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Migration as an adaptation strategy to climate change - the northern Nigeria context

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Abstract

Climate change adverse effects lead to the displacement of populations and migration-used as an adaptation strategy. The negative impact is pronounced in that institutions tasked with the control and safeguarding of humans affected, and their security lacks the capacity, leading to mass migration to the transit and receiving areas, resulting in resource contestations aggravating conflict among groups. Therefore, this study examines the migration process as an adaptation strategy and the implications for 'sending,' 'transit,' and 'receiving' areas, focusing on a case study in Nigeria. The empirical findings highlighted how the drivers of existing migration streams are sensitive to climate change in Nigeria by relying on NVivo-assisted qualitative analysis of twelve in-depth interviews, combined with two Focus Group discussions (FGDs) conducted in Nogoa, Makurdi, Benue state, Nigeria, incorporating policy analysis, producing novel conceptual insights into the intertwining of climate change, migration and adaptive capacity of people, illustrating that climate change cause migration of people to the southern parts less affected by the adverse effects of climate change, which can impinge on resources, water and land. Although other studies have investigated this phenomenon, Nigeria remains less studied. As such, this study delves deeper into the Nigerian context and offers a robust and multidisciplinary investigation of climate change-induced internal migration as an adaptation strategy, offering a meaningful understanding of individual behaviours/decision-making concerning migration using conceptual frameworks. Adopting the contextualisation paradigm, I examined environmental and socio-contextual factors in migration systems of individuals, households, and pastoralists from the sending region-north to transit and destination area-south, transforming to conflict destabilising the relative peace of Nigeria. From a theoretical perspective, I espouse and apply Sustainable Livelihood, Eco-Violence, and Frustration Aggression theoretical frameworks to investigate/establish the displacement of populations and climate induced-internal migration as an adaptation strategy in Nigeria, which my findings ultimately help reshape our understanding.

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List of acronyms and abbreviations

AC Adaptive capacity

ACCES Africa Climate Change Environment and Security

AU African Union

ADB Asian Development Bank

AOSIS Alliance of Small Island States

CFCs Chlorofluorocarbons

CH_4 Methane

CO_2 Carbon Dioxide

DCCMEN-Department of Climate Change Ministry of Environment Nigeria

ESA European Space Agency

ET Evapotranspiration

EU European Union

EV Eco Violence

FGDs Focus group discussions

FGMEO Focus Group Ministry of Environment Official

FGLGO Focus Group Local Government Official

FA Frustration Aggression

FAO Food and Agriculture Organisation of the United Nations

GMG Global Migration Group

H_2O Water Vapour

HCFCs and HFCs-Hydrofluorocarbons

HCL Host Community Leader

ICDP Integrated Community and Development projects

IDMC International Displacement Monitoring Centre

IFAD International Fund for Agricultural Development

IGAD Intergovernmental Authority on Development

IMF International Monetary Fund

IMI International Migration Institute

IOM International Organisation for Migration

IPCC Intergovernmental Panel on Climate Change

MEO Ministry of Environment Official

LGO	Local Government Official
N_2O	Nitrous Oxide
NASA	National Aeronautics and Space Administration
NGO	Non-Governmental Organisation
NEST	Nigerian Environmental Study/Action Team
NIMET	Nigeria Meteorological Agency
O_3	Ozone
OSH	Operation Safe Haven
PP	Push and Pull
SL	Social learning
SLF	Sustainable Livelihoods Framework
UCCMC	UK-Climate Change and Migration Coalition
UK	United Kingdom
U.N	United Nations
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioners for Refugees
UNDESA	United Nations Department of Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	The United Nations Framework Tradition on Climate Change
UNIFTPA	United Nations Interagency Framework Team for Preventive Action
USA	United States of America
WFP	World Food Programme
WHO	World Health Organisation

Chapter 1: Introduction

"The First IPCC Assessment Report (FAR) highlighted the significance of climate change as a challenge with global consequences requiring international cooperation. The report predicted that the gravest effects of climate change would be on human migration, causing large migrations of people as millions are displaced by shoreline erosion, coastal flooding and severe drought, thereby making sustenance impossible, which is the situation in Nigeria lately."
(IPCC, 1990; 1992: p.24-103).

1.1 Background to the research

Exploring climate-induced internal migration is significant because it allows us to analyse the adverse effects of climate change, including drought and desertification, in terms of their severity, timing, frequency, and geographical occurrence. The occurrence of these adverse effects, including unsafe living conditions and famine, may have repercussions (Baer and Singer, 2018).

Climate change has become a global issue of great concern. Climate change can be defined as an anomaly in the climate system because of human activities. Some of these anomalies are characterised by increased concentrations of HFCs, GHCs, and CFCs in the Earth's atmosphere, which is the leading cause of global warming. With the current situation, it is right to say that global warming is real (Trenberth et al., 2007). According to Amobi and Onyisi (2015: p.205), "various regions, generations, ages, classes, income groups, occupations, and gender will be affected by climate change." Liverman and Merideth (2002: p.202) stated that various aspects from all angles must be included in an all-inclusive study regarding climate change assessments that include institutions' key systems of governance about decision-making and a steady information process, socioeconomic conditions, values, cultural traditions, trends, and resource apportionment and usage. This will increase the

credibility of high-end projections of future climate-related migration, allowing for rigorous global estimates of the number of displaced or migrating individuals affected by the after effects of stress and shocks.

Climate change is an ongoing environmental challenge that is impacting human migration globally. In their study, Entwistle et al., (2020) claim that climate change will affect migration flows, potentially impacting as many migrants as half of the current global migrant population. Also, globally, the media, the public and policymakers are becoming more aware of this unfolding story. As a result, it is not surprising that narratives of climate change impacts on migration in popular literature and images in the public eye are dominated by stories of people who have been displaced from their homes and whose livelihoods have been affected (Bardsley and Hugo, 2010).

Between 2008 and 2016, over 24 million people have been displaced by the sudden onset of climate-related hazards, such as floods and typhoons (UNHCR, 2016). Climate change poses a grave challenge to the environment and living things. A warmer climate is unavoidable, regardless of what the global community does to reduce carbon emissions into the atmosphere (Baer and Singer, 2018). The effects are already being felt and are expected to intensify. The entire world is expected to experience the impact of this transformational challenge, with limited capacities to respond. For example, McLeman (2014) argues that African states are more vulnerable to multiple stresses of climate change. This vulnerability is driven by the usual low levels of socioeconomic growth on the continent.

Dessai et al., (2004) posited that approximately 250 million people in African countries are expected to suffer from food and water shortages because of climate change, as Africa is one of the most vulnerable continents to climate change and climate variability, a situation made worse by the combination of multiple stresses occurring at various levels and little adaptive capacity (Boko et al., 2007). Michielin (2023) argues that Africa's terrestrial and

marine ecosystems, crucial for environmental security, are facing increased strain due to climate change. Meteorological droughts (lack of rain) frequently lead to hydrological and agricultural droughts (lack of water in surface to underground water bodies, as well as moisture in the soil), putting crop water requirements at risk from both the rainfed and irrigation sides. Climate variability is responsible for up to 60% of yield variability in major parts of the world, thus making it a critical factor in food stability. There is a close relationship between societal well-being and environmental conditions in many parts of Africa, particularly concerning biomass for energy and food production, as well as water availability and quality. With rapidly changing patterns of human settlement and the intense use of ecosystem services, African societies face growing risks of climate change (Michielin, 2023).

