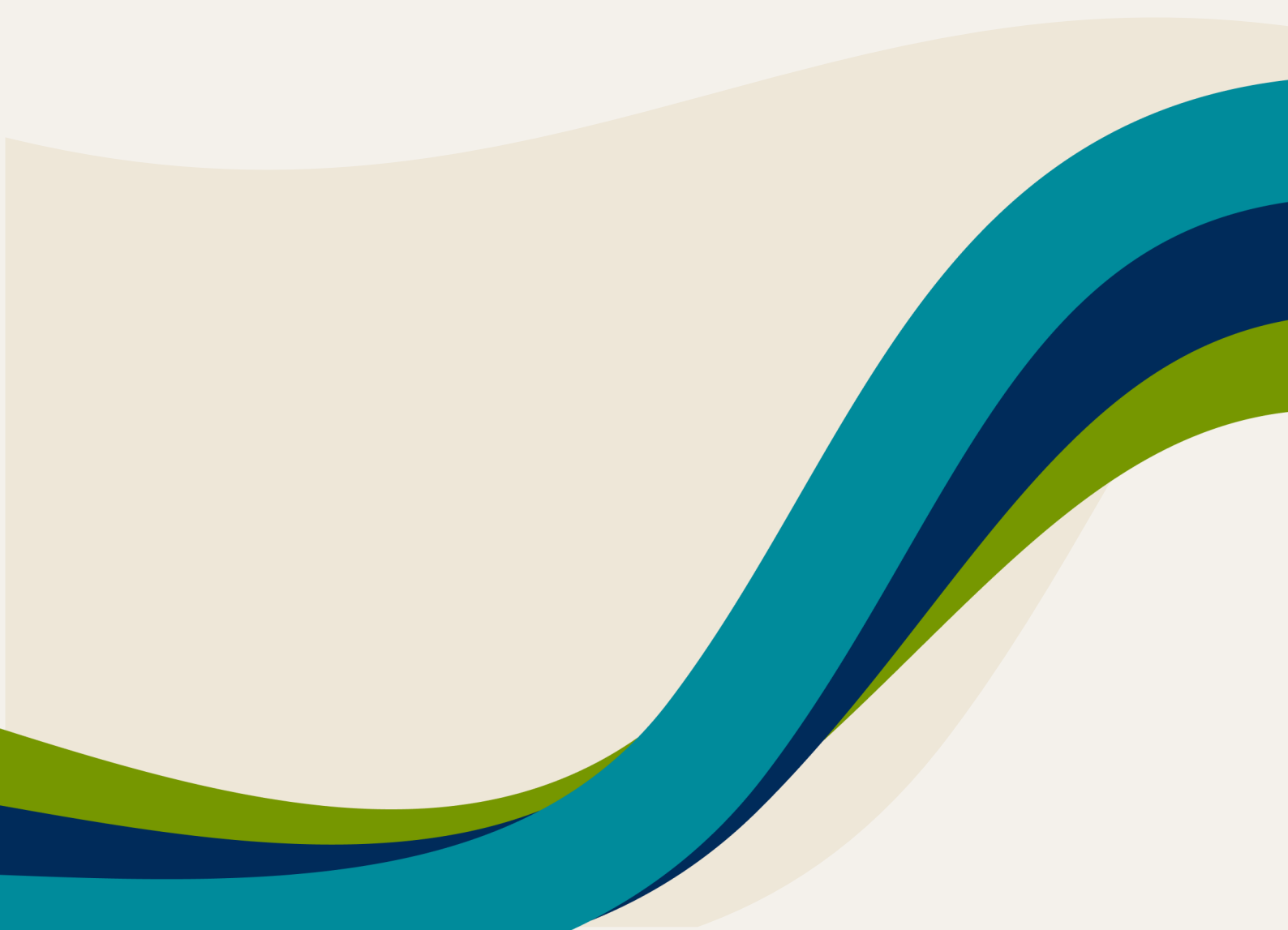


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RESEARCH REPORT



Evaluating the Impact of Climate Change on Women and People with Disabilities

Social Development Direct and Preston Associates
for International Development



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Acronyms

ACReSAL	Agro-Climatic Resilience in Semi-Arid Landscapes
AfDB	African Development Bank
CBO	Community Based Organisation
CSO	Civil Society Organisation
EVA	Education as a Vaccine
FCDO	Foreign, Commonwealth & Development Office
FGD	Focus Group Discussion
FOMWAN	The Federation of Muslim Women’s Associations in Nigeria
GBV	Gender-Based Violence
GEDSI	Gender Equality, Disability and Social Inclusion
GIFSEP	Global Initiative for Food Security Programme
GIS	Geographic Information System
IDP	Internally Displaced Persons
IFAD	International Fund for Agricultural Development
IPV	Intimate Partner Violence

KII	Key Informant Interviews
LGA	Local Government Area
MDA	Ministries, Departments and Agencies
NAPGCC	National Action Plan on Gender and Climate Change
NAPRI	National Animal Production Research Institute
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organisation
OPD	Organisation of Persons with Disabilities
PACE	Partnership for Agile Governance and Climate Engagement
QA	Quality Assurance
RQ	Research Question
SDDirect	Social Development Direct
SEAH	Sexual Exploitation, Abuse and Harassment
TAG	Technical Advisory Group
ToR	Terms of Reference
UNDP	United Nations Development Programme

UNFCCC	United Nations Framework Convention on Climate Change
WEP	Women Environmental Programme
WRO	Women's Rights Organisation



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Executive Summary

This study focuses on the impact of climate change on women and people with a disability in Kano, Kaduna and Jigawa states in northern Nigeria. It was commissioned by the UK Foreign, Commonwealth and Development Office (FCDO) in 2024 to inform a governance programme, the Partnership for Agile Governance and Climate Engagement (PACE), but evolved to take on a broader mandate around climate change impact, whilst retaining a strong focus on the lived experience of women and people with disabilities in the three states.

The study took a mixed methods approach involving a comprehensive literature review, key informant interviews (KIIs) and focus group discussions (FGDs) with national and state level stakeholders and local participants, including women and people with disabilities and their representative organisations. In total, 22 KIIs and 15 FGDs took place across the three states in rural and urban areas, and five KIIs were conducted at the national level with non-governmental organisations (NGOs). A Technical Advisory Group (TAG) supported the design and analysis phases, and ethical approval was granted by Nigerian authorities at the national and state level.

The study focuses on the following research questions:

- RQ 5) How do people understand the causes of climate change?
- RQ 1a) What are the impacts of climate change on women and people with disabilities in the north-west regions of Nigeria, with a focus on Kano, Kaduna and Jigawa? Does climate change act as an amplifier of existing socio-economic inequities? How?
- RQ 1b) What are the trends and future projections?
- RQ 2) Does discrimination and a lack of inclusion based on additional aspects of identity (e.g. age, ethnicity or religion) multiply the impacts of climate change for women, girls and people with disabilities?
- RQ 3) What are the key barriers to preventing and mitigating the impact of climate change on these groups?
- RQ 4) What interventions¹ work in preventing and mitigating the impact of climate change on these groups across the Global South? Who are the key players/stakeholders – state and non-state?

¹ The original wording focused on 'governance interventions', which was adjusted as noted. This adjustment was intended to avoid duplication with the PACE team's gender and inclusion analysis.

Study limitations include having a small sample size, despite efforts to include a cross section of women and people with disabilities. It was also challenging to capture data concerning persons with intellectual and psychosocial disabilities. Overall, there are significant gaps in existing research and policy interventions regarding the impact of climate change on people with disabilities.

Findings show that research respondents link climate change to personal experiences like extreme heat and floods and identified key causes such as deforestation, emissions and the will of God. Kaduna respondents showed higher awareness of climate change compared to the other states. Human driven activities like bush burning, industrial emissions and poor waste management are seen as major contributors to climate change.

The research found that climate negatively impacts multiple aspects of life, especially for women and people with disabilities. Impacts are felt both inside and outside the home and relate to mobility, conflict, migration and displacement, access to services, livelihoods and domestic responsibilities (and a push towards risky or insecure income generating activities), health, family relationships as well as community relationships and participation. The impacts are also felt both directly (e.g. through the loss of livelihoods) or indirectly (e.g. by having less social capital leading to increased financial insecurity). The research also notes that everyone experiences the negative effects of climate change but due to the multiplier effect, women and people with disabilities are particularly badly affected due to the way that existing inequalities are exacerbated.

Women and people with disabilities engaged in the study report that there has been some progress over the last ten years, but there are ongoing challenges. A clear gap exists between the perspectives of policymakers /duty bearers and people with lived experience at the grassroots level. Policymakers and NGOs report progress in infrastructure, healthcare, climate awareness and social inclusion but women and people disabilities face worsening conditions due to corruption, economic instability, weak interventions and environmental pressures. There is a level of optimism about future improvements, but research respondents also shared concerns about government commitment, policy implementation and the role of NGOs in ensuring sustainable change. It was also noted that some regions have benefited from targeted interventions more than others. Many respondents expressed hope that with God's help, positive change would occur despite existing challenges.

Characteristics such as age, motherhood, religion, location and socio-economic status and types of disability multiply the impacts of climate change for women, girls and people with disabilities. Respondents highlighted how climate change impacts existing risks of violence, especially for younger women and girls, mothers, and those living in rural communities because of their dependence on climate sensitive livelihoods. For example, younger girls are at increased risk of sexual exploitation, abuse and harassment and resorting to transactional sex during insecurity and crises, especially when displaced. Yet, in some cases, religious and cultural restrictions prevent women from participating in economic and socio-political activities thereby reducing their resilience to climate impacts.

The research found that climate interventions are often poorly resourced, male dominated and sideline women and people with disabilities. This is due to a lack of consideration of barriers (environmental, institutional and attitudinal) that prevent their meaningful engagement in interventions and programming. Barriers include poor infrastructure (including inaccessible shelters, limited transport), inaccessible communications and information, as well as harmful social and cultural norms and gender-based violence. Respondents also noted that organisations of persons with disabilities face substantial capacity challenges that hinder their ability to engage stakeholders effectively, and that they do not represent people with diverse disabilities (e.g. those with psychosocial and intellectual disabilities) meaning that the specific needs of these subgroups are often completely overlooked in climate change interventions.

There are diverse climate adaptation efforts happening across Kano, Kaduna and Jigawa, implemented by a diverse set of actors. These include flood prevention, afforestation, climate smart agriculture, pollution control and humanitarian relief efforts. These efforts are implemented by government, international donors, NGOs as well as community-based organisations and local leaders. The research found, however, that although most of these interventions aim to reach marginalised groups, accessibility and sustainability issues persist. Government has a critical role to play by establishing Ministries, Departments and Agencies at federal and state levels, and NGOs and community leaders are vital to delivering inclusive and grassroot focused climate interventions including accessible community sensitisation activities.

Moving forward, addressing the impacts of climate change on women and people with disabilities, requires a coordinated multi stakeholder approach, at different levels, to ensure inclusive and sustainable solutions. The combined efforts of government agencies, international donors, NGOs, civil society groups, traditional leaders, and research institutions are necessary to implement sustainable solutions that recognise the complexity and interconnected nature of the impacts, and the specific needs of marginalised groups. For interventions to be truly effective, there must be improved policy enforcement, increased funding, a clear commitment to and strategy for more inclusive approaches, and stronger collaboration among stakeholders. Without these critical elements, vulnerable populations will continue to be left behind in climate adaptation effort



1. Introduction

This study focuses on the impact of climate change on women and people with disability in Kano, Kaduna and Jigawa states in northern Nigeria. The research will serve as a key contribution to delivering on the Foreign, Commonwealth & Development Office (FCDO's) fundamental commitment to Leave No-one Behind and to meet its various commitments on equalities. It is anticipated that the learnings from this assignment will be of value to a range of teams and programmes in FCDO Nigeria.

The research was originally commissioned to "inform the selection and design of issue-based interventions and coalition building under the new Partnership for Agile Governance and Climate Engagement (PACE) programme"². During inception, in response to changing circumstances, FCDO agreed with the research team to pivot towards a broader focus beyond governance, and with a particular emphasis on data collected from people with day-to-day experience in living with the effects and impact of climate change. The PACE team requested the inclusion of a supplementary ("S") research question (RQ S) on awareness / understanding of the causes of climate change in the primary data collection. Some adjustments were made to the research questions in response to the above:

- RQ S) How do people understand the causes of climate change?
- RQ 1a) What are the impacts of climate change on women and people with disabilities in the north-west regions of Nigeria, with a focus on Kano, Kaduna and Jigawa? Does climate change act as an amplifier of existing socio-economic inequities? How?
- RQ 1b) What are the trends and future projections?
- RQ 2) Does discrimination and a lack of inclusion based on additional aspects of identity (e.g. age, ethnicity or religion) multiply the impacts of climate change for women, girls and people with disabilities?
- RQ 3) What are the key barriers to preventing and mitigating the impact of climate change on these groups?
- RQ 4) What interventions³ work in preventing and mitigating the impact of climate change on these groups across the Global South? Who are the key players/ stakeholders – state and non-state?

² PACE includes targeted climate interventions alongside broader interventions, throughout which there is a requirement to mainstream gender equality, disability and social inclusion (GEDSI) and climate considerations.

³ The original wording focused on 'governance interventions', which was adjusted as noted. This adjustment was intended to avoid duplication with the PACE team's gender and inclusion analysis.

2. Methodology

This research was conducted in three steps:

Step 1 involved a comprehensive literature review. The literature review examined climate change intersections with gender, disability and socio-economic factors, with particular focus on Kano, Kaduna and Jigawa states, synthesising existing knowledge and identifying gaps.

Step 2 consisted of primary research involving Key Informant Interviews (KIs) and Focus Group Discussions (FGDs) with national and state level stakeholders and local participants (including women and people with disabilities) across the three focus states. Both phases addressed the four core research questions established in the report's introduction.

Step 3 comprised the analysis of the primary data, validated with TAG and FCDO members, and triangulated with the secondary sources. These key findings and analysis are captured in our report.

Literature (secondary) review

The literature review employed targeted search terms derived from research questions, refined during the process using Boolean operators⁴. Primary terms focused on climate change impacts on women/people with disabilities, vulnerability, and regional specificity (Kano/Kaduna/Jigawa). Secondary terms broadened to regional climate assessments, adaptation strategies, and socio-economic impacts across West Africa.

Searches spanned academic databases (ScienceDirect, Sage Journals, and Google Scholar among others) alongside climate-specific repositories and general search engines (Google/Bing) for grey literature. Large language models (Copilot/ChatGPT) were used to identify overlooked sources, but not for content creation. Documents were systematically catalogued using a coding sheet tracking publisher, organisation type, and publication date for structured analysis. To avoid duplication with PACE's gender equality and social inclusion (GESI) study, our analysis did not repeat a review of the national or state policies and legislation, which was already well covered.

