200 respondents made up the sampling population however, a total of one – hundred and fifty-one (151) respondents participated in the study.

#### Socioeconomic Characteristics of Respondents

#### Age and Marital Status

The age distribution of the respondents generally cuts across several age categories to elicit a cross-generational perspective on the impact of climate change. Analyzed data reveals that 2 age categories accounted for almost half the total number of respondents. Respondents who were 41 years and older accounted for 24.5 percent while those who were 26 to 30 years old accounted for 23.84 percent of the total number of respondents.

Similarly, most women interviewed were single (45.7%) while those married accounted for 42.38% of the respondents.



### Analysis of Marital status of respondents by Age (%)

#### **Educational Background**

The majority of the respondents (98%) interviewed had tertiary education (50.99%) and secondary education (47.68%)



#### Length of Stay in Delta State

The distribution of the number of years for which the respondents have lived in Delta State seeks to elicit responses from respondents who can comment on their observations of climate change based on their varied years of experience while living in the state. In addition, the varied number of years ranging from below 5 years to over 21 years indicates that the responses reflect recent perceptions about climate change-related activities as well as long-term perceptions.

When asked how long they have been in the study area, 32.45% of the respondents have lived in Delta State for over 21 years. This was followed by those who have lived in Delta State between 16-20 years (27.81%). This implies that having stayed a significant duration of time in the state, they will be able to speak to the challenges of climate change, what they have observed and how it has impacted their lives.



#### **Sustainable Environmental Practice**

Most of the respondents (74%) stated that they are not actively involved in any sustainable environmental practice. It is possible that they are not involved in sustainable environmental practices because they are not aware of such or because the infrastructure is not in place.



#### **Perception of the Impact Areas of Climate Change**

Respondents shared their opinions on the areas where they perceive climate change has impacted the most as it affects their lives. Most of the respondent (56%) attested to regular changes in weather as the main area where climate change has impacted their lives. Suggesting that they are largely involved in direct or indirect agricultural enterprises. About 97% of the respondents alluded to observing changes in weather patterns.





Similarly, almost all the women interviewed (99%) claimed to have not received support and training related to sustainable environmental practices in their communities. This perhaps may be responsible for the low level of the practice of environmentally sustainable practices in their communities. In addition, 98% of the respondents claimed to have no access to government or community programs aimed at promoting sustainable environmental practices, especially those targeting women.





# 6.0 Conclusion and Recommendations



## **6.1 Conclusions**

Climate change is adversely affecting women in Delta State in varying proportions. The impact of climate change presents significant challenges for women in Nigeria, particularly in Delta State, where the effects are acutely felt across various aspects of their lives. From health to agriculture, livelihoods, socioeconomic opportunities, and overall well-being, women bear a disproportionate burden of the impacts, exacerbating existing vulnerabilities and inequalities.

Rising temperatures and changing rainfall patterns create conducive environments for the spread of vector-borne diseases such as malaria and dengue fever, disproportionately affecting women in Delta State. Women, who often serve as primary caregivers, face increased risks of exposure to infectious diseases and struggle to access adequate healthcare resources, especially in rural areas. As key participants in agricultural activities, women in Delta State experience disruptions in farming practices due to erratic weather patterns caused by climate change. Prolonged droughts, erratic rainfall, and extreme weather events jeopardize crop yields and food security, with women bearing the primary responsibility for household food production and sustenance.

Climate-related disruptions in agriculture force women to seek alternative livelihood options, often in the informal sector where they face exploitation and precarious working conditions. Limited access to resources such as land, credit, and technology further hinders women's ability to adapt to changing climatic conditions and diversify their income sources in Delta State.

The socio-economic impacts of climate change



perpetuate existing inequalities, as women in Delta State are marginalized in decision-making processes related to climate change adaptation and mitigation. Lack of inclusion in governance structures and limited access to education and training opportunities hinder women's ability to participate fully in socio-economic development initiatives.



Women's overall well-being and resilience are compromised by the intersecting impacts of climate change on health, livelihoods, and socio-economic opportunities. In Delta State, women face heightened vulnerabilities and reduced adaptive capacity, making it imperative to address the gender dimensions of climate change through gender-responsive policies and interventions.

Addressing the impact of climate change on women in Nigeria, particularly in Delta State, requires a comprehensive and gender-responsive approach that recognizes the unique challenges faced by women and promotes their active participation in climate resilience efforts. By empowering women and ensuring their inclusion in decision-making processes, Nigeria can work towards building more resilient and sustainable communities that promote gender equality and social justice.

### **6.2 Recommendations**

Following the outcome of the study, the following recommendations are put forward.

1

The Delta State government should formulate comprehensive climate change action plans that prioritize mitigation and adaptation strategies. These plans should integrate climate considerations into all sectors, including agriculture, water resources management, environmental protection, infrastructure development, and disaster risk reduction.

The government should invest in resilient infrastructure that can withstand the impacts of climate change, such as floods, storms, and sea-level rise. This includes upgrading drainage systems, strengthening coastal defences, and building climate-resilient housing and infrastructure.

3

Implement programs to promote sustainable agricultural practices that enhance resilience to climate change, such as conservation agriculture, agroforestry, and water-efficient irrigation techniques. Provide training and support to farmers, with a focus on women, to adopt climate-smart agricultural practices.



Enhance early warning systems to improve preparedness and response to climate-related disasters, such as floods, droughts, and extreme weather events. Ensure that early warning messages are accessible and understandable to all, including women and vulnerable populations.



Provide support and incentives for the development of climate-resilient livelihoods, particularly for women in rural areas. This includes promoting income-generating activities such as eco-tourism, sustainable fisheries, and renewable energy projects.

6

Integrate climate change education into school curricula and community outreach programs to raise awareness about the impacts of climate change and the importance of adaptation and mitigation measures. Foster a culture of climate resilience and environmental stewardship among citizens.

7

Civil society organizations should advocate for the adoption and implementation of climate-friendly policies and practices at the local, state, and national levels. Engage with government officials, policymakers, and other stakeholders to influence decision-making processes and prioritize climate action.



Provide training and capacity-building programs to empower communities, especially women, with the knowledge and skills needed to adapt to climate change. Offer workshops, seminars, and educational materials on topics such as sustainable agriculture, disaster preparedness, and renewable energy.

Implement community-based adaptation projects that address the specific needs and vulnerabilities of local communities, particularly women. Work collaboratively with communities to identify adaptation priorities and co-design solutions that build resilience and enhance livelihoods.

Mainstream gender considerations into climate change initiatives and ensure that women's voices are heard and their needs are addressed. Advocate for gender-responsive policies and programs that promote women's participation, leadership, and empowerment in climate resilience efforts.

Conduct outreach and public awareness campaigns to inform and mobilize citizens about climate change issues and solutions. Use media, social media, and community events to disseminate information, raise awareness, and inspire action on climate change mitigation and adaptation.