Climate-related droughts and desertification are already swelling the tide of rural-urban migration across Africa. Environmental migrants from climate-related droughts and floods are already swelling the tide of rural-to-urban migration across Africa, and the trend is expected to intensify as drought increases its grip over large swathes of the continent. We lack sufficient empirical evidence to understand the extent to which climate change influences rural-urban migration, including the impact on urbanisation, such as resource contestation leading to conflict (Lilleør and Van den Broeck, 2011).

The overall aim of this study is to address the existing gap in the literature by exploring the factors that influence migration, with a specific focus on migration from the sending to transit and receiving areas leading to resource contestation and conflict in the context of climate change using a case study from Nigeria.

1.2 Climate change-induced migration as an adaptation strategy

Climate-induced migration comprises of two diverse dimensions: that is, as a cause dimension that involves climate-induced disaster events and their residual effects on people

and as a consequence dimension that constitutes the violation of human rights of the vulnerable and socio-economic deprivation of vital basic needs to sustain livelihoods (Craig, 2010). In other words, the causes and consequences of climate-induced migration and displacement can be explained multidimensionally (Betzold, 2015). The long-term residual effects of climate change can act as both visible and invisible drivers of migration, thus highlighting the need for a coherent collation of data on climate-induced migration globally.

Environmental migration or planned relocation lacks complete global data (Laczko and Aghazarm, 2009: Foresight, 2011). Differentiating whether climate is a vital driver of migration, as opposed to other factors or in conjunction with them, is a challenging task. In most cases, environmental factors are closely linked to socioeconomic, political, demographic, cultural, and personal factors that contribute to or prevent mobility (Laczko and Aghazarm, 2009; Foresight, 2011), making data collection difficult beyond fast-onset disasters that necessitate evacuations. The availability of data on population migration caused by gradual processes like sea level rise and drought is limited because of methodological constraints.

The International Displacement Monitoring Centre IDMC (2021a; 2023) is the best source for understanding global climate-related displacement, having recorded the number of people displaced annually by weather events since 2008. Even though IDMC figures do not capture smaller-scale events or instances where climate has an indirect influence on population movements, IDMC statistics provide evidence of the relative importance of specific types of weather events in generating displacements, such as floods, extreme storms, and droughts, which typically cause the most significant number of weather-related internal displacements each year, even though 2019 saw a considerable number of people displaced (see Figure 1.1). The IDMC (2023) statistics provide information in relation to identifying the number of people internally displaced because of weather-related events by region (see Fig.

1.2), making climate disasters the world's leading cause of internal displacement. Today, people are seven times more likely to be internally displaced by climate-fuelled disasters than natural disasters (*Ibid*).

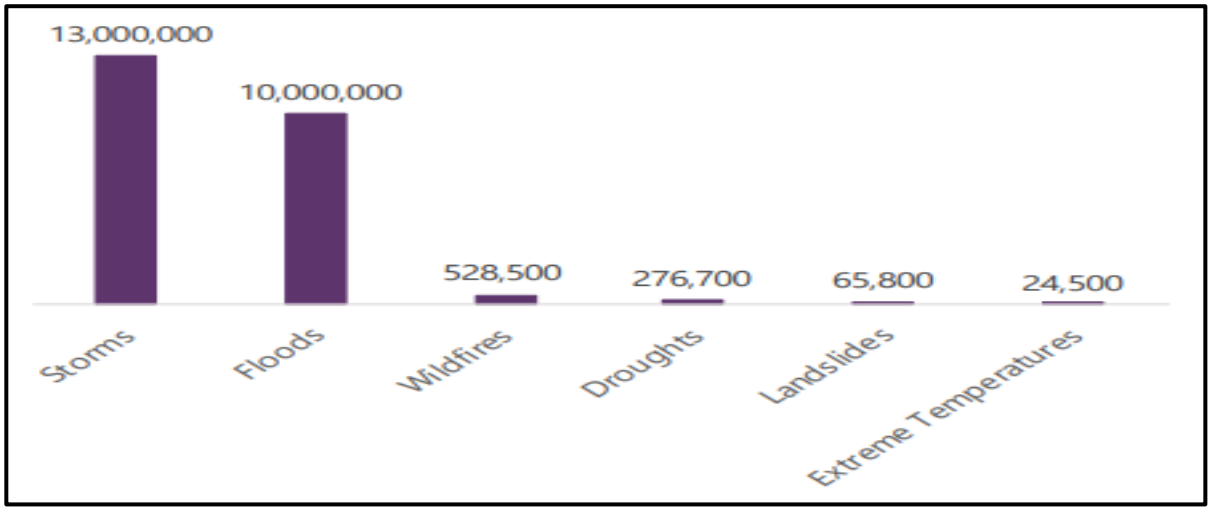

Figure 1.1: Disaster-Related Internal Displacements. (Source: IDMC, 2019; McLeman, 2020).

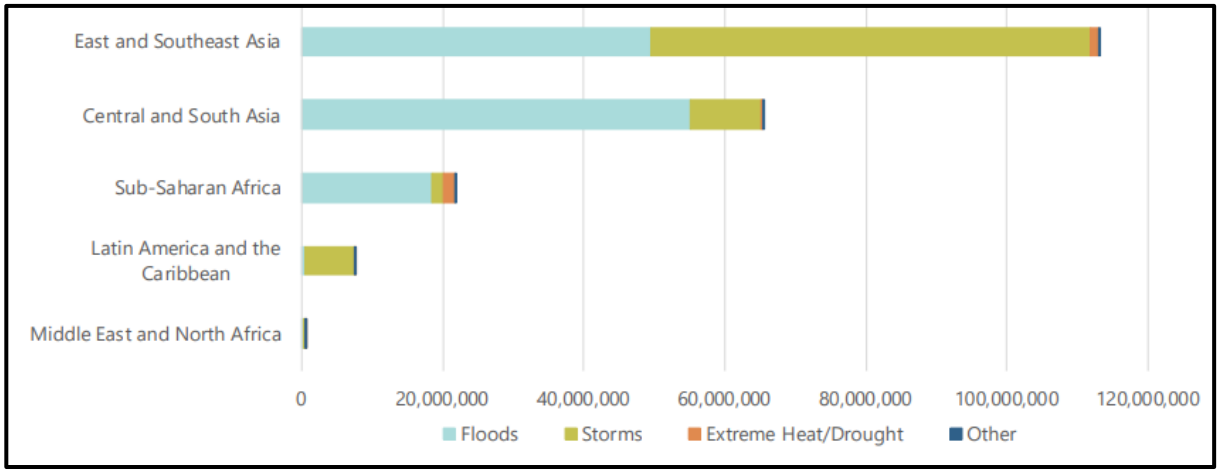

Figure 1.2: Global Number of People Internally Displaced by Weather-Related Events Index. (Source: IDMC, 2018; McLeman, 2020).