Primary research

The study engaged a small number of federal-level civil society stakeholders to identify national priorities and state-level actors. At state level, KIs targeted government agencies, civil society organisations (CSOs), organisations of people with disabilities (OPDs), and

⁴ Boolean operators are words used in search engines and databases that are used to refine keywords. The operators used for this research are "AND" and "OR".

women's rights organisations (WROs), while FGDs involved community members, prioritising diverse representation by gender, age, location, and disability type, with particular care taken to respect participants' privacy and the sensitive nature of disability disclosure. Table 1 provides a summary (see Annex 1 for list of organisations).

Table 1: Summary of KIIs and FGDs conducted

Level	KII with NGOs	KII with Government	FGD with Women without Disabilities	FGD with Women with Disabilities	FGD with Men with Disabilities
National	5	0	0	0	0
Kano	5	4	4	2	1
Kaduna	3	3	2	1	1
Jigawa	3	4	1	1	2
TOTAL	16	11	7	4	4

A Technical Advisory Group (TAG) comprised of advocacy groups representing women, people with disabilities and young people supported the research team to identify relevant organisational representatives at state level for these KIIs and assisted with outreach and convening (see Annex 2 for TAG member organisations).

2.1.1. Tools and training

Ethical approval for the research was granted at national and state levels. Context-specific instruments were developed collaboratively with TAG, PACE, and FCDO input, then refined through a three-day researcher training (covering methodology, ethics, and thematic focus) and a one-day field pilot.

2.1.2. Data collection

Six researchers conducted 22 KIIs and 15 FGDs across Kano, Kaduna, and Jigawa states (in rural and urban locations), with state supervisors ensuring quality. Translation (Hausa-English) and accessibility supports (e.g., sign language interpreters) were systematically provided. An additional five national-level KIIs were conducted with non-governmental organisations (NGOs). More information about the demographic profiles of the research participants is presented in Annex 3.

2.1.3. Data analysis and quality assurance

Transcribed data underwent daily cleaning, Dedoose coding via a research-question matrix, and incremental analysis. A three-day co-analysis workshop with SDDirect / Preston teams synthesised findings, and headlines presented to TAG and FCDO for validation. Multi-tier quality assurance (QA) included real-time field checks, data manager review, and final validation by a disability inclusion expert.

Limitations

This research faced several methodological and scope-related limitations that influenced findings. These can be summarised as:

- Owing to budgetary limitations, the study was conducted with a relatively small sample size drawn from specific geopolitical zones within the study area. Although deliberate efforts were made to include a diverse cross-section of women and individuals with disabilities, the findings should not be considered generalisable to the wider population.
- People with diverse disabilities were included in the study, but it was challenging to capture perspectives of climate change impacts from persons with intellectual or psychosocial disabilities. Research participants never explicitly made reference to this type of disability, so it is a clear gap in our findings.
- There were also data gaps in relation to policy interventions (and their effectiveness). Furthermore, the study faced challenges in isolating and attributing specific impacts directly to climate change.
- The secondary literature review revealed significant gaps in existing research, particularly regarding the impacts of climate change on people with disabilities and the availability of reliable, up-to-date data on flooding in Nigeria⁵. While there is literature focusing on how climate change affects women and girls, there is very limited information addressing its impacts on people with disabilities.

⁵ Furthermore, the literature highlights that available data on flooding in Nigeria is often outdated and insufficient, relying heavily on poorly designed surveys that focus on urban areas rather than rural regions, which are more severely affected by flooding (Akewushola, 2023).

3. Findings/discussion

This section presents the findings from the primary data collected through KIIs and FGDs conducted at both national (Federal Capital Territory) and state level (in Kano, Kaduna, and Jigawa), triangulated with the secondary data. A total of 27 KIIs and 15 FGDs were conducted, offering rich qualitative insights into participants' lived experiences, perspectives, and challenges related to climate change, gender, disability, and socio-economic factors.

3.1 How do people understand the causes of climate change? (RQ S)

- Respondents linked climate change to personal experiences with extreme heat, drought and floods, identifying key causes such as deforestation, emissions, and the will of God.
- Kaduna respondents showed higher awareness of climate change causes compared to other states.
- Human-driven activities like bush burning, industrial emissions, and poor waste management were seen as major contributors to climate change.

The study reveals growing public recognition of climate change, with FGD respondents accurately linking its effects to both observable environmental changes and specific anthropogenic causes. Respondents across states reported direct experiences with climate impacts from record-breaking 44°C temperatures to erratic droughts/floods which they associated with three key causes: deforestation, emission of gases, and the will of God. The most vulnerable groups, including people with disabilities, were identified as experiencing these compounded effects most severely.

Climate change awareness varied across the three states, with Kaduna showing notably higher levels of understanding. It is important to note that most of this data was drawn from the FGDs, as the KIIs did not include this specific question. The findings suggest that awareness and understanding of climate change appeared to be higher among FGD participants in Kaduna State compared to the other two states, although respondents across all three states demonstrated some level of understanding. This may be influenced by Kaduna having experienced more climate-related interventions than the other states (TVC News, 2025) or potentially to higher levels of education among Kaduna FGD participants; however, education levels were not surveyed so this cannot be determined.

3.1.1. Deforestation

Some FGD respondents identified deforestation as a major driver of climate change in Nigeria, linking tree loss to rising temperatures, habitat destruction, and disrupted ecosystems. Respondents noted that while deforestation was restricted in the 1980s–1990s, recent years have seen accelerated forest clearance without replanting, exacerbating climate impacts. Many emphasised how the loss of trees has intensified extreme heat, contrasting past cooling effects of forests with current conditions. Others tied bush burning, a direct cause of deforestation, to habitat degradation and climate disruption, citing its role in releasing stored carbon and altering local weather patterns.

3.1.2. Emission of gases

Respondents identified multiple human-driven emissions, from bush burning to industrial activities, as accelerating climate change, with direct consequences for ecosystems, health, and extreme weather events. Bush burning, a widespread practice in Nigeria, releases significant carbon dioxide and other pollutants, exacerbating deforestation and habitat loss while contributing to greenhouse gas concentrations equivalent to coal-fired power stations. Participants linked this to the depletion of the ozone layer and increased wildfires, noting how the absence of tree cover intensifies local heat and disrupts rainfall patterns.

Human activities like waste burning and industrial emissions were also singled out as major climate threats, with respondents drawing direct connections to health crises and policy failures. Participants highlighted how open burning of trash releases toxic pollutants, worsening air quality and causing respiratory diseases like chronic coughing and lung conditions — issues exacerbated by Nigeria’s limited waste management infrastructure. Industrial emissions, particularly from fossil fuel-dependent sectors (e.g., cement production and flaring), were cited as accelerating global warming, with many noting the lack of enforcement of environmental regulations despite Nigeria’s international climate commitments.

At a global level, some respondents also pointed to modernisation’s role, where industrial expansion, rapid urbanisation, and Westernised consumption patterns are driving climate change. Respondents specifically traced how factory emissions, sprawling concrete landscapes, and resource-intensive lifestyles create compounding pressures.

3.1.3. Will of God

A small minority of FGD respondents attributed climate change to divine will, viewing extreme weather as an expression of God’s judgment or sovereignty. A small but distinct group across the three states believed phenomena like droughts and temperature fluctuations were acts of God rather than consequences of human activity. Some framed these changes as divine responses to human sin, suggesting that repentance, not policy or behavioural shifts, could mitigate climate disruptions.

3.2 What are the impacts of climate change on women and people with disabilities in the north-west regions of Nigeria, with a focus on Kano, Kaduna and Jigawa? Does climate change act as an amplifier of existing socio-economic inequities? How? (RQ 1a)

- Climate impacts multiple aspects of life inside and outside the home, including mobility, conflict, migration, access to services, livelihoods, poverty, health, relationships and community participation for the people of Kano, Kaduna and Jigawa.
- Climate change impacts are felt both directly (e.g. loss of livelihoods) and indirectly (e.g. reduced social capital leading to increased financial insecurity)
- Everyone experiences the negative effects of climate change, but women and people with disabilities are particularly badly affected due to the way that existing inequities are exacerbated – the multiplier effect

3.2.1 Access to services

Climate change impacts on local communities' access to services in multiple ways and everybody is affected directly or indirectly. Health and education were the services most commonly cited as being disrupted, although occasional reference is made to other service areas such as fire service or waste collection. Research respondents commonly referred to flooding as the cause of service closures (e.g. schools sometimes being repurposed as temporary shelters for flood evacuees or closing because the actual school premises are flooded) or people facing longer journeys to access services. Roads can become impassable (see section 3.2.8). Evidence shows that flooding also disproportionately affects vulnerable populations, including women and people with disabilities (Lucas, 2021). Studies have shown that Jigawa State is particularly prone to flooding, with recent events such as the devastating floods from August to September 2022 underscoring the challenges faced by displaced pregnant women and mothers (Akewushola, 2023; Babaji, 2022). There are reports of women in these circumstances giving birth on bare floors in government-run camps and struggling to access postnatal care or adequate food (Babaji, 2022).

Even before considering climate impacts, people with disabilities tend to experience higher costs in accessing services. For example, FGD participants described how people with disabilities may be required to travel greater distances to access specialist schools, pay for assistive devices or scans, or perhaps for an assistant to support them to access services. These costs are liable to increase as a result of continuing extreme weather conditions. This is supported by wider global literature, which show that access to healthcare services becomes severely compromised for people with disabilities following climate events, due to the

destruction of critical health infrastructure and the limited accessibility of the remaining services (UNFCCC, 2009).

Insufficient accommodation is made to assist people with disabilities in accessing health care. Whilst this issue affects all health conditions, it becomes more pronounced when climate impacts exacerbate health complaints. One research participant described the communication barriers that she experiences as a person with hearing and speech impairments in clinics and hospitals where there are no sign language interpreters and hospital staff cannot understand or communicate with patients, many of whom cannot read or write.

Gendered differences in access to services are also evident. Examples were raised concerning the impact on girls' access to school in the context of climate change, both as a result of water scarcity and girls' hygiene needs, as well as girls dropping out of school in order to assume the increased burden associated with household water collection. Existing research further underscores how climate events exacerbate gender inequalities, with girls more likely to be kept home to fulfil gender-specific roles or due to economic pressures that prioritise boys' education over girls (Amanchukwu, et.al., 2015; UNFCCC, 2009).

The burden of seeking access to health care is multiplied for women due to their care-giver roles in the family, especially in rural settings. This means they more frequently need to engage with health services for both them and their children or older relatives, including accessing obstetric care.

"I work with the ministry of health, ...during the last rainy season, climate change affected most of the primary health centres – most of their roofs were off. The staff were displaced – they cannot provide health services. The women and children were affected – they cannot receive immunisations. [...]. All the equipment were destroyed by rain. Women cannot attend anti-natal clinic; they tend to deliver at home. They die when they came to deliver because there was no care, and outbreaks of disease" (KII with WRO, Kaduna)

Over-utilisation of services caused by climate related health conditions (e.g. malaria) can also lead to service providers being overwhelmed. Indirect impacts of climate change also affect access, as people whose livelihoods have been undermined by climate change have less money to pay for transport or service fees (e.g. school uniforms).

3.2.2 Livelihoods

Climate related flooding and drought both have a major impact on the agriculture value chain, which underpin the livelihoods of the majority of people across the three states. With devastating impact on both crops and livestock, research participants described how these climatic conditions directly undermine the livelihoods of the local population, as well as causing loss of housing, displacement, infrastructural damage and other secondary effects that have further consequences on livelihoods and financial insecurity.

Women and girls in Nigeria, especially those in rural areas and in the North, are particularly affected by these climate-related disasters, which exacerbate existing inequalities, due to their household responsibilities and reliance on small home-based businesses (Babaji, 2022; Akewushola, 2023). Flooding and drought greatly damage agriculture, a key source of revenue for many Nigerians, especially poor subsistence farmers who are predominantly women (Onwutuebe, 2019). Additionally, changes in rainfall patterns further impact women's agricultural activities, food security, and water access, compounding the challenges they face in maintaining their livelihoods (Nnadi et al., 2019). In addition, because women and girls bear household and caring responsibilities, it makes them less able than men to adapt via migration or diversification into other forms of livelihoods (Onwutuebe, 2019). Women involved in livelihoods such as fish processing and food preparation, are also greatly affected by climate change since resources such as firewood used for processing are impacted by changing climatic conditions (NEST, 2011).

People with disabilities are employed in a wide range of sectors and experience the same challenges to their livelihoods as people without disabilities, as well as some that are specific to their particular impairment. Transport options that may be essential for people with disabilities are reduced during very wet weather. FGD data highlights how both women and people with disabilities often make their livings through small businesses selling drinks or snacks, which can be adversely affected by such conditions as well as by erratic electricity supply. One man with disabilities referenced discrimination in the form of people not wanting to use his repair services. Examples from the research participants illustrated how extreme climatic conditions make it harder for people with mobility impairments to work if they are in a wheelchair, on crutches, on a roller board or without any assistive device and forced to pull themselves around on the ground.

"On income generation, because we hawk different kinds of items we require shade to wait under, the trees that we usually sit and wait under have been cut down and so during the hot season, one must look for shade but often shade is in places where you hardly get noticed and this affects our sales, especially for those of us that ride on roller boards to sell stuff. [When] the weather is extremely hot and sunny, we cannot get around on our roller boards and have to wait for the temperatures to drop, this affects our income as well." (FGD with women with disabilities, Kano)

Some evidence emerged of the way that climate impacts are forcing people with disabilities and women into hard decisions around their survival and coping mechanisms. One KII respondent noted that people with disabilities face greater safety and security risks (for example, the threat to life presented by flooding or conflict, the destruction of safety nets), creating dilemmas in terms of the choices they make between prioritising their safety over locations that might be more compatible with their livelihoods. Others noted that people with disabilities are more likely than their peers to be involved in begging, and this is made even harder due to climatic conditions. Similarly, some research participants described how women may be forced into begging when their usual income generating activities (such as small-scale poultry production or businesses selling food), are undermined by climate change. Those who are forcibly displaced are often at risk.

"During rainy season, most women go to the farm to produce what they would eat, and when there is no farming and they have eaten all their food [...] they migrate to the urban centres to search for work. They wander around, they end up begging because they don't have food to eat. They can't do what they usually do in the farm because of climate change impact and insecurity. Because the climate has changed drastically, [...] they wander from one village to another in search for food. They are really incapacitated. They can't even feed themselves. They don't know where to go to. No help. No aid." (KII with WRO, Kano)

Structural and climate-related barriers significantly hinder access to credit and land, with particularly adverse effects on women and people with disabilities, ultimately limiting their ability to build climate-resilient livelihoods. More than one research participant noted that access to credit is reduced when there are widespread crop failures, due to the significance of the agrarian economy in all three states, and that this can particularly affect women and people with disabilities both as borrowers, but also as people that lend on credit to their customers. Secondary data show that women's access to land is crucial for diversifying livelihoods and building resilience against climate-related shocks. However, limited property and land tenure rights often force women to work on less productive land, restricting their ability to access agricultural extension services and climate change information (Bafinga, 2008). In Nigeria, despite women carrying out 70% of agricultural labour, 50% of animal husbandry activities, and 60% of food processing, they have access to less than 20% of available agricultural resources (Federal Ministry of Education, 2021). These structural barriers significantly limit women's ability to participate effectively in climate adaptation and maintain resilient livelihoods (Brody et.al., 2008; FAO, 2011).

3.2.3 Poverty and food security

Compounding the impact of climate change on livelihoods, the availability of food generated through subsistence production is also adversely affected by climate conditions. Like agricultural production, the kind of subsistence 'backyard' farming often led by women is also affected by drought, resulting in reduced availability of both small animals and vegetables. As a result of crop and livestock losses at both levels, household food insecurity is affected not only by reduced access (less household income meaning that there is less money available to spend on food), but also because of reduced availability. One KII described this essential front-line role in food production thus: *"when you look at our society, especially in rural settings, you will see that women are at the bottom-most part of the food chain."* (KII with CSO, Kano)

People with disabilities can struggle to access to food due to the environmental barriers they face in navigating the neighbourhood as a result of climatic conditions. FGDs with people with disabilities cite extreme heat (especially for people with albinism) and extreme rain as barriers, describing themselves as "starved in our houses because we cannot go out to find what to eat" (FGD with men with disabilities Kaduna Urban). Respondents in the same group also note that: *"We find it difficult to use firewood and charcoal because the soil will be wet, and we can't cook in our rooms. In such situations, we are left to suffer".* In a

similar vein, women can face barriers to food security when markets are closed due to flooding, reducing the availability of food.

Participants described how hardship and crop failure lead people to reduce charity to others, as they have less food to give. The impact of this⁶ is felt most acutely by those depending most on alms – that is, those involved in begging. Whilst our study suggested that begging needs to be understood in a context specific framework (some communities discourage it, whilst others consider it to be acceptable for people with disabilities), overall, the data suggests that people with disabilities are likely to feel this impact of reduced charity. This local observation aligns with global evidence, which highlights a strong association between disability and poverty.

Women experience the impacts of reduced food security in a particularly acute way, given their care-giving responsibilities within the household. Some key informants made a connection between women's inability to feed their children, with the children dropping out of school. Several others made a linkage between food insecurity and malnutrition affecting people with disabilities and women, including pastoralist women who cannot move with their men and are left without enough food. Lactating mothers were cited as an example of those that feel the particularly acute effects of resulting malnutrition. As mentioned under the 'Livelihoods' section, since women face additional barriers in accessing loans, and informal lenders are struggling to stay afloat, it is hard for them to mitigate this impact on household food security. A state level government representative in Kano highlighted the interconnected nature of the climate risks on household well-being, especially for women:

"Given our population - Kano is the most populous state in Nigeria - the probability of rain and the decline in normal rainfall availability has greatly impacted women. We understand the connection between food security and water availability, and these changes directly affect women, as they play crucial roles in managing households and securing food and water." (KII with Ministries, Departments and Agencies (MDA), Kano)

3.2.4 Conflict, migration and displacement

Climate related displacement is described with great frequency in the primary data, along with its profound impacts on population vulnerability. The data highlights a complex relationship between climate change and displacement: there is the direct effect of flooding leading to evacuation of affected homes, as well as drought triggering different patterns in migration and associated re-location of pastoralist households. In addition, climate related conflict over resources (e.g. between farmers and pastoralists) is also causing displacement. Whilst the underlying causes and dynamics of displacement vary widely, a strong pattern emerges from the data of the overall vulnerability of displaced populations – men, women and children, with and without disability – in terms of lost livelihoods, assets and general security.

⁶ See section 3.2.6 community relationships

Frequent references were made by research participants to flooding related evacuations and relocations, and the vulnerability of people with disabilities in such contexts. Relocated households struggle to find suitable alternative accommodation and often find themselves in overcrowded conditions. The data shows that this experience tends to be particularly challenging for people with disabilities: in emergency evacuations, they are more likely to lose their possessions, at greater risk for their lives, and highly vulnerable once displaced:

"Most of them were running for their lives, so they couldn't wait to see who was in a wheelchair or who couldn't see properly. The flood wiped out many before they could even say, 'We are trying to do a rescue,' and that's if they found anyone alive." (KII with CSO, Kano)

"Displacement and conflict is more severe when there is flooding. You have to leave your house, belongings, and everything behind. Some will die, some will lose their children. Most especially, it affects women because it is women who are at home when it happens. Think about it, if you have five children, evacuating them from a house that you fear might collapse due to the flood or when you see the flood approaching, you know you have to take them away. But how far can you go? What distance can you realistically cover while carrying five children? (KII with MDA, Kano)

Women and children are also seen as particularly vulnerable in such circumstances. The particular risks cited by research participants included sexual violence affecting displaced women (this was cited by at least six research participants). Studies across Africa have shown that climate-induced displacement have heightened women's exposure to sexual violence and exploitation, and that this is particularly acute in poorly managed camps that lack adequate protection and resources (Melo, 2021). The search for water and other essential resources often forces them to travel long distances, significantly increasing their risk of exploitation and sexual abuse (Melo, 2021).

Research participants also described women being at greater risk of being forced into risky or insecure income generating activities as a result of climate related displacement. This includes cross border migration (described by one participant as trafficking), begging or even transactional sex:

"Climate change has caused women trafficking for labour to Egypt, Mecca, Algeria and other countries due to the economic hardship, which was not common in the past. Sometimes, the women are defrauded by agents. After selling all their property to pay for their transportation, the journey gets cancelled. Climate change has caused the migration of many women. Some parents allowed their daughters to be trafficked due to the economic shocks." (FGD with widows, Kano)

"Yes, the people living in the rural areas are more vulnerable to climate change and insecurity. And many people have left their land - forced migration. They have to beg for farmlands in the neighbouring communities. And neighbouring communities are seeing them as intruders. Sometimes, their rivals come and kill them, and they see it as bandits. [...] You will see them about four or five living in one room. Young women looking for what to eat. You will think that they are prostitutes. No, some of them are housewives." (KII with MDA, Kaduna)

Climate change is exacerbating the risk of conflict in Nigeria, especially in the northwest, and increasing the vulnerability of women and girls (Odigie-Emmanuel, 2010). Research indicates that the rise in banditry in northern states such as Kaduna, Katsina, Kebbi, and Sokoto has significantly affected women, with these impacts continuing to escalate across all northern states (Gachomo, 2024). Data from the Armed Conflict Location & Event Data (ACLED) project⁷ shows that banditry incidents increased by 731% between 2018 and 2022 (ACLED, n.d). This sharp rise is largely attributed to climate-related events that have intensified poverty, hunger, and resource scarcity, fuelling conflicts as communities struggle to meet basic needs. As a result, women and girls in these areas face heightened vulnerabilities (Melo, 2021).

Pastoralist women described their own vulnerabilities in the absence of their husbands and sons, linked to changing migration patterns. Migration patterns for both men and women are changing in response to water and pasture shortages, resulting in women being left, for extended periods of time, to care for the children, with no or very limited income, and at potential risk of conflict related attacks:

"So, the women cannot even move as much, and when their husbands leave, they are left without enough food. They suffer from a lot of malnutrition and feel more insecure because their men are not there. Their older male children are not there to protect them." (KII with youth NGO, Kano)

With reference to climate-related conflict, people with disability face particular risks, both direct and indirect. On the direct side, physical or physiological impairments may reduce people's abilities to hear warnings and flee from danger; one example was given of a person with a disability being explicitly targeted by a bandit group. Indirectly, people with disabilities may face greater challenges after being forcibly displaced through their particular types of livelihood and lack of capital/ finance to enable them to access transport and alternative housing post evacuation. Participants spoke about the psychological and social dimensions of displacement faced by people with disabilities, such as stigma, as well as the fact that women with disabilities can be particularly affected by post conflict vulnerability (for example, they may be more likely to be left behind and forced to beg). Notably, the secondary literature review revealed a critical gap in evidence, with very limited research available on the displacement experiences of people with disabilities. This absence highlights the need for further investigation and greater visibility of their specific challenges in displacement contexts.

3.2.5 Domestic responsibilities and childcare

Domestic responsibilities such as cooking, cleaning, providing water and care giving for family members are tasks that fall primarily to women and girls in Kaduna, Kano and

⁷ ACLED project by Enhancing Africa's Response to Transnational Crime (ENACT)

Jigawa. This means that the impact of climate on many aspects of domestic life inevitably impact on women's workloads and associated stress levels in particular. Moreover, as FGDs with women with disabilities pointed out, the burden already facing women with disabilities in their child rearing and domestic responsibilities (including collecting water) – compounded when they are also single parents and/ or heads of household responsible for income too – is enormous.

The challenge of accessing water for domestic consumption is linked to reduced sanitation, and thus to health conditions linked to food preparation, consumption and hygiene. This is particularly problematic in rural areas:

"Lack of water at times affect because most of our villages do not have pipe-borne water or boreholes. What they have is local wells. When the rain does not come in time, they would not get enough water to use even for sanitation at home, it would be hard. Most of them have river – the river may be far away from where they are. Coming to get water and get their children ready for school and other things. The lack of water affects domestic work at home. (KII with MDA, Kaduna)

Intersectional vulnerabilities suggest that women with disabilities are particularly affected. One KII with an OPD provides some insight:

"Climate change affects women with disabilities because their responsibility, I can say, is doubled compared to their male counterparts. You find that women are, at the same time, breastfeeding mothers. So, as I said earlier, when she finds herself in any difficulty, it might be double for her. (KII with youth NGO, Kano)

Varying extreme weather conditions associated with climate change all present different challenges to domestic routines. Multiple research participants described how the extreme heat affects cooking, meals and household routines, as women's mental health and livelihoods can be affected. Extreme cold was also frequently flagged (especially Harmattan) and the impact this has on daily rhythms, with women struggling to get the children up, washed and dressed for school. Referring to flooding, some noted that it is harder to source food in extreme weather circumstances, especially for people with disabilities.

Care-giving was presented by some research participants as the gateway to children and adolescent well-being and positive behaviours. These participants suggested a link between climate-related fatigue and hardship leading to problems with care-giving, and in turn this leading to school dropout and young people getting involved in crime. Women with disabilities, who face greater financial hardship, may also struggle to provide the care and resources to support their children to go to school, which one KII also linked to behavioural issues:

"If you are a caregiver and also a person with a disability, you are often forced to go out and beg before you can get any financial assistance. For example, if you go to Dala Local Government, you will observe that many of their children do not go to school. If they do not receive an education, then there is a high tendency for them to join criminal groups or

hoodlums. So, of course, climate change is affecting their caregiving responsibilities, especially for mothers who are caregivers.” (KII with MDA, Kano)

When climate change drives men to leave their homes whether in search of pasture for livestock, or because they are unable to generate an income to pay for their family’s needs, women are left to fend for the children⁸. Pastoralist men were described by both FGD participants (women pastoralists) and key informants as leaving their homes for much longer periods of time; some (e.g. representative from Jigawa MDA, also Kano CSO) used the term ‘final abandonment’, although in other instances abandonment may mean longer and unpredictable patterns of migration. In either scenario, women pastoralists responsible for raising the children are being left with no means of feeding them (the small livestock may also be affected by the drought) nor generating alternative income sources. Another scenario was also presented in the data, with men abandoning their families in the context of failed relationships (respondents drew links to climate related stressors that underpin this breakdown in familial ties), and – in a similar vein – women being left with the responsibility of caring for the family. Women’s mental health and well-being is often referenced as under extreme stress.

3.2.6 Family and community relationships

Respondents described family relationships as being negatively impacted by climate change as a result of displacement, income and food insecurity and crop failure, and the stresses this creates on both the immediate and wider family. Respondents spoke about both spousal disharmony, as well as wider familiar relations: for example, where the limited crop yield is not enough to share between three or four family members any longer, causing friction. Notably, no reference to intimate partner violence (IPV) was directly made, although this may have been a result of the research methodology (focus groups, and no direct questions or prompts on this issue).

There were multiple references to breakdown of families as men ‘abscond’ when they find themselves unable to cope with crises. As noted earlier, this leaves women highly vulnerable, responsible for care giving as well as income generation.

"What we came to realise is that due to the hardship associated with climate change and how it affects their farm produce, some men left their families in Northern Nigeria. You will just wake up and not find your husband—he has absconded. It’s because of the responsibility—no money, nothing, he can’t feed the family. So a lot of families will tell you, ‘He has run away.’ He would just leave, and the woman has to find a way to survive." (KII with CSO, Kano)

Overcrowding is commonly referenced as a challenge for families who have experienced climate-related displacement, with problematic implications for family relations. The following quote illustrates how overcrowding is perceived as a driver for family break up:

⁸ See family relationships

"In Gayawa and Bulbula, erosion is massively affecting their homes, forcing people to live in dilapidated buildings. For example, if a family previously had a three-bedroom house, they might end up living in a single room due to the damage. As a result, sometimes husbands divorce their wives, leaving them as widows because of the impact of climate change. Socially, this is a big issue. In Islamic tradition, when a child reaches seven years old, they are not supposed to sleep in the same room as their siblings of the opposite gender. But now, because of the housing crisis, families are crammed into a single room—sometimes even husbands, wives, and children all sleeping together. So yes, climate change is affecting family structures and social norms." (KII with MDA, Kano)

Overcrowding can also lead to conflict in the relationship between host communities and displaced families. The following quote comes from a key informant in Kano state, which receives large numbers of displaced households and communities due to being a commercial hub and large city. The quote suggests a deterioration in the relationships that is likely to be exacerbated if numbers of migrating households continue to rise:

"In some communities, it has brought some form of conflict. It does because, when they lose their homes, women are not always ready to squat with other families. They will say, 'The space is already too small; we cannot accommodate more.' So, it affects the relationships they used to have among themselves." (KII with CSO, Kano)

In the same vein, extreme climatic conditions are widely recognised as making it harder for people to engage in social events within the community. The data revealed both direct and indirect linkages. Direct impact includes the challenges of passing through flooded areas, particularly for people with disabilities such as mobility or visual impairments, as well as the lack of disability-accessible community level sanitation facilities. The indirect way in which climate is affecting community relations was also emphasised, through the 'lens' of climate-related financial insecurity. Multiple participants referred to the increased poverty and financial insecurity associated with crop failures and other livelihood curtailment,



resulting in less money to spend on alms-giving, socialising and attending key events for friends and neighbours. As a result, communities are experiencing a breakdown in social capital, as people prefer not to socialise than to attend such occasions empty handed:

"Climate change has affected human interaction, because back then we used to assist one another, like now we're facing the month of Ramadan. People that have more used to share but now even those that used to give don't have." (FGD with women, Jigawa)

"It has affected celebrating childbirth - back then here in Miga when a woman gave birth, she would get assistance from a lot of people from the community both in cash and in kind but not anymore, very few will come to you." (FGD with women, Jigawa)

"You will see neighbours are not that close, and we used to welcome visitors before, but now we manage what we have, there is no sharing as we used to before. We are all managing." (FGD with women with disabilities, Jigawa)

3.2.7 Health⁹

Extreme weather and flooding in Kaduna, Kano and Jigawa States are creating health challenges for everyone, such as the increase in malaria, cholera, tuberculosis, skin cancer, cardiovascular and respiratory disorders and high blood pressure among others (Omoruyi and Onafalujo, 2011). Interview and FGD respondents report that those in rural areas who rely on rain water and ground water for cooking and consumption are most vulnerable to the risk of cholera and other waterborne diseases, and that children and women (especially pregnant or lactating women) tend to get sick more frequently (possibly linked to malnutrition, according to some respondents), as well as older adults at risk of asthma. Contaminated water, as well as scarcity of water (both climate related), may lead to poor sanitary practices with food as described here:

"Pollution and drought, among other climate change-related issues, pose serious challenges to our health. For instance, the food we eat is usually unhygienic. Flies contaminate our food and when children eat, they fall sick. We experience heavy wind due to climate change, and the wind brings dirt which covers our food. If care is not taken, some families eat their food raw and without washing it like Garri. In the end, they eat with germs that cause them and their children health crisis." (FGD with widows, Kano)

Mental health amongst women, linked to stress exacerbated by climate challenges, was also raised by several respondents. KII and FGD participants described how the additional stresses of coping with climate impact on fetching water, cooking and washing is taking a toll on the mental health of women. Climate change is also exacerbating malnutrition, as described in the section on food security, with wider consequences for ill health.