In the same outlook, Rigaud et al., (2021) backed up this statistic, emphasising on a recently projected scenario based on a more robust Groundswell report specifically for West Africa, an area of Africa that is currently witnessing serious climate-induced internal migration (Rigaud et al., 2018). This expanded model includes the optimistic scenario as a variable, as well as additional climate (net primary productivity, flood risk) and non-climate factors. Rigaud et al., (2021) based their modelling results on four different scenarios that

represent various combinations of future climate change impacts and development pathways. These scenarios were used to assess the extent and distribution of climate change by 2050. The scenarios are based on combinations of two (Shared Socioeconomic Pathways-SSP2) (moderate development) and SSP4 (unequal development)-and two Representative Concentration Pathways-RCP2.6 (low emissions) and RCP8.5 (high emissions). Also, by comparing these plausible scenarios, climate migration estimates are derived. (see Figure 1.3). Rigaud et al., (2021) assert that the scenario-based results are plausible outcomes rather than precise forecasts.

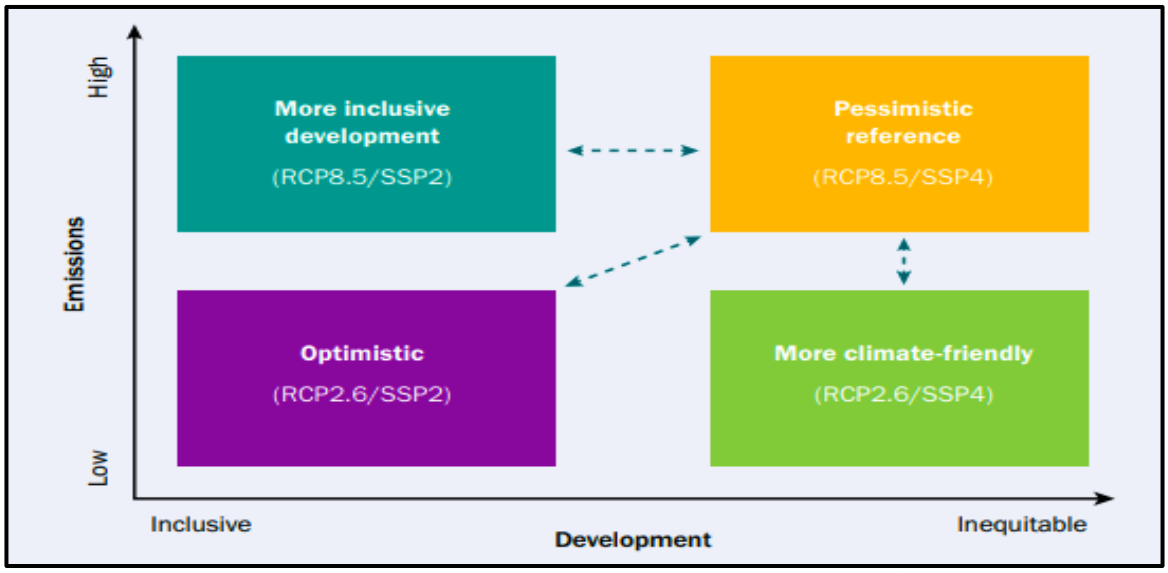

Figure 1.3: Projecting Internal Climate Migration under Four Plausible Scenarios. (Source: Rigaud et al., 2021).

The three scenarios[1] illustrated in Figure 1.4 show that Sub-Saharan Africa will probably experience increased internal climate migration because of reduced water

[1] The trajectory of internal climate migration in West Africa could increase between 2025 and 2050-with variations on the acceleration of increase between scenarios and countries. There is a consistent upward trend across the scenarios, with the higher emissions scenarios (pessimistic and inclusive development) showing higher rates of acceleration of internal climate migration over the decades. The scale of internal climate migrants in the countries within the region could see anywhere from a 3.3-fold increase to a 5.0-fold increase between 2025 and 2050. Greatest gains are realised under the optimistic scenario, which combines low emissions with equitable development. These projections emphasise the value of early action on both climate and development fronts (Rigaud et al., 2018).

availability and crop productivity. Internal climate migration varies by country and is influenced by demographic and economic trends, but climate is becoming an increasingly important factor. According to Rigaud et al., (2021), of the West African coastal countries, Nigeria is projected to have the highest mean number of internal climate migrants by 2050 (8.3 million), far ahead of Senegal (0.6 million) and Ghana (0.3). (See Section 1.4, page 21, explicitly dedicated to the case study Nigeria).

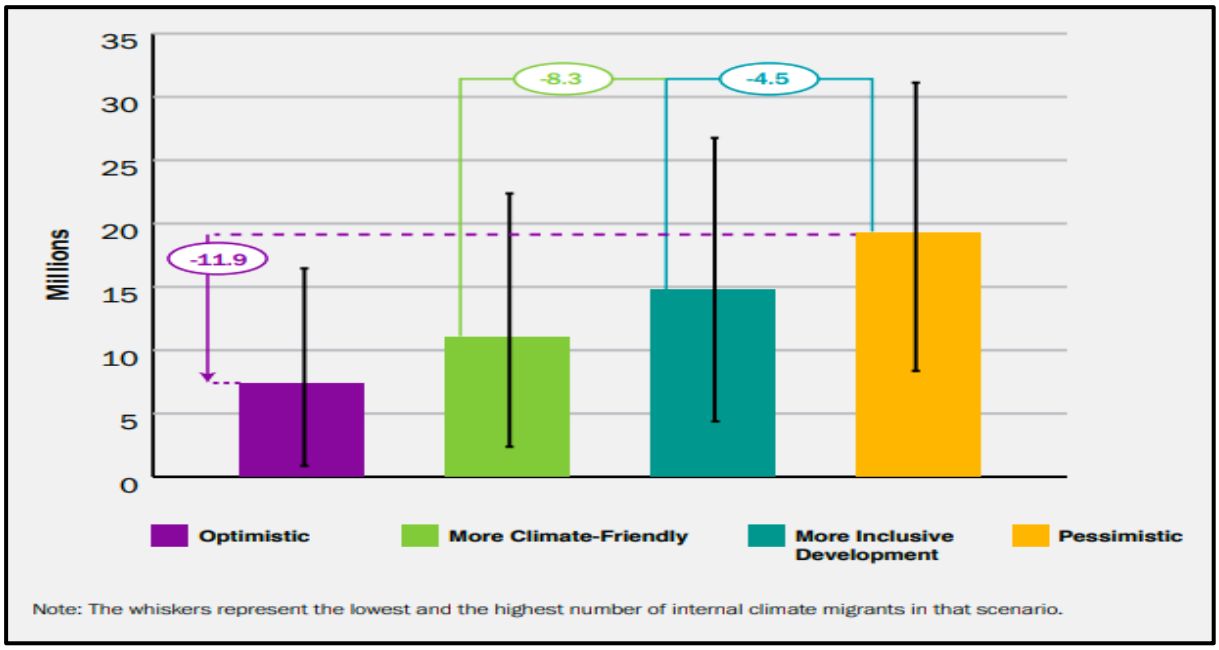

Figure 1.4: Projected Internal Climate Migrants in West African Countries under the Pessimistic Scenario by 2050. (Rigaud et al., 2021).