⁹ This section considers the impact of climate change on health of local communities, as distinct from access to health services. Whilst acknowledging the relationship between the two (for example, how limited access to health services can compound health conditions), this was a clearly separate area of concern as raised by the research participants.

The impact of extreme conditions on people with certain types of disability is also noted by those with lived experience. For example, one key informant, a representative from an OPD, described the health problems with eyes and skin caused by the excessive heat for people with albinism, whilst those with mobility impairments are also affected in other ways, as described by two FGD participants with lived experience.

"P1: Sincerely, people with disabilities who crawl suffer a lot during this hot season because the ground gets so hot and burns our legs and skin when crawling, and you can't do so many things during the daytime because of the heat.

P2: If I crawl during the cold season, my legs crack up and bleed. My legs will hurt me throughout the cold season because the skin gets dried up."

(FGD with women with disabilities, Kano)

3.2.8 Roads, transport and mobility¹⁰

Since moving around is such a fundamental element in the way that people pursue livelihoods, participate in social life or meet their basic needs, the impact of flooding can be catastrophic. Extreme rainfall and associated flooding are repeatedly cited as pressing concerns for everyone in terms of climate's impact on their lives. Roads and streets become impossible to navigate, infrastructure such as bridges may be eroded, and transport options (whether private or public) grind to a halt.

Whilst these barriers affect everyone, the associated mobility challenges are particularly acute for people with disabilities, women, children and those in rural areas, as many of the sections in this report have outlined already. Those most negatively affected include people with physical mobility issues (e.g. people without assistive devices, as well as those with wheelchairs or crutches) as well as visual impairments at risk of falling into ditches or drains. People with albinism struggle to leave the house in the extreme heat, due to an increased risk of burning in the sun. It is also highly likely that people with certain intellectual impairments would also struggle to effectively manage the risks presented, although this issue was not raised by respondents explicitly. In addition to people with disabilities, some examples from the research respondents suggest that those in rural areas are especially exposed to the adverse impacts of climate on roads and mobility, especially women and children who are responsible for fetching water.

"Actually, sometimes, people are not being fair to people with disabilities. You will find out that they will dig a soakaway on the roadside, and it affects our movement." (FGD with men with disabilities, Kano)

¹⁰ This section is summarised since the impact of climate change on roads, transport and mobility has been covered in almost all the other sections to some degree, as a cross-cutting factor or 'lens' to understand how climate affects so many aspects of everyday life.

"When you look at our roads, they have not been constructed in ways that will ease mobility for people with disabilities. This will affect our access to school, hospital, or the market. This can be very challenging". (KII with OPD, Kano)

"Yes, during the rainy season, we find it very difficult to move around places that have been dug, especially people like me that have sight issues. My eyes cannot see anywhere, and I find it very difficult to enter the rainfall because I may end up falling or spoiling my clothes. I cannot move around freely the way somebody with two eyes can. I have to look for someone to help me move around due to the untarred road." (FGD with men with disabilities, Kano)

3.2.9 Social / political/ community participation

Climate impacts are exacerbating existing barriers to participation, and thus further reducing community level participation of women and people with disabilities. In the three states, women's participation in social and community activities is already limited due to cultural, social and religious norms and behaviours, and respondents suggest this exclusion is further exacerbated by the impacts of climate change.

Excluding women from decision-making processes undermines sustainable development and equitable climate action. Interviews with CSOs suggest that the limited involvement of women in decision-making process has created setbacks in the state and national development. One KII respondent from Kano emphasised that societies that have limited women in leadership roles miss out on diverse perspectives and innovative solutions that could drive sustainable development. Research further supports this, showing that inclusive governance fosters more ambitious and equitable climate policies, highlighting the importance of empowering women to participate meaningfully in climate action (Heckwold & Soubeyran, 2024).

Extreme weather conditions, particularly heat and flooding, further restrict social interactions for people with disabilities. Many individuals with disabilities are forced to stay indoors due to harsh weather, limiting their participation in social, community, and political activities¹¹.

"As I mentioned, in terms of social interactions, at least now we know we are approaching the dry season. So, during this season, physically challenged people cannot intermingle because of the harsh weather." (KII with MDA, Kano)

"It really affects our involvement in politics. For example, if it is raining, people with disabilities cannot go out to cast their votes or go for meetings." (FGD with women with disabilities, Kaduna)

As the barriers increase, the costs of participation in organised community processes are perceived to outweigh the benefits, according to several people with disabilities. One FGD respondent referred to choosing to stay away from crowds and the associated

¹¹ See section on barriers

discomfort (including a lack of accessible public sanitation facilities). Some FGD participants expressed disillusionment with political participation, perceiving a lack of tangible benefits. Amongst the barriers (discussed in greater depth in section 3.4, transport and mobility are cited as major issues:

"Honestly it has affected us especially as you mention politics, for instance when it comes to political gatherings during the rainy season most people have cars and other means of transportation, for us that have disabilities we have to wait for a long period of time for the rain to stop before we can move, that may be after the gathering has ended, while other people drive their vehicles under the rain and leave." (FGD with women with disabilities, Kano)

The interconnectedness of direct and indirect impacts of climate change also undermines the likelihood of people with disabilities from participating in community activities. As described earlier, displacement caused by flooding or extreme weather can disrupt networks, and related social, political, and economic activities, of those most affected. Although in northern Nigeria, there are men who represent communities of people with specific disabilities at the local level¹², this was not something that FGD participants with disabilities cited as a route for engagement.

Finally, mobility challenges in rural areas mean that engagement is limited on both sides. One key informant from Kano State government described that stakeholders from government are constrained in their abilities to reach rural areas due to inaccessible roads, compounding the barriers that rural communities face in accessing towns to engage in consultations or access associated benefits. Further analysis of the barriers is provided in section 3.5, concerning *RQ3: What are the key barriers to preventing and mitigating the impact of climate change on these groups?*

¹² Such men are often referred to as Disability Advocates, or Alaramma (for blind Qur'anic students in some contexts), and serve as intermediaries between their communities and the broader society, advocating for rights, resources, and inclusion. For example, they speak on behalf of people with disabilities in traditional councils, religious groups, and local government meetings, and help coordinate assistance, including donations, medical care, and mobility aids.

3.3 What are the trends and future projections? (RQ 1b)

- Findings on trends over the past decade reveal that women and people with disabilities report progress in some areas, but ongoing challenges in others.
- A clear gap exists between perspectives of policymakers / duty-bearers and people with lived experience at the grassroots level. Policymakers and NGOs report progress in healthcare, climate awareness, and social inclusion. However, women and people with disabilities face worsening conditions due to economic instability, weak interventions, and environmental pressures.
- Findings on future projections show optimism about future improvements; however, concerns remain about government commitment, policy implementation and the role of NGOs in ensuring sustainable change.

3.3.1 Lived Experiences of climate change impact on women and people with disabilities over the past decade

The primary data reveals a mixed reality where perceptions of progress, persistent struggles, and worsening conditions coexist, shaped by factors such as policy implementation, climate adaptation, economic stability, and security. While some key informants from government and NGOs cite improvements in awareness, healthcare access, and inclusiveness, FGDs with women and people with disabilities highlight deteriorating conditions linked to economic hardship, lack of services, environmental stressors, and inadequate interventions. Literature supports this disparity, showing that vulnerable groups face disproportionate climate impacts due to limited healthcare, poor housing, and fewer adaptive resources (Amobi and Onyishi, 2015; WEDO, 2008). These findings expose a disconnect between policy-level optimism and grassroots realities, underscoring gaps in the effectiveness of current responses. The following sections explore these trends in detail.

Many interviewees, especially focus group participants, highlighted worsening conditions, particularly due to climate change and economic instability. Rising heat stress, deforestation, unpredictable weather patterns and insecurity have made daily life more challenging. Flooding has intensified in some areas, displacing communities and destroying the livelihoods. Respondents in FGDs and from civil society note that government relief efforts are often misdirected, failing to support those most affected. Economic instability has further exacerbated these issues, limiting access to essential services such as electricity and healthcare. As one respondent noted, financial hardships make it nearly impossible to afford cooling solutions or basic medical care. Women and people with disabilities are acutely affected.

"In the last ten years, the problem has gotten worse. For example, those of us with visual impairments, we like to go out and relax outside with our families when the weather is hot to avoid sickness from sleeping in the heat, but we cannot because we are afraid. When we leave

our rooms, some culprits may come and rob us. When we sleep inside, we get sick, like from malaria, which necessitates us to go to the hospital. And there is no light (electricity) for us to make use of fan. And we cannot afford to use a generator. These are the challenges we have been dealing with since the last ten years". (FGD participant, men with disabilities, Kaduna)

Nevertheless, despite challenges, government and NGO efforts have led to progress in healthcare, climate change awareness, and infrastructure. Several government policies and interventions by development partners have contributed to these improvements. For example, an NGO representative in Jigawa State reported that free healthcare and education policies now exist for people with disabilities from primary to tertiary levels. The introduction of the Jigawa Healthcare Contributory Scheme has also made healthcare more accessible for women and people with disabilities.

Climate change awareness and adaptation have also improved across the states.

Currently, there is increased awareness of climate change through social media, radio, and grassroots discussions which has helped people adapt and make informed decisions regarding farming, trading, and relocation prior or during floods. Data from Kaduna suggests that awareness may be higher in this state, although our study design prevents any definitive finding in this regard.

"The situation has improved due to awareness. They tell women, people with disabilities and general population to listen to their radios because this year there may be heavy rain or changes in weather, and if you are engaged in farming, you are supposed to start at a certain time. It wasn't like this before but with the enlightenment through radio and other means of communication, a lot of women and people with disabilities know when they are supposed to do this or that. When they say that there will be floods, those in flood-prone areas are told to vacate those areas. So, it has helped in reducing destruction." (KII with MDA, Kaduna).

Infrastructure improvements, such as the construction of roads and drainage systems, have also helped mitigate some impacts of climate change. Discussions with MDAs and women with disabilities in rural Kaduna suggest that government interventions in flood-prone areas, including the construction of roads, drainage systems and waterways, have helped reduce the impact of environmental challenges faced by women and people with disabilities. Additionally, the training and distribution of smokeless stoves to women and people with disabilities by government and development partners helps curb deforestation and reduce air pollution.

"The government has made efforts to construct roads for us. In the past, this community was purely rural. We use the boat to get to this place. Now there are roads, bridges, power (electricity), boreholes, and marketplace." (FGD with women with disabilities, Kaduna)

Moreover, the social and economic inclusivity of women and people with disabilities has also improved. Previously, women and people with disabilities were not recognised as stakeholders in the community or government, but now they actively participate in government, community and development programmes. Women and people with disabilities are now involved in training programmes and other development interventions, allowing them to acquire skills that enhance their livelihoods.

"There has been improvement. Why do I say that? Because in the past, women and people with disabilities didn't even see themselves as stakeholders in the community. But now, thanks to development programmes, government interventions, and increased awareness in our communities, their situation is changing. These vulnerable groups are starting to experience better social and economic inclusivity, particularly in terms of access to training, economic empowerment, and healthcare." (KII with Government Agency, Kaduna)

Geographical differences play a crucial role in climate change impact. While some regions have benefitted from targeted interventions like gully stabilisation and improved infrastructure, others face worsening conditions, particularly due to deforestation and inadequate flood control. The following quote is indicative of such variation, which inevitably informs people's perception of trends in both climatic conditions as well as the adequacy of governmental response:

"Even within Kano, disparities exist. In some areas like Rimin Kebe, deep gullies continue to disrupt transportation and serve as criminal hideouts, while in other parts of the metropolis, flooding only causes temporary inconveniences. Similarly, some densely populated areas, such as Brigade, experience housing losses during heavy rains, whereas places with proper infrastructure remain unaffected." (KII with NGO, Kano)

3.3.2 Future trends and projections on climate change impact on women and people with disabilities

In Kano, Kaduna and Jigawa States, increasing awareness of climate change and policy advancements signal a positive trajectory, but concerns remain over government commitment, policy implementation, and NGO involvement. Both KII and FGD participants indicate optimism about future improvements due to growing public awareness, climate-responsive policies, and community engagement. Government agencies and CSOs are now actively addressing climate change, marking a shift from previous neglect. Both KII and FGD respondents foresee that women and people with disabilities will be better able to adapt to climate challenges through awareness, education and policy inclusion. According to one MDA, Kaduna KII respondent, *"What I am seeing in the next 10 years is that women, basically because of what they are seeing today and what they are learning, everybody would be able to adapt to whatever climate change that comes. They would know what they are supposed to do so that they would escape from any challenge that would come. This is what I see."*

Efforts to integrate climate policies into government programmes such as afforestation campaigns, and eco-friendly relief distributions are expanding. Many KII respondents noted that Kano and Kaduna States have developed and signed their climate change policies into law promoting the inclusion of marginalised groups in climate-related initiatives, while Jigawa is working on developing theirs. Furthermore, the inclusion of women and people with disabilities in climate change discussions and policy-making is seen as a step forward. In Kano and Kaduna States, for instance, policies have been passed to ensure greater participation of these groups in climate-related programmes. One KII participant in Kano State expressed hope that in the coming years, there would be a significant shift towards

inclusivity, with more targeted interventions to address the unique challenges faced by these vulnerable groups. Additionally, projects like International Fund for Agricultural Development (IFAD) and Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) are empowering women in climate resilience efforts.