The more granular analysis provided by the expanded model is better suited for informing policy dialogue and action. A population gravity model was used to isolate the portion of future changes in population distribution attributed to climate change as a proxy for climate migration to estimate the scale of internal climate migrants. The methodology used is cutting-edge simulations for crop, water, net primary productivity (NPP), flood risk, and sea level rise with storm surge to capture the effects of slow-onset climate factors on internal migration. Non-climatic factors included demographic variables (sex and median age) and conflict. This expanded model was also applied to studying internal climate migration in West

African countries (Rigaud et al., 2021a).

Rigaud et al., (2018) argue that climate change will significantly impact livelihoods and migration patterns from now until 2050. Further, Rigaud et al., claim that climate change will influence migration because of warming weather and drought, which will affect agricultural production, access to water and rising sea levels, making coastal areas and island states uninhabitable, intensifying natural disasters, and competition over natural resources, which may contribute to conflicts. Rigaud et al., (2018) argue that comprehending uncertainty, variability, thresholds, and "tipping points" is crucial for understanding the effects of climate change and how they affect migration, as most parts of the world's regions will become hotter and drier. The IPCC (2013b) stated that the specific manifestations of climate change are uncertain due to natural variability, which will continue to be the dominant factor in observing climate trends in the near future, because the period from now to 2050 represents a transition period during which anthropogenic climate change, most especially about the atmosphere will be much more pronounced, necessitating the need for immediate action to combat climate change and its adverse effects. However, the spatial and temporal variability of the adverse effects of climate change makes precise predictions of the frequency or extent to which specific areas, countries, or regions will experience particular climate risks or hazards difficult, so this must be considered (Rigaud et al., 2010; 2018).

Randall (2017) states that many scholars have come to the conclusion that migration has been a customary method of dealing with challenges for many centuries and is expected to rise in response to climate change. Instead of perceiving migration as a final option, these researchers anticipated that it could emerge as a novel means for individuals to broaden their agricultural livelihoods in response to the impacts of climate change. Such migration strategies allow individuals to diversify their income and spread risk across the household. Nonetheless, migration as adaptation is a policy area that requires more attention.

Policymakers should think about how they can help people who want to leave dangerous areas, but are hindered by rising poverty and declining livelihoods.

McLeman (2016) explained that migration is a key component of sustainable livelihoods and household adaptive capacity in low-and middle-income countries, and the reliance on migration to meet rural livelihood needs is growing. As a result, the conversation about climate change and migration has shifted from describing migration as a result of climate impacts to describing it as a form of human adaptation (Vinke et al., 2020). Thus, the discourse has shifted since the 2000s from emphasising the forced nature of environmental migration and related security threats to highlighting migration as one possible, proactive adaptation solution that should be governed and facilitated (Piguet, 2013). This shift has been aided by policy experts (Honarmand et al., 2019), international organisations (Hall, 2015), and researchers (Sakdapolrak et al., 2016). The International Organisation for Migration is one key actor, having introduced the concept of "migration as adaptation" into many practice-oriented discourses (Felli, 2013). This gives migration a more positive spin than the contentious 'climate refugees' narrative. Migration has been reframed as a means of adaptation by major actors such as the Intergovernmental Panel on Climate Change (IPCC), and this is reflected in strategic documents such as the Cancun Adaptation Framework (UNFCCC, 2010), the Sendai Framework for Disaster Risk Reduction (UNISDR, 2015), and the Global Compact for Migration (UNGA, 2018).

One highlighted aspect of migration as an adaptation strategy revolve around the notion that households evaluate all available options for coping with hazards and select the ones that are best suited to their situation, which can include a conscious decision to migrate if necessary resources are available (Bilsborrow, 1992; McLeman and Smit, 2006; Black et al., 2011; McLeman, 2016). The authors see migration as having adaptive potential in generating income, diversifying livelihoods, spreading household risks, and social or financial

remittances (Ober and Sakdapolrak, 2017). While the new discourse has proven effective in some contexts, its limitations have become clear. Thus, the concept of migration as adaptation implies a positive relationship between migration and adaptation processes, with some form of anticipation and planning involved (Vinke, 2019; Vinke et al., 2020). It emphasises the proactive nature of migration decisions and migrants' agency in the migration process. (See Chapter 2, subsection 2.3.1 Agency (Migration capability discourse) on page 69) for a complete discussion on agency). However, whether households can use migration as an adaptation strategy is influenced by several factors, including the migration context and the households' capacities.

Already, record numbers of people are being forced to migrate to safe havens with each passing year because of climate change, and it is widely projected to be a factor influencing population distribution throughout history (ADB, 2009). Smit et al., (2012) assert that migration is currently viewed as an adaptation strategy. Migration is used as an adaptation to climate-related vulnerability in marginal environments. Henry, Schoumaker, and Beauchemin (2004) stated that during major droughts in Burkina Faso, short-term rural-rural migration to seek income diversification was a typical response. During the 1983-1985 drought in Mali, there was a significant increase in short-cycle circulatory migration, but migration to international destinations decreased (Findley, 1994). “Mountain populations have long adapted to living in fragile environments” (Ghobadi, Koettl and Vakis, 2005: p.12). Drought-affected households in Afghanistan were found to be more likely to have migrant members than drought-unaffected households. Mobility as an adaptive strategy plays a significant role in helping residents of mountain areas in northern Pakistan cope with the effects of environmental threats. Pastoralism as part of combined mountain agriculture, episodic mobility in response to natural disasters, or outmigration for jobs and education to diversify the household income structure are all examples of mobility (Kreutzmann, 2012). In

addition, a study conducted in the Chitwan Valley of south-east Nepal discovered that environmental change had a greater chance of influencing local (within Chitwan Valley) mobility than long-distance (outside Chitwan Valley) mobility. The likelihood of moving within the Chitwan Valley increased when agricultural productivity was perceived to be declining, the proportion of the neighbourhood covered in flora decreased, or the time required to gather firewood increased. Only a perceived decline in agricultural productivity was significant for long-distance mobility, but the effect was much weaker (Massey, Axinn and Ghimire, 2007: p.15).