The role of education and technological advancements were also emphasised in discussions about future projections. One government KII respondent in Jigawa mentioned ongoing efforts to establish climate action plans and improve Geographic Information System (GIS) laboratories to enhance data collection and monitoring of climate trends. With such developments, it is expected that early warning systems will be strengthened, and communities, including women and people with disabilities, will be better equipped to respond to climate-induced disasters. Similarly, agricultural initiatives to promote food security through gardening, nutrition programmes, and home economics training are expected to yield positive results:

"The trend I am seeing now in the near future... there will be more food security with the initiative of gardening, food demonstration, nutrition and home economics given special attention here in the ministry. A lot has been budgeted for it, and definitely implementation is going to follow with our agricultural policy." (KII with MDA, Jigawa)

Nevertheless, despite optimism, challenges persist. Concerns about political will, ineffective policy implementation, and corruption threaten progress. Some states have yet to domesticate climate policies, and economic and security challenges further exacerbate climate vulnerabilities.

Amidst these discussions, a recurring theme was the belief in divine intervention. Many participants expressed hope that with God's help, positive change would occur despite existing challenges. Some noted that in the face of administrative failures, corruption, and economic hardship, faith in God remains a source of strength and optimism, and even in difficult circumstances, prayer and faith could inspire hope and resilience, especially for marginalised people.

3.4 Does discrimination and a lack of inclusion based on additional aspects of identity (e.g. age, ethnicity or religion) multiply the impacts of climate change for women, girls and people with disabilities? (RQ 2)

- Characteristics such as age, motherhood, religion, location and socio-economic status and types of disability can multiply impacts of climate change for women, girls and people with disabilities.
- Respondents highlighted how climate change impacts exacerbate existing risks of violence for younger women and girls, those in rural communities and mothers.
- Climate change impacts people with disabilities differently, depending on their type of disability

"You are a living witness of things happening in Nigeria... There are multiplier effects in climate change issues. They are not direct, but they are there to multiply. If there is poverty, poverty is a multiplier effect. Ignorance or illiteracy, accessibility and mobility are multiplier effects. These impacts are there. It is a crushing effect." (KII with research organisation, Kaduna)

Our study found that characteristics such as age, motherhood, religion, location, socio-economic status and types of disability can multiply climate impacts on women, girls and people with disabilities in Kano, Kaduna and Jigawa. Although many respondents do not perceive differences in the way climate change impacts are experienced by people based on aspects of identity – in the words of a pastoralist woman in Kano, *"we all suffer from it"* – other respondents were able to identify factors that exacerbated existing inequities. Overall, the data revealed varying perspectives, with age being a particularly widely cited multiplying factor.

3.4.1 Age

Different stages of the life cycle exacerbate particular climate-related risks for women and people with disabilities. Research participants frequently noted that older people and children are physically more vulnerable and likely to fall sick from increased disease risks brought by climate change impacts. For example, there is a higher risk of heat-related mortality with age. They are also less mobile and rely on others for support, including for financial and food security, undertaking daily activities and migrating or evacuating in a disaster.

"The elderly and the children—they are more at risk. If there are cases of displacement or insecurity, it will hit them the worst. If we are talking about disease, it will hit them the worst." (KII with CSO, Kano)

Adolescent girls and young women are at increased risk of sexual exploitation, abuse and harassment (SEAH) and of resorting to transactional sex during insecurity and crises. This risk was mentioned in all three states and across all types of stakeholders interviewed. A Kaduna State MDA representative, for example, noted: *“Teenagers are more likely to be sexually assaulted. In 2011, we had an IDP camp – it became a criminal den. We found child trafficking syndicates, child labour and also rape and other sexual exploitation and abuses.”* A recent study on climate impacts on adolescent girls and young women in the Sahel similarly found reports of transactional sex and GBV (Thebaud-Bouillon-Njenga et al., 2024).

Climate impacts are also associated with reduced access to education for younger generations. Respondents described how economic hardship is making education increasingly unaffordable. While the primary research did not find that girls are more likely to be pulled from school than boys if families are unable to afford school-going costs, references were made to water shortages affecting girls’ attendance and hygiene. Extreme weather conditions such as heatwaves and harmattan were also linked to children falling sick and missing school.

3.4.2 Motherhood

Gendered expectations around childcare responsibilities make mothers additionally vulnerable, as they bear physical and financial burdens of childcare while navigating harsh climate impacts. Multiple respondents made reference to mothers being “victimised”, “unprotected” or “incapacitated” as they struggle to care for children in increasingly strained circumstances (for example, walking long distances to fetch water while pregnant or carrying infants while escaping flooding). While financial and food insecurity is placing mothers at greater risk of poverty and GBV, it is also driving migration among men, whether indefinitely in search of income to support families, or in some cases, to abandon families altogether, leaving mothers with no protection or support to care for children.

“I saw about 80% of the males in the [pastoralist] community have migrated. When I asked where they were, they told me some have even left the country. [...] I asked the mother of a seven-month-old child where the father was. She said the father is yet to see the baby, he left when she was just three-months gone [because] they don’t have cattle; they don’t have animals to rear, and they don’t have any means of income to take care of their children. The alarming thing is the women whose husbands have migrated are just in their 20s. And one of the sources of livelihood for Fulani women is selling fura and nono. Now, there is no cattle to sell fura and now the husband has migrated leaving her with these kids.” (KII with MDA, Jigawa).

Further compounding these challenges, pregnant and lactating mothers face heightened vulnerabilities as they attempt to navigate the consequences of climate change. One KII respondent highlighted that women with disabilities find it especially difficult to nurse their children during extreme weather conditions, which adversely affects both mother and child. Respondents from both KIIs and FGDs also noted that pregnant women frequently undertake long journeys to access water during droughts; a burden that poses serious physical risks to both the mother and her unborn child.



"Climate change affects women with disabilities because of their responsibility, [...] compared to their male counterparts. [...]. For example, a woman with albinism who is also a nursing mother goes out. Then, the issue of harmattan or excessive sunlight affects her. It will cause additional difficulties for her. Maybe her own child can be affected, and she is the one that will bear the consequences." (KII with Youth NGO, National)

3.4.3 Religion/Culture

Religious and cultural restrictions that prevent women from economic and sociopolitical activities reduce their resilience to climate impacts. Multiple KII and FGD respondents pointed out that women in culturally conservative Muslim communities must be granted permission to conduct activities that may bring them in to contact with men, such as earning money, farming or participating in community meetings. The literature reinforces these findings, noting that Muslim women subject to purdah face social, political, and economic exclusion that restricts mobility, access to land and other means of production, financial capital, and participation in public life (Yusuf, 2014). These restrictions severely limit their capacity to adapt to climate change. However, research on this subject remains limited (Djoko, 2024).

"Religion and ethnicity are two key factors that play a vital role. Some people have extreme mindsets and would not allow their women, even women with disabilities, to navigate opportunities. This would affect them because they lack literacy, knowledge, or awareness due to religious extremism. Similarly, some ethnic groups or tribes do not allow their women to participate in any social activities." (KII with CSO, Kano)

Respondents also pointed to religious strictures on clothing being maintained in spite of extreme temperatures.

3.4.4 Rural

Rural communities are particularly vulnerable to climate impacts due to their dependence on climate-sensitive livelihoods, poor infrastructure and inadequate access to services and resources. Increased displacement, conflict and migration as a result of drought, floods and unpredictable rains have exacerbated security risks for women and people with disabilities. Climate change-induced water and resource scarcity is forcing rural women and girls to travel longer distances to fetch water and cooking fuel, placing them at heightened risk of violence.

"The wells have dried up. They have to trek to long distances to fetch water. They are exposed to bandits and bad boys. Access to cooking energy. N500 worth of charcoal cannot cook for three people. Some are forced to go to the bush by themselves, risking their security. Some of them fall victim." (KII with MDA, Kaduna)

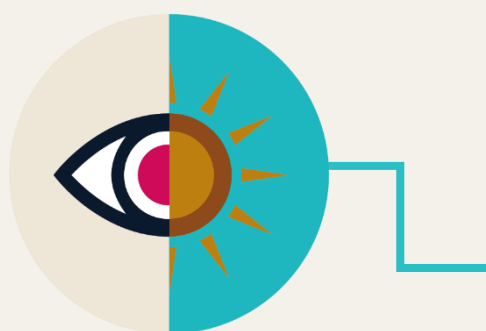
Lower socio-economic status and education levels reduce resilience to climate shocks as a result of fewer resources, and less access to financial and social capital. Examples cited by respondents included wealthier farmers having better access to modern adaptive farming practices, and people with disabilities receiving familial support to go to school, learn a skill or trade and start a business rather than be encouraged to beg. Social capital and corruption were raised by multiple participants, with several highlighting that only the well-connected benefit from external interventions.

"The leaders of the community keep the donations to themselves and don't distribute them to the masses below. If you see anyone getting that donation, it's definitely because they know someone among them." (FGD with IDP women, Kano)

Recent research highlights how gender, disability, and limited access to resources compound vulnerability to climate change in rural Nigerian communities, particularly among female-headed households. A recent study on ten social vulnerability indicators in rural Nigerian communities, where 66% of households depend on subsistence agriculture, found that sex (0.90), disability (0.90), and access to alternative housing in the event of a climate disaster (0.90) were the factors most likely to increase vulnerability to climate change, followed by income (0.88) and age (0.66) (Okoro and Knight, 2024). Female-headed households were more associated with vulnerability factors that reduce resilience to climate impacts, including lower income, less access to hospitals, and limited mobility due to greater reliance on walking or bicycles instead of cars or motorbikes. Lack of transport capacity not only impedes rural women's ability to evacuate during climate disasters but also limits their ability to increase household resilience through access to services, markets, and workplaces. Compared to men, women more commonly cited poverty and insecurity of lives and property as structural vulnerability factors preventing them from adapting effectively to climate change. Among the lowest-earning households (incomes of less than 10,000 Naira per month), 70% were female-headed while only 30% were male-headed (Okoro and Knight, 2024).

3.4.5 Different types of disability

Climate change affects people with disabilities differently, depending on the nature of their disability. The primary data brought out both the specificity of climate change impact on particular types of disability, in contrast to many policies, programming materials and wider literature where disability is discussed as an undifferentiated category, overlooking its complex and varied dimensions. The following graphic illustrates how different climate impacts might affect people differently. The graphic is not exhaustive in terms of types of impairments or disabilities. Whilst the research respondents discussed visual, hearing, physical and speech impairments, and albinism, no reference was made at all to people with intellectual impairments.



ALBINISM

People with albinism are more vulnerable to sun exposure due to light sensitivity with both their skin and eyes.



MOBILITY BARRIERS

Mobility barriers for people with physical and visual impairments are compounded by climate change impacts such as heavy rainfall and flooding, and indirect impacts like conflict and migration.



VISUAL AND HEARING IMPAIRMENTS

People with visual and hearing impairments are less able to note danger or early warning signals, or take preventative measures like maintenance of houses. Heavy rain and damage to roads and infrastructure create dangerous conditions for people with visual impairments.



COMMUNICATION BARRIERS

Communication barriers faced by people with hearing or speech impairments limits participation in community and governance consultations, and access to disability inclusive services for their particular impairment. They may have to travel farther for inclusive education or specialised medical care, but rains/flooding may cut off access.

The secondary literature finds that women and girls with disabilities face unique and additional challenges during disasters and conflicts, depending on their type of impairment, challenges that are often insufficiently addressed by humanitarian responses. For instance, research in conflict-affected parts of northern Nigeria found that women with visual impairments may struggle to understand their surroundings or find safety, those with hearing impairments may not detect approaching danger, and individuals with mobility impairments may be unable to escape (Holden et al., 2019). These differentiated experiences are reflected in the graphic to emphasise the varied needs of people with disabilities in the context of climate change.

Humanitarian responses in northern Nigeria often fail to support people with disabilities effectively, particularly in mental health. Studies have shown that relief efforts are considered inaccessible, for example, excluding women with disabilities from equal access to food distributions, described as “survival-of-fittest contests.” Additionally, nearly 80% of civil society respondents interviewed in a 2015 study in northern Nigeria reported their organisations have not been involved in efforts to mitigate violence against women with disabilities (Jerry et al., 2015).

3.5 What are the key barriers to preventing and mitigating the impact of climate change on these groups? (RQ 3)

- Climate initiatives are often poorly resourced and male-dominated, sidelining women and people with disabilities from policymaking, funding access, and participation due to gender norms, lack of inclusive planning, and inadequate outreach.
- Poor infrastructure, inaccessible shelters, and limited transport options especially during climate events restrict the physical participation of people with disabilities and expose women (particularly in IDP camps) to heightened risks.
- Harmful social attitudes, GBV, and lack of inclusive communication perpetuate marginalisation, reducing access to information, participation opportunities, and the ability to make informed decisions about climate adaptation.

This section explains the barriers faced by women and people with disabilities in Kano, Kaduna and Jigawa States in participating in community level governance and climate related interventions. Despite interventions from government and CSOs on advocacy, programme implementation and policy formulation, a range of barriers limit the success of these efforts with respect to the participation of and outcomes for these marginalised groups. These barriers can be understood as falling into three broad categories: environmental, attitudinal and institutional. Whilst acknowledging that some issues cut across the categories, we have used this framework and definitions to provide a simple structure for the findings, as set out in Figure 1 below.

Figure 1: Barriers to participation



3.5.1 Institutional barriers

- Inadequately resourced initiatives and outreach**

Insufficient funding is a major barrier for people with disabilities to participate in or access climate-related interventions. This applies at both organisational and individual levels (for the latter, see section on environmental barriers below). At the organisational level, CSOs and other community-based organisations (CBOs) highlighted how it is difficult to implement local/community projects due to lack of funds, which in turn affects how these groups access interventions. CSOs are rarely able to pay for transport needed by people with disabilities; some informants from civil society even described using their own personal funds in order to fill the organisational funding gaps. Research further corroborates this challenge, highlighting inadequate financing for climate change interventions in Northern Nigeria, especially those targeting women and people with disabilities (Dioha and Emodi, 2018; Elum and Momodu, 2017).

In addition, climate-related funding disproportionately benefits key players within communities, leaving people with disabilities underserved. Several respondents noted that financial resources and interventions often do not reach the intended stakeholders, as influential actors in the community tend to capture a larger share of available funding.

Research further corroborates this challenge, highlighting inadequate financing for climate change interventions in Northern Nigeria, especially those targeting women and people with disabilities (Dioha and Emodi, 2018; Elum and Momodu, 2017).

"The government will bring things to donate to the masses, but in the end, only those close to them will get those donated items. We, who are far away, will be forgotten" (FGD with women with disabilities, Kano)

- **Lack of inclusivity and accessibility in climate discussions and programming**

Globally, women are significantly underrepresented in climate change governance and policymaking. This exclusion is driven by gender norms, societal expectations, and a failure to plan for their meaningful participation. For instance, women's household and childcare commitments, as well as accessibility needs for people with disabilities, are often overlooked during community consultations (Global Network of CSOs for Disaster Reduction, 2022). Discriminatory perceptions and stereotypes significantly affect their access to education and leadership roles (OHCHR & UNEP, 2021).

As a result, many Nationally Determined Contributions (NDCs) lack gender-specific strategies, and there is inadequate capacity for gender analysis and gender-responsive budgeting, further marginalising women in climate-related decision-making processes (McCright, 2010; Tanjeela & Rutherford, 2018; UNFCCC, 2019). This issue is also evident in Nigeria, where women report barriers to accessing information and participating in environmental decision-making, underscoring the need for their inclusion in shaping climate governance (Rapley, 2013).

Both primary and secondary data suggest that women in the three study states are typically active only in local groups, with their voices rarely heard. Women often need to engage through their husbands to fully participate: organisations frequently focus on men as community heads, who then decide which women and how many can participate in interventions, often not meeting programme requirements for female involvement. Secondary evidence further reinforces this, highlighting how traditional social norms, gender discrimination, and stigma frequently override the enforcement of policies and laws that protect women's rights to participate in community groups, activities, or decision-making (Women for Women International, 2024).

"If you look at our communities, as much as we want to believe that women are involved in everything, there is still a limit to their roles. Women have key roles to play, but getting their voices heard is completely another ball game. You will see that when an intervention comes, they would rather interact with their husbands. Even though we are seeing improvement, I feel it is not enough for women to really play a role. When interventions are introduced, unless it is an organisation like the World Bank, ACRoSAL, or UNICEF that mandates women's participation, they still contact the men first. The head of the community is a man, and he will decide how many women to involve." (KII with CSO, Kano)

This barrier was explicitly acknowledged by key informants from within the MDAs – whilst suggesting that the barrier would be reduced with the implementation of relevant laws and policies:

"Before now, there were gaps in terms of inclusion. Like I said, the first thing you need is to have a [climate] policy. Without a policy, you cannot challenge the government or any entity without proper documentation. Now that we have relevant laws to address these issues and the government has set up agencies to handle them, I think it is quite effective. Let's just wait for about five years to see the significant impact that will come out of it." (KII with MDA, Jigawa)

Responses from the interviews and FGDs reveals that people with disabilities are also excluded from policymaking processes, preventing their voices from being heard.

Participants shared that when key decisions are made regarding interventions, funding and resource allocation related to climate programmes, people with disabilities or representative organisations are rarely consulted, leading to the development of policies that do not fully address their needs. This exclusion, also validated in the wider literature (Modern Ghana, 2024), results in policies that fail to fully address their specific needs.

"What could hinder us is lack of representation. We need to be represented in anything the government wants to do about climate change the only issue is that sometimes we are not involved in certain initiatives, we are being discriminated against, that is it, if not we can get involved in anything" (FGD with Men with disabilities, Kaduna)

Evidence from the literature review highlights additional systemic barriers to inclusion.

Research underscores that, despite the importance of including OPDs in climate change policy processes, OPDs in Northern Nigeria face substantial capacity challenges that hinder their ability to engage stakeholders effectively. Many OPDs lack adequate representation of individuals with diverse disabilities, such as women with disabilities or people with psychosocial and intellectual disabilities. Consequently, the specific needs of these subgroups are often overlooked in policy development (Holden et.al., 2019).

Compounding this failure to include people with disability, respondents also emphasised accessibility issues in climate-related discussions and policies. An interview from a CSO representative highlighted that when policies are designed to support these vulnerable groups, they find them inaccessible. The lack of inclusive communication formats such as sign language interpreter or braille materials further limits them from decision making process. Respondents from interviews and FGDs highlight that women and people with disabilities may both face literacy challenges which deter them from accessing climate-related programmes, interventions and opportunities.

- **Limited awareness and information**

Awareness of climate change among people with disabilities remains limited due to a lack of targeted education and outreach efforts. Our study found somewhat uneven understanding across the FGDs about climate change as a concept. Responses suggest that there are some organisations trying to provide general awareness campaigns or educational programmes on climate change, which has created some opportunities for community

members to become informed about climate-risks and mitigation strategies. However, the range of understanding of climate change points to a knowledge gap that is likely to be more pronounced for those, including women and people with disabilities, who are already excluded from consultations, further limiting their ability to engage in environmental initiatives or access support for climate adaptation efforts. Considering this, people with disabilities continue to advocate for improved access to information so they can make informed decisions and fully utilise their talents.

"We want to be given freedom and right to come out and make use of our talents. There is ability in disability." (FGD with men with disabilities, Kaduna)

Rural populations of women and people with disabilities also struggle with poor early warning systems due to limited access to climate-related information, education, and weather updates (Otitoju et.al., 2016). For example, women in Nigeria are less likely to own mobile phones (55% vs. 81% for men) or access the internet (16% vs. 35% for men), which restricts their ability to take proactive measures against climate impacts (DHS Nigeria, 2018). This lack of access perpetuates their vulnerability, leaving them unable to adapt or mitigate the effects of climate change effectively (Chukwuma et.al., 2021).

- **Limited access to resources**

Studies have shown that women's access to productive resources, information, and land is limited, exacerbating the gender gap in agricultural productivity and their capacity to adapt to climate challenges (Kosaniac et al., 2022). KII Respondents highlighted that women in the study states face just such challenges due to inadequate support and representation, hindering their productivity and overall agricultural development. With inadequate access to farming inputs, modern techniques and funding opportunities, women are hindered in their productivity and financial independence. This further impacts upon their livelihoods and limits overall agricultural development in the state. Respondents also noted that the lack of women's representation also result in programmes and interventions that do not adequately address the unique needs of female farmers.

"It also affects their access to resources – when there is an intervention after a climate event, their access is limited. Women often get support if their husbands are in influential positions (men are prioritised first). Women also don't have access to platforms to voice their concerns about climate change and their needs as a result." (KII with NGO, National)

Rural populations of women and people with disabilities struggle with poor early warning systems due to limited access to climate-related information, education, and weather updates (Otitoju et.al., 2016). For example, women in Nigeria are less likely to own mobile phones (55% vs. 81% for men) or access the internet (16% vs. 35% for men), which restricts their ability to take proactive measures against climate impacts (DHS Nigeria, 2018). This lack of access perpetuates their vulnerability, leaving them unable to adapt or mitigate the effects of climate change effectively (Chukwuma et.al., 2021).

- **Poverty**

Limited economic opportunities for people with disabilities hinder their ability to adapt to and mitigate the impacts of climate change. As discussed above, many people with disabilities interviewed mentioned that they struggle with financial insecurity, with some resorting to street begging as a means of livelihood. Without stable economic independence, people with disabilities face greater difficulty accessing climate adaptation resources, participating in resilience-building initiatives, or making informed choices that could protect them from climate-related risks. At a personal level, some respondents with disabilities asserted that their own very constrained personal finances act as a barrier that stops them from engaging:

"Our major challenge is transportation; it is the major problem we experience. When we are invited to meetings, our attention is about how we transport ourselves to the meeting or back home, and most times, we have to borrow money to go out. Means of transportation is our major problem." (FGD with women with disabilities)

- **Corruption**

Women and people with disabilities perceive corruption and favouritism to be systemic barriers to their access to both governmental and non-governmental interventions (including climate interventions). Respondents from interviews highlighted that women and people with disabilities often rely on interventions for support in areas such as health, education, empowerment, climate adaptation, and relief efforts. However, respondents reported that corruption and favouritism in these processes frequently lead to the misallocation of funds, preventing aid from reaching the intended stakeholders and groups. Multiple participants highlighted that aid is often distributed through third parties, creating opportunities for favouritism and exclusion. For people with disabilities, particularly those from rural areas, respondents noted that their limited or lack of engagement in policy decisions often leads to their being neglected.

"Most times, interventions don't get to us, if it is given through a third party. Because we are people with disabilities. It doesn't get to us. Since I became disabled about 22 years ago, I have not benefitted from any support." (FGD women with disabilities, Kaduna)

3.5.2 Environmental barriers

- **Inadequate infrastructure**

People with disabilities face significant barriers during climate-related disasters due to the lack of disability-friendly infrastructure. FGDs revealed that people with disabilities might feel reluctant to go to community events due to both transport challenges as well as lack of sanitation facilities. When asked about other barriers to engaging with climate initiatives, people highlighted issues such as inaccessible shelters, poor road conditions, and inadequate support systems. Respondents also reported that poor and inaccessible infrastructure can make it difficult for people with disabilities to evacuate during emergencies or access relief services.

3.5.3 Attitudinal barriers

- **Stigma**

Negative societal attitudes and harmful media portrayals of people with disabilities hinder their inclusion in climate action. FGD respondents with disabilities highlighted that negative societal attitudes significantly compound the challenges that they face. Some reported a sense of isolation, stemming from inadequate support and limited access to individuals who understand their experiences. The lack of safe, supportive spaces to voice their concerns further contributes to feelings of loneliness and psychological distress. Research further reveals that society and media often portray people with disabilities as victims rather than potential agents of change (OHCHR & UNEP, 2021). These attitudes and narratives contribute to devaluing people with disabilities, framing them as non-contributing members of society. Consequently, they are excluded from proactive measures involved in climate action, perpetuating their marginalisation (NMAP, 2023).

Ethnic or religious attitudes were also raised as a potential barrier, albeit it was not directly linked to climate initiatives specifically. One FGD respondent with disabilities claimed to have experienced discrimination from those of the same religious or ethnic identity, whilst experiencing greater support from people of different religious backgrounds:

"Honestly, it has to do with religion because like the area we are in; Rigasa, people are not sympathising with us especially because we share the same religion with them. But when you go outside the area where there are people from other religion, we get more favours. There are great differences. The non-Hausas are more kind and caring to us than our fellow Hausa people." (FGD men with disabilities, Kaduna)

- **GBV**

GBV not only affects women's physical and emotional wellbeing, and breaches their human rights, but also limits their ability to participate in climate related initiatives and discussions. Although our primary data did not uncover any information about domestic violence, findings from both KIs and FGDs nevertheless refer to the risk of different types of GBV associated with climate impact. GBV is well documented as a factor that undermines women's ability to participate in activities outside of the home, through a combination of fear, shame, stigma and name-calling (Women for Women International, 2024; Nimisire, 2023). One example shared by a key informant highlights how GBV might act as a barrier to participation as women may not want to put themselves at risk of harm; the example in the following quote refers to women in IDP camps and their exposure to sexual abuse and exploitation.

"Then another challenge is the experience of gender-based violence, the bosses, the Oga [boss] in charge will say if you want to have access to this, I will sleep with you. You must come and meet me in my hotel before this will be given to you. So, we experience GBV, we experience exclusion. And we don't even have access to the assistance that is being provided by government and other partners." (KI with OPD, National)

3.6 What interventions work in preventing and mitigating the impact of climate change on these groups across the Global South? Who are the key players/ stakeholders – state and non-state? (RQ 4)

- Diverse climate adaptation efforts across Kano, Kaduna, and Jigawa include flood prevention, afforestation, climate-smart agriculture, pollution control, and humanitarian relief
- Although these interventions aim to reach marginalised groups such as women and people with disabilities, accessibility and sustainability issues persist.
- Community sensitisation and inclusive governance remain critical, as many initiatives still exclude people with disabilities due to communication and participation barriers.
- Climate action in Nigeria is multi-actor, involving government bodies, international donors, NGOs, CBOs, and traditional leaders, each contributing to mitigation, adaptation, and support for vulnerable groups.
- Government plays a central role through the establishment of relevant MDAs at both the federal and state levels; while NGOs and community leaders play key roles in delivering inclusive, grassroots-focused climate interventions.

3.6.1 Interventions

Interventions aimed at mitigating climate impacts on people living in Kano, Kaduna, and Jigawa states have focused on environmental policies, agricultural support, advocacy and sensitisation programmes, and targeted social welfare initiatives. These interventions address both the mitigation of climate change (by preventing further climate-induced challenges) and adaptation to its existing effects.

1. Flood prevention

Flood prevention strategies, such as dredging, drainage construction, and the building of embankment, have been found to play a significant role in mitigating the impacts of climate change by reducing the risk of displacement and enhancing the protection of vulnerable populations. As the primary data clearly shows, floods are a recurring disaster in many communities, displacing families and destroying livelihoods. FGD and KII respondents note that both government agencies and community-led initiatives (whether CSO- or individual-led) have implemented flood prevention strategies such as dredging water bodies, constructing drainage systems, and erecting embankments to minimise flood risks. Women, who are often primary caregivers, benefit significantly from these interventions as they reduce the burden of relocating families and rebuilding homes. However, more than one FGD respondent reported that people with disabilities still face some challenges in accessing flood-safe areas largely due to limited mobility infrastructure like ramps and raised walkways

in these projects. Additionally, several respondents, especially from the FGDs, noted that these interventions often lack sustainability plans, leading to rapid deterioration. Without continuous maintenance and community engagement, blocked drains and eroded embankments quickly reverse any gains. Despite these efforts, some respondents noted that poor maintenance and blocked drainage systems have occasionally reduced the effectiveness of these interventions.

2. Pollution management

Pollution management efforts, including laws and penalties against improper waste disposal, aim to curb environmental degradation and reduce climate-related health risks. Waste pollution exacerbates climate change by blocking drainage channels, leading to increased flooding and related health hazards (Echendu, 2023). According to the primary data, government-imposed fines and community-led waste management initiatives, have been established to control pollution. Women, who are often responsible for managing household waste, have engaged in sensitisation programmes to promote proper waste disposal. However, few respondents noted that enforcement remains weak, and illegal dumping continues in several areas.

3. Tree planting and afforestation

Tree planting and afforestation efforts have been widely implemented by government agencies, CSOs, and individuals to combat desertification and improve climate resilience. Both KII and FGD respondents noted that tree planting initiatives have been actively promoted to reduce soil erosion, improve air quality, and create natural flood barriers.

"The government has organised awareness campaigns on tree plantation and also issues caused by climate change such as desert encroachment. Planting trees will help mitigate that, sometimes the government do embark on massive tree planting." (FGD with men with disabilities).

Several KII respondents also observed that CSOs have contributed by distributing seedlings and raising awareness.