1.2.1 The need for coherent institutional policy globally concerning climate migrant

Nishimura (2015) outlines the challenges in creating a Protection Framework, and also highlights the importance of incorporating migration into climate change adaptation strategies. Despite the reality of climate change, there is no international agreement or framework in place to plan for or address the expected dramatic increase in migration. Current international refugee, environmental, and human rights law does not account for climate-change-induced displacement and migration, resulting in legal gaps (Nishimura, 2015). While many international laws and policy frameworks mention people crossing borders because of climate change, comprehensive protection is still lacking. Therefore, a human rights-based approach to climate action and migration is necessary (Ibid). States should address the needs of climate change migrants and protect their rights. Such action includes measures to mitigate climate change, prevent its adverse effects on humans, and ensure that all people have the capacity and means to adapt and ensure accountability and the provision of effective remedies for climate change-related harms (UNHR, 1967). Thus, establishing effective systems of governance that will help our species survive climate change is paramount.

The current institutional policy landscape is not addressing the issues that must be addressed concerning climate migrant predicaments. For example, what protections do these

vulnerable people currently have, and what prospects for expansion do they have? A plethora of existing instruments offer varying populations more or fewer options, and many fall through the cracks (Huckstep and Ginn, 2023). Climate mitigation and reducing negative environmental change should remain top priorities for international policymakers. However, mechanisms for funding climate change adaptation must consider migration as a means of building resilience. Long term initiatives, such as those launched under the United Nations Framework Convention on Climate Change, must recognise the links between global environmental change and migration. These initiatives should consider the realities of migration, including both the benefits and the challenges. They should also focus on the resilience of populations moving to or trapped in urban areas vulnerable to environmental change, particularly in low-income countries (UNHCR, 2010).

Resilience measures, such as sustainable urbanisation, climate-smart development, conflict resolution, and emergency preparedness, which must account for an increased propensity for people to migrate are vital. For example, the 1951 Convention on Refugees, to which most people refer, excludes environmental refugees (UNHCR, 2005). Even though the Special Rapporteur's new report proposes creating an optional protocol under the 1951 Convention to "define and provide legal protection to persons displaced across international borders due to climate change," governments around the world have a lukewarm attitude in this regard, which is not deeply rooted in the policies and programmes of many countries (William, 2008; Beyani, 2011; Huckstep and Ginn, 2023). Some instruments provide or encourage protections. For instance, the 2018 Global Compacts on Migration and Refugees acknowledge the role of climate change in influencing migration patterns, but only offer non-binding objectives with limited implementation (Huckstep and Dempster, 2022).

Regional structures provide hope. One of these is the OAU Convention on Refugees of 1969 and the Cartagena Declaration of 1984 (UNHCR, 1984). The 1969 OAU Convention

stands out in two distinct ways: it is both a legally binding instrument and employs a broader definition of refugees. Also, the Convention protects those fleeing "events seriously disturbing public order," which may include those fleeing climate hazards (UNHCR, 1984). While the Cartagena Declaration of 1984 is not a legally binding agreement, it proposes that individuals escaping situations that have greatly disturbed public order should be safeguarded. However, the definition of 'public order' is not yet formalised, making it difficult to predict when populations may be covered (Hansen-Lohrey, 2022).

Nishimura (2015) states that international environmental law has limitations when it comes to addressing climate change migrants. Contrarily, the primary focus of the U.N. Framework Convention on Climate Change (UNFCCC) when it was drafted, was to prevent climate change impacts and plan for adaptation sustainably. In addition, because of climate change migrants lack of a precise definition, do not fit neatly into any international protection regime. The most relevant legal frameworks on climate change and human rights are not drafted to address/support current climate change-induced migration problems. This means that climate change migrants are unlikely to face the level of persecution required to qualify them as refugees. They are also not protected by current international environmental law treaties, which focus on state relationships and rights rather than individual rights. While climate change-induced migration affects various humans, there are no explicit human rights protections for climate change migrants (Nishimura, 2015).

In 2010, the United Nations Framework Convention on Climate Change (UNFCCC) endorsed the Cancun Adaptation Structure, urging all nations to improve understanding, coordination, and collaboration concerning environmental change adaptation. Countries must prepare for and respond to the effects of changing climate with adequate plans, such as flood protection, new agricultural practices, and improved environmental monitoring systems (McGray, 2010).

Other attempts have been made in the aftermath of the Cancun Adaption Framework to address climate change-induced displacement. In 2011, UNHCR hosted a roundtable discussion of experts on climate change and displacement, emphasising the need for a global guiding framework for external displacement not covered by the current refugee regime (UNHCR, 2011). Following UNHCR meetings, no such framework was developed. Measures suggested as part of the Cancun Adaptation Framework are entirely voluntary. They are also vague and represent a politically acceptable acknowledgement that has not resulted in concrete action or policy (Bradley and McAdam, 2012). While the geographic scope of the problem and the need for collaborative effort are recognised, subsequent adaptation plans and activities initiated by parties pay little or no attention to climate change-induced movement. It appears unlikely that migration and displacement will be addressed meaningfully in the UNFCCC context without a significant shift in priorities and a resurgence of interest in the issue (UNHCR, 2011).

Climate change-induced migration was identified as an important issue that requires attention by UNFCCC and other relevant parties, who agreed to take measures to enhance understanding, coordination, and cooperation concerning climate change-induced displacement, migration, and planned relocation, where appropriate, at national, regional, and international levels (UNHCR, 2004; McLeman and Smit, 2006). There have been several proposed solutions to the problems of climate-induced migrants/displacement over the last decade. The majority of these proposals include some form of international agreement or framework. A new global convention on environmental or climate change displacement has been proposed. Other ideas include adding a Protocol to the Refugee Convention or the UNFCCC, creating a new legal instrument under the auspices of the UNFCCC, or expanding current agreements to include a right to a healthy and safe environment (UNHCR, 2004). Despite these proposals, the international community has yet to act to fill the gaps in climate

change migration protection.

The following factors are impediments to a global protection framework: (a) a lack of political will; (b) the current security discourse surrounding climate change-induced migration; (c) institutional capacity issues; (d) the complicated causes of climate change and global actors' desire to avoid responsibility; and (e) civil society's inability to organise effectively around climate change-induced displacement (Nishimura, 2015). Creating a practical protection framework for climate change migrants will also require the inclusion of migration into broader climate change adaptation strategies and discussions (Nishimura, 2015).

Keck and Sikkink (1998) argue that it is crucial to consider institutional constraints and capacity issues that hinder the implementation of any suggested international protection framework. Civil society is frequently an effective catalyst for developing and implementing human rights and environmental norms. Civil society's limitations: Despite previous successes in environmental and human rights issues, climate change-induced migration is a problem that transnational advocacy networks are currently unprepared to address. These advocacy networks are most effective when confronting an issue with a short, transparent causal chain or an easily identifiable responsible party, rather than a diffuse or structural problem (Keck and Sikkink, 1998).

It is critical to advance protection efforts by reframing the discourse and incorporating migration into climate change adaptation strategies. To ensure the protection of climate change migrants, it is necessary for advocates to initially tackle the obstacles that prevent the establishment of a new framework, as stated by Nishimura (2011). With this goal in mind, actions can and should be taken to advance climate change migration protection efforts. These actions should consider global climate change's unique challenge, complex causes and diverse effects. Climate change migrants' needs will differ depending on their adaptive capacity and

context, so protection efforts must consider this. As a result, migration responses should combine regional and national perspectives. Knowing that displacement is imminent provides an opportunity to plan, respond, and devise far-reaching adaptive measures, which is mitigation (Black et al., 2011; Nishimura, 2015). Therefore, this study emphasised the significance of providing practical guidance and assistance in shaping migration policies based on evidence. This includes the development of comprehensive migration policies that address specific aspects of migration or migration-relevant issues (for example, regular pathways or climate change), is a vital part of the mandate of the International Organisation for Migration (IOM) and instrumental to the Organisation's mission of promoting humane and orderly migration for the benefit of migrants and societies (IOM, 2024).

1.3 The management of climate-induced migration and issues arising.

1.3.1 Policy and governance responses to climate-induced migration.

This section discusses the existing gaps in policies, mechanisms and the challenges that communities face concerning the development of strategies to address climate-induced migration because of a lack of a coherent governance structure (Nansen Initiative, 2015). Low levels of development or uneven policy and governance structure development can lead to maladaptation and exacerbate existing vulnerabilities (Nansen Initiative, 2015).

Communities are likely to migrate away from vulnerable areas, as the effects of climate change are likely to cause significant loss and damage, threatening their territorial existence (Thomas and Benjamin, 2018). While climate change is recognised as an existential threat, few policies or mechanisms are in place to guide climate-induced migration and displacement, and climate-induced migration and displacement have not yet been elevated to a major policy concern. Migration and displacement have the potential to be included in policies that integrate disaster risk reduction, climate change adaptation, and national sustainable development plans.

As a result, any policies or mechanisms developed must not further marginalise already vulnerable groups. Although climate change is an existential threat to livelihoods, many countries have yet to elevate climate-induced migration and displacement to a significant policy concern. According to a study conducted between November 2015 and June 2016 by the United Nations Framework Convention on Climate Change (UNFCCC) negotiators for member states of the AOSIS-Alliance of Small Island States, it was discovered that few countries have formally implemented migration or displacement programmes because of the lack of policies that would provide guidance (Thomas and Benjamin, 2018).

In Petz's (2013) perspective, countries that have experienced migration and displacement by climate change-induced migration and displacement do not have adequate official plans or policies in place. And these are mostly low-income countries. Kolmannskog and Trebbi (2010) posit that the lack of national policies on climate-induced migration contributes to an ad hoc approach to climate-induced migration, and may cause maladaptation.

Inadequate relocation and post-disaster policies can worsen vulnerabilities, heighten community risks, and lead to maladaptation. Albert et al., (2016) explain, in the Solomon Islands, a lack of systematic planning for the relocation of families from Nuantambu village resulted in the fragmentation of the small insular community, placing some families in vulnerable locations, even though examples of maladaptation are rarely acknowledged because of governments' reluctance to highlight failed policy implementation. It shows that maladaptation may occur without formal policies, criteria, or guidance (Thomas and Benjamin, 2018). As a result, the lack of adequate national policies may affect the identification of localised scaled geospatial data in countries affected by climate-induced migration, making it challenging to identify the most vulnerable people and locations and failing to inform migration and displacement policies.

The lack of systematic and ongoing data collection on displaced people to understand

their experiences will result in providing unsatisfactory services to those displaced and about to be displaced due to climate change (UNHR, 2011). The current unplanned governance approach to climate-induced migration and displacement is insufficient in an era where the severity of climate change is felt globally (Ferris et al., 2011). As the seriousness of climate change increases, so will the number of migration cases that can be argued to be an adaptation (Wetzel et al., 2012; Adger and Adams, 2013).

It will be advantageous for countries to develop more coherent climate-induced migration policies and establish suitable governance structures that address migration issues at the regional and national levels. Migration should ideally be dealt with within the ambit of integrated disaster risk reduction and climate change adaptation policies that are linked to national development to facilitate policy coherence and address the problem of climate induce-migration both as an adaptation strategy for climate change and as a mechanism to reduce risk (McAdam, 2014; Roberts and Pelling, 2016). It would be beneficial for countries to consider displacement and climate-induced migration when formulating or updating climate change policies. It is crucial to include the impact of climate change on human migration in national plans and policies, as well as gather and share data on migration and displacement. This will help us better understand vulnerabilities and develop effective long-term solutions (Swing, 2015). Also, we must recognise that good climate change-induced migration policy governance is linked to countries' development and the well-being of the people. It focuses on the climate negotiation and decision-making processes that impact our well-being and set the course for climate action.

1.3.2 Challenges that have emerged with climate-induced migration, focusing on resource contestation and conflict.

Climate change-induced migration is a phenomenon that is difficult to quantify. Harrabin (2011) argues that the extent of migration caused by climate change is still a topic

of debate. This is because people's decision to move is often influenced by multiple factors rather than just one (Blaikie, Cannon and Wisner, 2004). This is obvious because environmental migration frequently manifests itself where there is a slow onset of environmental change or degradation process (such as desertification), affecting people who depend directly on the environment for their livelihood, causing livelihood stress (Piquet, 2021). There are no statistics on ongoing climate change-induced migration on which to base a forecast; however, the International Organisation for Migration (IOM) believes that gradual and abrupt environmental changes are already causing significant population movements. It is predicted by the World Bank (2021) that climate change will become a prominent cause of migration by 2050, forcing close to 216 million people across six world regions to move within their countries, making climate change the greatest threat to populations in the coming decades (Yeung, 2020; Bellizzi et al., 2023). According to the World Bank report (Groundswell-Preparing for Internal Climate Migration), "without urgent national and global climate action, these regions alone, South Asia, Sub-Saharan Africa, and Latin America could see over 140 million people migrate within their borders by 2050" (Bellizzi et al., 2023: p.1). It is nearly impossible to distinguish people moving because of environmental degradation in the Sahel or rising sea levels in Bangladesh from those moving for other reasons. Internal displacements, in particular, are not recorded, and there is considerable uncertainty about the scope of future climate-induced migration/displacements (Kniveton et al., 2009).

National climate change responses are insufficient to mitigate the effects of climate-induced migration. The ability to adapt is primarily a national concern. States are required by international human rights law to secure the fundamental rights of their populations, but this is not always the case in the developing world. International organisations have also encouraged national adaptation programmes. According to the Asian Development Bank (2005), despite the UN Convention to combat desertification efforts and promote global

cooperation and partnership, only a minimal amount of financial aid has been allocated so far to address the negative impacts of climate change.

Massive international development aid could be the key solution to the consequences of climate-induced migration. This would be extremely expensive, and it is reported that such generosity from Western governments may be highly improbable; overall, this would not be sufficient, as an adaptation to climate change adverse effects need the technical know-how of the developing nations to come to fruition. For the first time, the Cancun Adaptation Framework task states to provide measures to enhance understanding, coordination, and cooperation regarding climate change-induced migration when it occurs and planned resettlement, where appropriate, at national, regional, and international levels, but this is not always the case in the developing world, leading to resource contestation that escalated into conflict in the receiving area (Di Pietro, 2020).