"Last year, I, along with other organisations, planted more than 10,000 trees in Kano State. I also organised a workshop solely for people with disabilities. We discussed with them the issue of climate change, and at the end of the programme, each and every participant was equipped with a tree to plant at their chosen location. Our aim was to make them aware, to educate them, and to help them understand that climate change exists." (KII with youth NGO, National)

One respondent further noted that women and local youth groups have also played a role in afforestation campaigns: *"When we are having a tree planting campaign, you will see that a good number of young men are part of it. You will see women with their children; they come and they are part of the process. So, it is quite open, and it involves women a lot, even children."* (KII with youth NGO, Kano)

People with disabilities have been involved in awareness campaigns but continue to face physical barriers to direct participation in tree planting activities. Moreover, some KII respondents noted that there is limited monitoring of tree survival rates, and without proper follow-up, many planted trees do not survive harsh weather conditions.

4. Community sensitisation

Community awareness and education programmes on climate adaptation strategies are intended to empower vulnerable populations to mitigate risks. The primary data shows that CSOs, government agencies and media organisations have launched sensitisation campaigns through radio, workshops, and grassroots engagement.

"Only a few people knew about climate change in the past decade. But now, with increased awareness through different campaigns using social media, international and local media stations, national dailies, as well as grassroots-level discussions, people—including people with disabilities—are becoming more aware of climate change issues and climate action." (KII with youth NGO, National)

Women have been primary targets of these initiatives, learning about flood preparedness, water conservation, and sustainable farming techniques. One KII respondent in Jigawa noted, *"[...] we are always working on climate change. We try to see how we engage the women, especially for it to be adopted to issues related to climate change. Because if I have not forgotten, last year and this year, we had a series of programs, a series of sensitisation, series of awareness creation for the women especially from the marginalised group or from the vulnerable population to see how we get them one or two seedlings of trees to plant it in their various home."* (KII with Future Development for Better Community initiative).

People with disabilities, however, have reported limited accessibility to these programmes, particularly when information is not provided in accessible formats such as braille or sign language. One KII respondent explained, *"This is why always we say there is need for government to provide sign language interpreters in our schools, markets, especially in our police stations, courts, hospitals."* (KII Pilot with OPD)

5. Conflict mitigation over natural resources

Farmer-herder conflict mitigation strategies, such as the establishment of farmer-herder boards, aim to reduce climate-induced tensions over resources. As climate change exacerbates land and water scarcity, conflicts between farmers and herders have intensified (Efobi, et.al., 2025; Olufunke et al., 2023). In response, stakeholders, including the Ministry of Agriculture and local peace-building organisations, have formed farmer-herder conflict resolution boards to mediate disputes. According to a KII government respondent in Jigawa, these interventions are reported to have helped minimise violence and promote coexistence: *"We have a board here in the ministry of Agriculture called the Farmer-Herdsman Board. It was established in 2012 and they've been doing a wonderful job in managing the conflict – that's why most of the farmer-herdsman conflict has reduced or is minimal."* (KII with MDA, Jigawa). However, people with disabilities have largely been excluded from decision-

making spaces in these interventions, highlighting the need for greater inclusivity. One FGD respondent from the men with disabilities group in Kaduna said:

"We can't help ourselves, let alone assisting others. We are not involved in political activities. They discriminate against us. They don't give us leadership positions. There are countries whose governors, ministers are people with disabilities. In this country they don't give us such opportunities." (FGD with men with disabilities, Kaduna).

6. Climate-smart agriculture/ technological solutions

Climate-smart agricultural interventions like irrigation systems aim to enhance food security and reduce vulnerability. Primary data indicates that government has introduced some climate-smart agriculture initiatives to combat food insecurity and secure livelihoods. One KII respondent at the Ministry of Environment stated, *"We have about over 500 solar pumps for irrigation farming to be distributed across. You know the selection criteria; we have to make sure that all are involved – the disabled people. You could see them there"* (KII with MDA, Kaduna). These initiatives are designed to support farmers (including women and other small holder groups) with agricultural productivity despite erratic rainfall patterns influenced by climate change.

The rollout of advanced livestock resilience projects, including veterinary training and breed improvement programmes, is intended to support climate adaptation in agriculture. According to one KII respondent in Kaduna, the government has introduced veterinary outreach programmes, drought-resistant breed development (including through artificial insemination), and animal vaccination campaigns to improve livestock survival in changing climates.

7. Humanitarian response

Findings from the primary research indicate that provision of relief materials and other support for flood victims, including food, shelter, palliatives, relocation, and resettlement, is helping people to cope with the impact of climate-induced displacement. Floods continue to devastate communities, displacing families and disrupting livelihoods. In response, government agencies, and NGOs/CSOs, have provided emergency relief materials such as food, shelter, and medical supplies to affected populations. One FGD respondent noted, *"the government has tried in provision of relief material for the victims of flood and also gave them where to stay."* (FGD with women with disabilities, Jigawa). Women, particularly those who are pregnant or caregivers, face heightened vulnerabilities during disasters, making access to these provisions critical in reducing hardship. According to one KII respondent, *"There were instances where, because there was so much water and gullies, they would tell you that's how they watched a pregnant woman die because they couldn't get across the water"* (KII with youth NGO, Kano). People with disabilities also benefit from targeted support, though some respondents indicated that distribution processes often lack accessibility measures, making it difficult for them to receive aid efficiently. Evidence further

indicates that individuals with disabilities have very limited access to aid due to insufficient accessibility provisions (Udora, 2024; CBM et al., 2019).

Social protection and cash transfer programmes are reported to provide financial relief to vulnerable populations, mitigating the economic strain of climate-induced shocks.

Climate change disproportionately affects economically disadvantaged groups, including women and people with disabilities, who have fewer financial buffers to withstand climate shocks (DEEP, 2004). To mitigate these challenges, social protection programme, including direct cash transfers and subsidies, have been rolled out by government bodies, NGOs, and international donors. Several KII respondents in Jigawa affirm this; one respondent noted:

"I think N10,000 was transferred to 4,000 households in each local government with 1,000 dedicated to female households. We usually give 50 or 30 quotas to women out of 100 especially if they are widowed. If we are going for a household, we won't segregate but, in some cases, we normally pick them out and target them." (KII with MDA, Jigawa).

These programmes are intended to assist women in securing food and healthcare for their families, particularly in times of drought or flooding when resources become scarce. Another KII respondent in Jigawa stated:

"We also support them in their business by providing access to funds. We support them in cash by giving them money to improve in their businesses. Recently, we have 12,000 women that have been supported with N50,000 each under J-CARES. We also use a method of high welfare. That is the issue of safe motherhood initiative." (KII with MDA, Jigawa).

Despite the reported benefits, respondents highlighted concerns about the inconsistent distribution of funds and the exclusion of some vulnerable individuals due to bureaucratic hurdles.

"When such assistance comes from the government, the organisers select their relatives and friends. The target beneficiaries are excluded. I have never benefitted from such a programme." (FGD with widows, Kano).

8. Natural resource management

Findings suggest that water and sanitation projects, including boreholes, dams, and irrigation networks, prevent climate-related water insecurity and mitigate health risks.

Access to clean water is a growing challenge due to erratic rainfall patterns and prolonged droughts (Ogunrinde et al., 2022). Stakeholders, including government agencies, NGOs, and community-led initiatives, have implemented water security projects to ensure sustainable access to water for drinking, farming, and sanitation. Women, who are often responsible for household water collection, benefit significantly from nearby boreholes and wells, reducing the time and physical strain associated with long-distance water retrieval.

"In this town, three tap water points were created to provide water for us by the local government. Before now, even if you had food to cook, you couldn't cook because there was no water to use, but now it is a little better." (FGD with women pastoralists)

9. Infrastructure development

Primary data shows that road and bridge construction improve accessibility and mobility, preventing further marginalisation of climate-affected communities. The destruction of roads and bridges due to climate-related disasters often isolates communities, making it difficult to access markets, schools, and health services (Aborode et al., 2025). Both KII and FGD respondents agreed that various stakeholders, but especially government, has undertaken road rehabilitation and bridge construction to enhance resilience against future climate events. For both women and people with disabilities, improved infrastructure facilitates mobility, economic participation, and access to essential services. One FGD respondent noted, *“the government has made efforts to construct roads for us. In the past, this community was rural. We use the boat to get to this place. Now there is power, water, and market places.”* (FGD with women with disabilities, Kaduna).

10. Development of climate change policies

In recent years, efforts to institutionalise climate action in the target states have gained significant traction through the development of formal climate change policies. Both Kano and Kaduna states have successfully developed and enacted comprehensive climate change policies into law, with a strong emphasis on inclusivity, particularly for women and people with disabilities. These policy frameworks are designed not only to guide sustainable development but also to ensure the participation and protection of vulnerable groups within climate adaptation and mitigation strategies.

Jigawa State is in the preparatory phase of developing its own climate change policy. Stakeholders in Jigawa have indicated that inclusivity will also be a guiding principle as the policy formulation progresses. These policy developments represent a critical step toward mainstreaming climate resilience across all population segments, particularly those most at risk, and demonstrate growing political commitment to equitable climate governance in Northern Nigeria.

3.6.2 Key stakeholders in preventing and mitigating the impact of climate change on women and people with disabilities in Nigeria

Stakeholder analysis suggests that a range of actors have critical roles to play in shaping climate-related policies, implementing adaptation strategies, and supporting vulnerable groups, particularly women and people with disabilities. Government institutions, international organisations, local and international NGOs, civil society groups, donor agencies, community leaders and individuals are all implicated. The following sections categorise and analyse these key stakeholders, highlighting their contributions and effectiveness in addressing climate challenges.

i. Government institutions and agencies

The Nigerian government has established a range of institutions and agencies to lead climate action efforts at federal, state, and local levels. They have taken steps to institutionalise climate action by establishing relevant ministries, commissions, and agencies

at both the federal and state levels. Respondents from MDAs reported that the Ministry of Environment and Climate Change, along with its parastatals, leads climate change initiatives at federal and state levels. Other agencies, such as the State Emergency Agency, Watershed Erosion and Climate Change Management Agency, Environmental Planning and Protection Agency, and Waste Management Agency focus on adaptation measures, erosion control, climate disaster management, and community resilience. MDA respondents also emphasised the role of the Federal and State Ministries of Agriculture in sustainable agricultural interventions, while the Commission for Climate Change in Nigeria provides policy oversight.

Additionally, local governments are active in climate governance, providing support for vulnerable communities, funding initiatives, and implementing policies that promote climate resilience. Advocacy by organisations like Women Environmental Programme (WEP) has raised awareness at sub-national levels, encouraging states to adopt gender-sensitive policies guided by the National Action Plan on Gender and Climate Change (NAPGCC)¹³. Respondents highlighted the importance of sustainable agricultural interventions led by Federal and State Ministries of Agriculture while emphasising the need for stronger implementation frameworks at all levels (WECF, 2021). Nigeria has also committed to addressing gender disparities through its revised NDC in 2021.

ii. International organisations and donor agencies

International organisations and donor agencies play a crucial role in providing financial and technical support for climate change mitigation and adaptation in Nigeria. Several international organisations and donor agencies provide financial and technical support for climate change mitigation and adaptation in Nigeria (see list below).

- The World Bank, through projects like Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL), funds initiatives that empower women and people with disabilities. According to a national KII respondent, *"it has important components related to livelihood, climate change, water, erosion, and everything else concerning environmental protection. The project has empowered a significant number of women, lifting them out of poverty."*
 - The FCDO sponsors research and interventions in climate change and adaptation for vulnerable populations.
 - The African Development Bank (AfDB)
 - The European Union (EU),
 - The French Government funds projects related to sustainable agriculture, food security, and climate resilience.

iii. Civil society

¹³ Developed by the Department of Climate Change in consultation with stakeholders such as CSOs, the United Nations Development Programme (UNDP), academia, youth groups, and farmers, the NAPGCC aims to ensure inclusive participation in climate initiatives (Federal Government of Nigeria, 2021).

Both KII and FGD respondents emphasised that local and international NGOs are instrumental in addressing climate change impacts on vulnerable populations, particularly women and people with disabilities. NGOs play a critical role in implementing climate change interventions at the grassroots level, especially for women and people with disabilities. For example, the [Disability Rights Fund](#) has supported climate justice initiatives for women and girls with disabilities. Participants also mentioned ActionAid, the WEP, the Global Initiative for Food Security Programme (GIFSEP), Federation of Muslim Women Association of Nigeria (FOMWAN) and Panacea, as other NGOs actively involved in addressing climate change impacts on vulnerable populations. For instance, FOMWAN has held national conferences to discuss climate issues, and distribute educational materials to enlighten women on climate adaptation. Additionally, the Arewa Women Initiative on Climate Change, Nigeria Environmental Society, and Accountability Initiative for Climate Change contribute to policy advocacy and community engagement. These NGOs also focus on integrating gender and disability concerns into climate change interventions, ensuring inclusivity in adaptation strategies.

CSOs and CBOs serve as key drivers of awareness campaigns, advocacy, and direct interventions. Some associations distribute tree seedlings for reforestation efforts and promote sustainable agricultural practices, such as container gardening. Additionally, religious, and interfaith groups in Kaduna and other states have initiated discussions on state-specific climate challenges and how to support affected communities.

v. Traditional and community leaders

Traditional leaders, ward heads, and community elders also play a vital role in mobilising local participation in climate change programmes. They facilitate community engagement in climate initiatives, ensuring that interventions reach the grassroots level. In some cases, governments and NGOs collaborate with traditional leaders to identify key stakeholders for climate adaptation programmes, including women and people with disabilities.

3.6 3 Effectiveness of stakeholders' interventions

Stakeholders have made significant contributions to climate change mitigation and adaptation in Nigeria, but challenges in policy implementation and sustainability persist. While these stakeholders have contributed significantly to climate change mitigation and adaptation, challenges remain in terms of policy implementation and sustainability. Government agencies have established policies, but enforcement is often weak due to bureaucratic inefficiencies and lack of funding (Onuh et al., 2024). According to one KII respondent in Kaduna State:

"Recently the state government, for the first time signed the climate change policy and launched the Climate Assessment Framework. (...) But in terms of state policy, each sub-national, on paper, key in into the national policy, but poor implementation (...). the issue is even at the national, the scorecard is poor, it is an F (very poor). In the entire country, only Lagos State is trying in terms of climate policy implementation, adaptation and monitoring. Maybe because their vulnerability is high".

International organisations and donor agencies provide crucial support, but long-term sustainability depends on local ownership of interventions. NGOs and CSOs have been effective in reaching marginalised groups, yet their efforts require stronger collaboration with government institutions to scale up impact. Community involvement has proven essential, as grassroots participation enhances the success of interventions (Ayantayo et al., 2025). According to one NGO respondent in Kaduna:

"I think there are some policies and programmes that the government is trying to bring. It is the implementation and monitoring aspect that makes the programme not yield results in society. That is why we are always agitating for NGOs to join the monitoring and implementation. Organisations like Jam'iyyar Matan Arewa have a lot of members at the grassroots across the 19 Northern States. So, if we partner with government and non-governmental organisations, we foresee positive change in the policy. NGOs and CSOs are trying their best. There are so many things they want to do but they can't because they don't have the financial might which is a major constraint. NGOs are not well funded. So, if they don't have fund, no matter how they want to impact, they can't. They are limited."