Because of climate change, people are forced to migrate to meet their basic needs. In doing this, resource contestation leading to conflicts is an issue in the areas migrated to. However, a problem that frequently goes unmentioned is how climate-induced migration exposes people to being trafficked and trapped in a life of servitude. Climate change is a risk multiplier, increasing the likelihood of people who are already vulnerable becoming victims of modern oppression (Bharadwaj, 2020). Mackie (2021).

An example is in northern Ghana, where communities face a significant drought. Crop production is severely affected, leading to food scarcity. In this circumstance, young men are compelled to migrate to the southern regions for employment opportunities as agricultural labourers or miners. Individuals are obligated to become bonded labourers because of being coerced into working to settle an unending debt. At the same time, large-scale human migration due to resource scarcity, increased frequency of extreme weather events, and other factors contribute to climate change by increasing intra- and inter-state competition for food,

water, and other resources in receiving regions (Podesta, 2019). The scope and scale of climate-induced human migration will test the limits of national and global governance, as well as international cooperation, posing a challenge that requires immediate action in terms of policies and a good governance structure to guide the successful implementation of programmes that will stand the test of time.

Resources-water and land contested for due to climate-induced migration will cause problems in receiving regions. These challenges will continue to manifest as people migrate from climate-affected areas to areas with abundant natural resources. Access to these finite resources, if there are no adequate replenishment programmes in place, will cause resource scarcity, triggering yet another migration to other areas (Boano, Zetter and Morris, 2008). Without managing these hardcore challenges sustainably, they will continue to create challenges that, if not addressed, will cause climate change-induced migration in many countries worldwide, resulting in resource contestation and conflict. The challenges of climate-induced migration are real, and more scrutiny and action are required.

1.4 Nigeria: Historical background

Nigeria has a land area of 910770 per square kilometres, according to the World Bank (2022), in which the northern Nigeria covers 730376.647 square kilometres. It has 36 states and a federal capital territory, Abuja (Cleaver and Shreiber, 1994; The World Bank, 2022). (see Figure 1.5). Aregheore (2009) stated that Nigeria's land usage distribution spread is: total irrigated land of approximately 9570 km2, approximately 35% arable land, 15% pasture, 10% forest reserve, 10% settlements and 30% uncultivable land. It also has a sizable amount of arable land (approximately 33%), 3 per cent for permanent crops, 44 per cent for permanent pastures, 12 per cent for forests and woodland, and 8 per cent for other uses. It shares borders with four countries: Benin Republic to the west, Niger Republic to the north, Cameroon to the east, Chad Republic through Lake Chad in the northeast, and the Atlantic Ocean to the south.

With a population of over 218,541,212 million people, Nigeria is Africa's most populous country, the seventh-largest population in the world, and the world's most prominent black population concentration ((Nigerian Watch, 2014; Statista, 2022; The World Bank, 2022). Nigeria is Africa largest economy, a powerhouse in Africa, with a GDP of 506 billion dollars in 2022 (International Monetary Fund, 2022). Its economy is one of the fastest-growing in the world (UN, 2022).

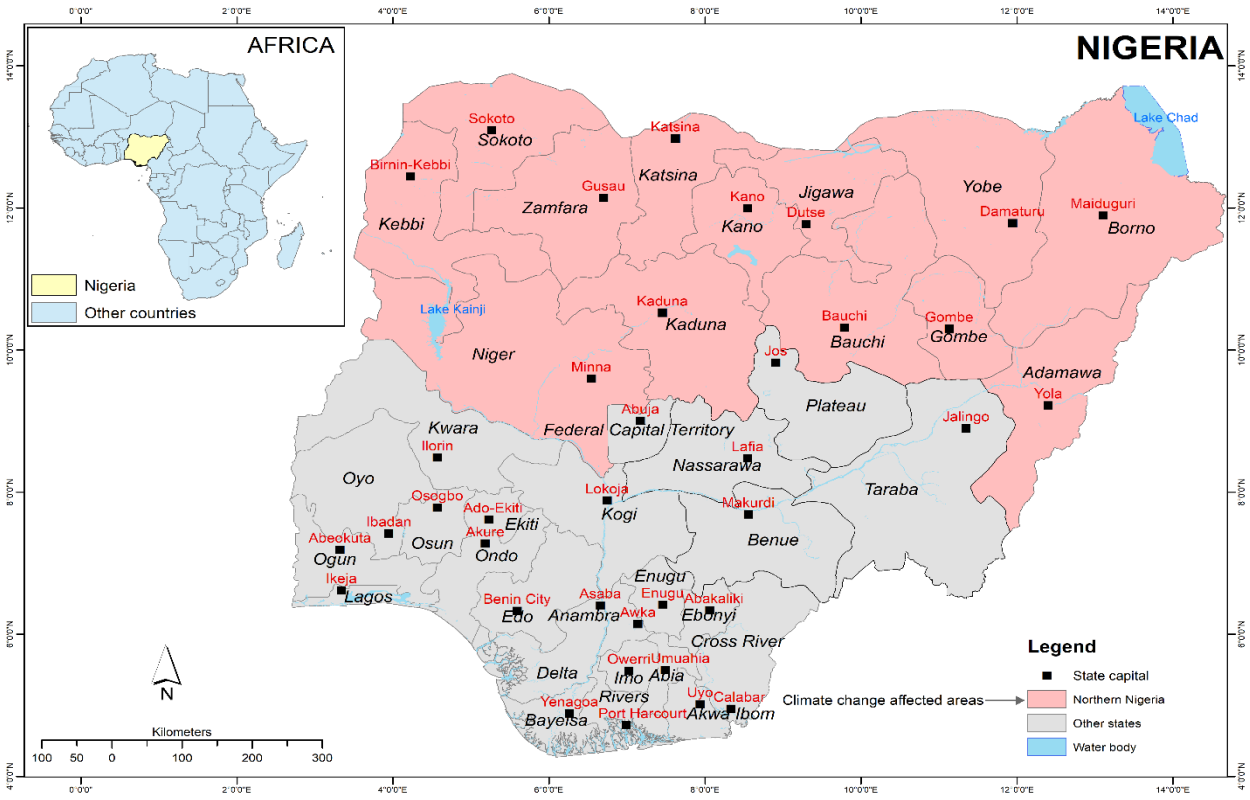

Figure 1.5: Map of Nigeria. Source: (Author, 2021).

Nigeria was explicitly selected for this study because of research gaps on climate change induce-migration coping strategies leading to resource contestation and conflict, making Nigeria one of the countries that have been relatively less explored in terms of understanding the detrimental consequences of climate change. The impact of climate change on Nigeria's environmental and socioeconomic systems driving migration from the northern to the southern part of Nigeria, compounding the country's fragility risks, which is at an alarming rate (Olagunju et al., 2021). Extreme weather patterns, drought and desertification

have rendered large swaths of the northern Nigeria unproductive. These are the challenges confronting local communities-the sending region resulting in a loss of crops and the displacement of communities. As a result, growing desperation over natural resources drives resource conflicts in Nigeria because of the massive influx of people from the north to the southern part (Nwakpa, 2022).