4. Conclusions

Climate impacts multiple aspects of life, including mobility, conflict, migration, access to services, livelihoods, poverty, inside and outside the home, for the people of Kano, Kaduna and Jigawa. Climate change impacts are felt both directly (e.g. loss of livelihoods) and indirectly (e.g. reduced social capital leading to increased financial insecurity). Everyone is affected due to the significance of the agrarian economy in all three states, the shared experience of how extreme weather conditions are having an adverse impact on the whole landscape (including financial, social and human capital), and the scarcity of resources.

Although everyone experiences the negative effects of climate change, women and people with disabilities are particularly affected due to the way that existing inequities are exacerbated – the multiplier effect. The experience of women and people with disabilities differs from each other in important respects, but the study revealed a range of experiences that are common to the experience of both groups, brought into sharp focus by an intersectional analysis. The impact of climate on women and people with disability tends to be more severe because both groups were already experiencing inequities driven by societal norms and behaviours that restrict the opportunities and resources available to women and people with disability; limited access to information and participation; and lack of appropriate measures that recognise and respond to their different needs (for example with respect to safety and security, childcare responsibilities or health).

Our study highlights how the impacts of climate change are experienced differently by women and people with disabilities, depending on intersecting social characteristics and the nature of their impairments. Factors such as age, motherhood, religion, geographic location, socio-economic status, and type of disability can compound the effects of climate change for women, girls, and people with disabilities. For instance, respondents described how climate-related challenges exacerbate existing risks of violence, particularly for younger women and girls, mothers, and those living in rural areas. The data also indicated that individuals with different disabilities including albinism, and mobility, visual, hearing, and speech impairments, are affected in distinct ways. Notably, cognitive impairments were not mentioned by participants, underscoring the continued invisibility of this form of disability.

Diverse climate adaptation efforts across Kano, Kaduna, and Jigawa involves many stakeholders and span a range of areas across flood prevention, afforestation, climate-smart agriculture, pollution control, and humanitarian relief. Climate action in Nigeria is multi-actor, involving government bodies, international donors, NGOs, CBOs, and traditional leaders, each contributing to mitigation, adaptation, and support for vulnerable groups. Government plays a central role through the relevant MDAs at both the federal and state levels; while civil society and community leaders play key roles in delivering inclusive, grassroots-focused climate interventions. Although these interventions aim to reach marginalised groups such as women and people with disabilities, accessibility and sustainability issues persist.

Despite the range of interventions and stakeholders, climate initiatives often fail to reach those with greatest need. The study highlighted a wide range of barriers – environmental, institutional and attitudinal. In the absence of adequate community sensitisation and inclusive governance, many initiatives still exclude people with disabilities due to communication and participation barriers. Organisations and interventions are often poorly resourced and male-dominated, sidelining women and people with disabilities from policymaking, funding access, and participation due to gender norms, lack of inclusive planning, and inadequate outreach. Poor infrastructure, inaccessible shelters, and limited transport options especially during climate events restrict the physical participation of people with disabilities and expose women (particularly in IDP camps) to heightened risks. Harmful social attitudes, GBV, and lack of inclusive communication perpetuate marginalisation, reducing access to information, participation opportunities, and the ability to make informed decisions about climate adaptation.

In conclusion, addressing the impacts of climate change on women and people with disabilities in Kano, Kaduna and Jigawa requires a coordinated multi-stakeholder approach to ensure inclusive and sustainable solutions. The combined efforts of government agencies, international donors, NGOs, civil society groups, traditional leaders, and research institutions are necessary to implement sustainable solutions that recognise the complexity and interconnected nature of the impacts, and the specific needs of marginalised groups. For interventions to be truly effective, there must be improved policy enforcement, increased funding, a clear commitment to and strategy for more inclusive approaches, and stronger collaboration among stakeholders. Without these critical elements, vulnerable populations will continue to be left behind in climate adaptation efforts.

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Annex 1: List of KII and FGD respondents

a. National/Federal Level KIIs

Name of Organisation	Types
Federation of Muslim Women Association of Nigeria	NGO
Joint National Association of Persons with Disabilities	NGO
Network of Women with Disabilities	NGO
Education as a Vaccine	NGO
Climate & Sustainable Development Network	NGO

Kano State

Name of Organisation	Types	Local Government Area (LGA)
Ministry of Environment & Climate Change	Government/MDA	Kano Metropolitan
Ministry of Women Affairs, Children & Disabled	Government/MDA	Kano Metropolitan
State Emergency Management Agency	Government/MDA	Kano Metropolitan
CEDAR SEED Foundation	NGO	Kano Metropolitan
The Panacea Foundation	NGO	Kano Metropolitan
Start-up Kano	NGO	Kano Metropolitan

FGDs

Group Type	LGA
Women without disabilities	Rano
Women with disabilities	Rano
Men with disabilities	Rano
Pastoralist	Rano

Kaduna State

Name of Organisation	Types	LGA
Ministry of Environment and Natural Resources	Government/MDA	Kaduna Metropolitan
Ministry of Human Services & Social Development	Government/MDA	Kaduna Metropolitan
State Emergency Management Agency	Government/MDA	Kaduna Metropolitan
Federation of Muslim Women Association of Nigeria	NGO	Kaduna Metropolitan
Climate Economics & Sustainability Initiative	NGO	Kaduna Metropolitan
Enhancing Community Action for Peace & Better Health	NGO	Kaduna Metropolitan

FGD

Group Type	LGA
Women without disabilities	Kaduna Metropolitan
Women without disabilities	Chikun
Women with disabilities	Chikun
Men with disabilities	Kaduna Metropolitan

Jigawa State

Name of Organisation	Types	LGA
Ministry of Women Affairs	Government/MDA	Dutse Metropolitan
Ministry of Environment	Government/MDA	Dutse Metropolitan
Ministry of Agriculture	Government/MDA	Dutse Metropolitan
State Emergency Management Agency	Government/MDA	Dutse Metropolitan
Community Intervention & Relief Initiative	NGO	Dutse Metropolitan

Concern Initiative Development for Vulnerable People	NGO	Dutse Metropolitan
Future Development for Better Community Initiative	NGO	Dutse Metropolitan

FGD

Group Type	LGA
Men with disabilities	Dutse Metropolitan
Men with disabilities	Miga
Women with disabilities	Miga
Women with disabilities	Dutse Metropolitan

Annex 2: TAG members

Organisation
Education as a Vaccine (EVA)
Joint National Association of Persons with Disability (JONAPWD)
Network of Women with Disabilities (NWD)
The Federation of Muslim Women's Associations in Nigeria (FOMWAN)

Annex 3: Demographic data

Gender Distribution

The study sample comprised more women than men, with women representing 64.9% and men 35.1% of respondents. Participants included individuals of all genders with disabilities.

Table 1: Distribution of interviews by gender

Gender	Frequency (%)
Female	113 (64.9)
Male	61 (35.1)
Total	174

Geographic Location

Respondents were drawn from both urban and rural areas to reflect diverse lived experiences. 7 FGDs were conducted in urban settings and 8 FGDs took place in rural areas. All 22 KIIs were conducted in urban LGAs. This distribution provides insight into how climate change impacts may vary across different geographic contexts. However, it was not possible to sample from peri-urban areas within the scope of the research.

Table 2: Distribution of interviews by geographic location

	Kano		Kaduna		Jigawa		Total	
	FGD	KII	FGD	KII	FGD	KII	FGD	KII
Urban	3	9	2	6	2	7	7	22
Rural	4	0	2	0	2	0	8	0

Disability Status

The study included participants with varying disability statuses. Of the total respondents, 102 (58.6%) reported no disability, 69 (39.7%) identified as having some form of disability, and 3 (1.7%) preferred not to disclose their status. This diversity allowed for an exploration of how climate change disproportionately affects individuals with disabilities.

Table 3: Distribution of interviews by type of disability

Type of disability	Frequency (%)
Hearing Impairment	16 (9.2)
Person with Albinism	4 (2.3)
Physically Challenged	32 (18.4)
Visual Impairment	17 (9.8)
No	102 (58.6)
Prefer not to say	3 (1.7)
Total	174

Age Distribution

Participants represented a range of age groups, ensuring intergenerational perspectives on climate change's impact.

Table 4: Distribution of interviews by age

Age	Frequency (%)
18 – 25	38 (21.9)
26 – 30	18 (10.3)
31 – 35	29 (16.7)
36 – 40	27 (15.5)
41 – 45	17 (9.8)
46 – 50	14 (8.0)

51 – 55	10 (5.7)
56 years and above	21 (12.1)
Total	174

Annex 4: Key stakeholders

SN	Agency or Organisation	State covered	Focus of intervention
A	Government agencies and institutions		
	Ministry of Environment and Climate Change	National, Kano, Kaduna, Jigawa	Leads climate change initiatives at both federal and state levels
	Emergency Management Agency	National, Kano, Kaduna, Jigawa	Focus on adaptation measures and climate disaster management at the national and state levels.
	Commission for Climate Change in Nigeria	National	Provides policy oversight at the national level.
	Ministry of Agriculture	National, Kano, Kaduna, Jigawa	Play a key role in sustainable agricultural interventions
	Watershed Erosion and Climate Change Management Agency	Kano	Focus on erosion control, climate adaptation measures and climate disaster management at the state level.
	Waste Management Agency	Kano, Kaduna, Jigawa	Focus on waste management, pollution control and adaptation measures at the state level
B	International organisations and donors		
	The World Bank	19 Northern states including KKJ	Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) to tackle the pressing issues of land degradation and climate change. FADAMA project to manage water issues and erosion.
	FCDO	Kano, Kaduna, Jigawa	Sponsors research and interventions in climate change and adaptation for vulnerable populations such as PACE

	USAID	Jigawa	Supported agriculture and livelihood for women and people with disabilities
	International Fund for Agricultural Development (IFAD)	Jigawa	Strengthening the environmental sustainability and climate resilience and livelihood of women and people with disabilities.
	African Development Bank (AfDB)	Kano, Kaduna, Jigawa	Climate resilient seedlings to help tackle environmental issues. AFDB projects addressing climate change and resilience.
	European Union (EU), and French Government	Kano, Kaduna, Jigawa	Fund projects related to sustainable agriculture, food security, and climate resilience with the inclusion of women and people with disabilities.
C	National and international NGOs		
	Disability Rights Fund	National	Supported climate justice initiatives for women and girls with disabilities across many states.
	Action Aid	National, Kano, Kaduna, Jigawa	Actively involved in interventions addressing climate change impacts on vulnerable populations.
	Women Environmental Programme (WEP)	National	Support climate change-related interventions and governance issues among
	Global Initiative for Food Security Programme (GIFSEP)	National, Kano, Kaduna, Jigawa	Support climate change-related interventions among women and people with disabilities
	FOMWAN	National, Kano, Kaduna, Jigawa	Create awareness through conferences to discuss climate change issues, distribute educational materials to enlighten women on climate adaptation, and support the victims and women.
	Jam'iyyar Matan Arewa, Panacea Charity Organisation,	Kano, Kaduna, Jigawa	Distributed tree seedlings for reforestation and promotes sustainable agricultural practices, e.g. container gardening

	and Women in Agriculture (WIA)		
D	CBOs		
	Religious and interfaith groups	Kano, Kaduna, Jigawa	Awareness and discussions on state-specific climate challenges and how to support affected vulnerable populations e.g. Women and people with disabilities.
	Community groups	Kano, Kaduna, Jigawa	Advocacy and awareness on climate change.

Annex 5: Summary of key state characteristics

	Kano	Kaduna	Jigawa
Climate change trends	Intense Harmattan: Drier and more prolonged periods. Heightened risk of urban flooding and heatwaves, impacting large populations.	Pronounced drought and flooding in recent years has affected agricultural livelihoods and tensions over scarce land and water resources	Expanding desert conditions due to deforestation with attendant increase in sandstorms, reduction of arable land and grazing areas. Seasonal floods, particularly in riverine areas, destroying homes, farms and infrastructure; closure of schools; health risks (cholera, malaria, malnutrition)
Rural/Urban dynamics	Predominantly urban/urbanising, with high population density exacerbates poverty pressures and flooding vulnerability. Strained resources due to urbanisation. Rural populations heavily impacted by erratic rainfall.	Agriculture is the main source of livelihood for men. Women also involved in petty business. Urban respondents demonstrated high levels of scientific knowledge and awareness on the subject of climate change (high levels of education and government efforts to raise awareness)	Highly agrarian (90% of population). Women and people with disabilities, who are often engaged in small-scale farming and trading, experiencing income loss. Pastoralists face challenges over reduced grazing land, leading to conflicts over resources.
Migration and displacement	Kano is a host community for internally displaced persons and economic migrants – increased migration to urban centres, and increased out	Increased insecurity as a result of farmer-herder conflict, especially in rural areas and southern Kaduna because of the greener vegetation. High rates of migration to neighbouring states	Loss of land due to floods forcing communities to relocate, sometimes leading to cultural disintegration and tensions over resources. Pastoralist

	<p>migration, straining infrastructure.</p> <p>Pastoralist communities heavily impacted by drought and few cases of migration recorded</p>	<p>due to conflict and banditry.</p>	<p>migration high due to international border.</p>
Culture/ religion	<p>Islamic teaching influences environmental stewardship, but extremist views can limit women's opportunities.</p> <p>Stronger traditional and religious influences, impacting gender norms and social structures. Higher adherence to dress codes and traditional elder authority.</p>	<p>Culturally mixed state. In predominantly Muslim northern Kaduna, women are more restricted in conducting business/activities/decision-making.</p>	<p>Deforestation to harvest firewood threatens traditional livelihoods and practices dependent on forest resources (loss of biodiversity)</p>
Government response/ Interventions	<p>State Climate Change Policy Framework approved in January 2025 includes protecting vulnerable communities and ensuring gender-inclusive climate actions.</p> <p>High population density strains existing healthcare and education infrastructure.</p> <p>Challenges in providing equitable access to services, especially for disadvantaged groups and</p>	<p>10-year state climate change policy launched in July 2024 and encourages afforestation.</p> <p>Respondents with disabilities feel they are not supported by government.</p>	<p>Currently no state climate change policy but there are targeted interventions for women. Long bureaucratic processes in the implementation of adaptation and mitigation strategies</p> <p>Flood responses remain inadequate, leaving many vulnerable communities without support</p> <p>Government provides free healthcare and education for people with disabilities.</p> <p>Women in Agriculture (WIA) unit in every</p>

	reaching rural populations		local government area (LGA) in the state
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