Climate change significantly alters migration and displacement patterns, resulting in internal and international movements, with vulnerable individuals mostly affected. Huang (2023) states that efforts to take action on climate change, specifically focusing on managing and addressing the movement of people caused by environmental factors, are still in the early stages, with numerous projects still in the experimental phase. In 2017, the first major climate migration program was initiated, but there are still limited flagship projects, either on a global or regional level. Due to the intricate relationship between migration and environmental change, these projects are new and limited in scope. This complexity calls for solutions tailored to specific contexts and various other intersecting factors that drive migration. It has been challenging to tackle these connections, and few projects are aimed at addressing this issue. In reality, various activities in the broader climate realm could indirectly help manage climate mobility, even if they are not labelled as such. Many climate-focused projects, for example, designed to manage disaster risks or train people on resilient livelihoods (such as sustainable agricultural techniques), can also reduce the likelihood that people will be forced to leave their homes as climates worsen. These projects generally do not explicitly reference displacement (McLeman, 2020; Huan, 2023).

Projects to make climate migration safe, voluntary, and orderly are still in the early stages, Huan (2023), and organisations' approaches are likely to evolve as more programming in this area is funded. Nonetheless, many will not be directly linked to climate mobility, making managing climate-induced migration in Sub-Saharan Africa a herculean task without

investment and technological know-how from higher income nations. Countries can also direct their governing institutions to concentrate on gathering data on climate mobility so policymakers can make better decisions (Blake, Clark-Ginsberg and Balagna, 2021).

Nigeria is projected to have the third largest increase in urban population, projected to add 189 million urban dwellers between 2018 and 2050, closely doubling the size of its present urban population (UNDESA, 2019). This portends danger for the country regarding infrastructure and security, which are currently not adequately provided for, with Nigeria's infrastructure deficit estimated at $100 billion yearly (Umunna, 2022). Odjugo (2006) states that the severe climatic conditions have prompted many individuals in rural areas of Nigeria to move to urban areas in search of gainful employment. Rural-urban migration trends, challenges, and impacts have generated great debates for the last three decades. Those moving from rural to urban areas are made up of certain classes, categories and strata of society plagued with certain social and economic problems, in which poverty ranks highest and most fundamental (Abass, 2012).

The emergence of internal climate migration hotspots in Nigeria requires holistic and far-sighted approaches to ensure sustainable and durable outcomes (NEST, 1991; Gouvea, 2016). Climatic conditions worldwide are ever-changing. As Odjugo (2006), Akpodiogaga-a, and Odjugo (2010) explain, constant warming has affected various Nigerian regions, mainly the north. This condition has resulted in the northern part experiencing climatic changes associated with increased heat and dryness of land and reduced rainfall. Since 1901, Nigeria's temperature trend has been rapidly rising. The World Bank Group (2021) put it at 27.25 Celsius between 1995 to 2014, projected to reach 28.25 Celsius by 2060 to 79 (see Figure 1.6). The rise was slow until the late 1960s when temperatures suddenly rose from the early 1970s through 2005 to the present, increasing mortality and reducing economic growth for the state. As a result, the most vulnerable population in the rural areas are severely affected by

food scarcity because of low crop yield. Rural communities in Nigeria heavily depend on agricultural produce and natural resources to sustain their livelihoods.

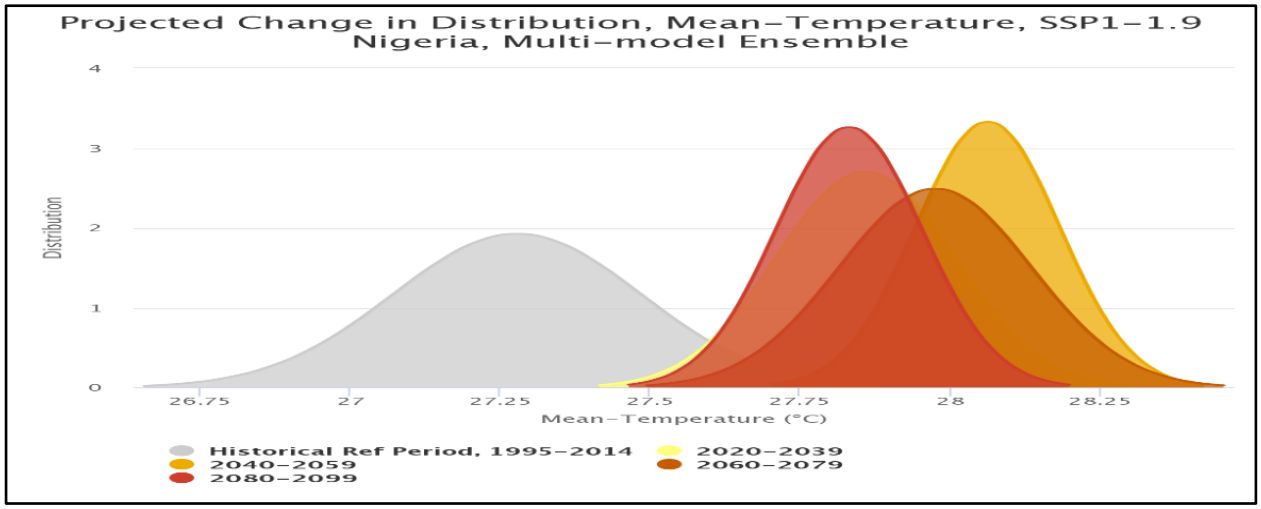

Figure 1.6: Nigeria Projected mean temperature 1995-2079. (Source: World Bank Group, 2021).

As identified by the World Bank (2021), this record shows a significant increase in the average temperature compared to the global average temperature rise, measured at 0.74 degrees Celsius in 1860. If this trend continues, by 2100, Nigeria might experience a temperature increase close to 4.5 degrees Celsius (Odjugo, 2006; Akpodiogaga-a and Odjugo, 2010. Based on another study conducted by Animashaun et al., (2020), from 1911 to 2016, Nigeria's rainfall pattern has been erratic with seasonal variability due to climate change, showing a downward trend as of 2016 (see Figure 1.7). However, while the northern areas are the most affected and experiencing a decline in rainfall, some coastal regions of Nigeria in the south are experiencing an increase in rainfall events[2] (IPCC 1996; NEST, 2003; Odjugo, 2006; Akpodiogaga-a and Odjugo 2010; Ogungbenro and Morakinyo, 2014). This research presents clear evidence of the adverse climatic situation that northern Nigeria is facing. Obioha (2008) stated that the northeastern parts of Nigeria are significantly changing to an arid environment.

[2] Confirmed by the rainfall data collected from 28 weather stations for the period of 1970 – 2002 from the Nigeria Meteorological Station, Lagos, and rainfall variation is projected to continue to increase. Precipitation in southern areas is expected to rise and rising sea levels are expected to exacerbate flooding and submersion of coastal lands. (Odjugo, 2006; Akpodiogaga-a and Odjugo, 2010).

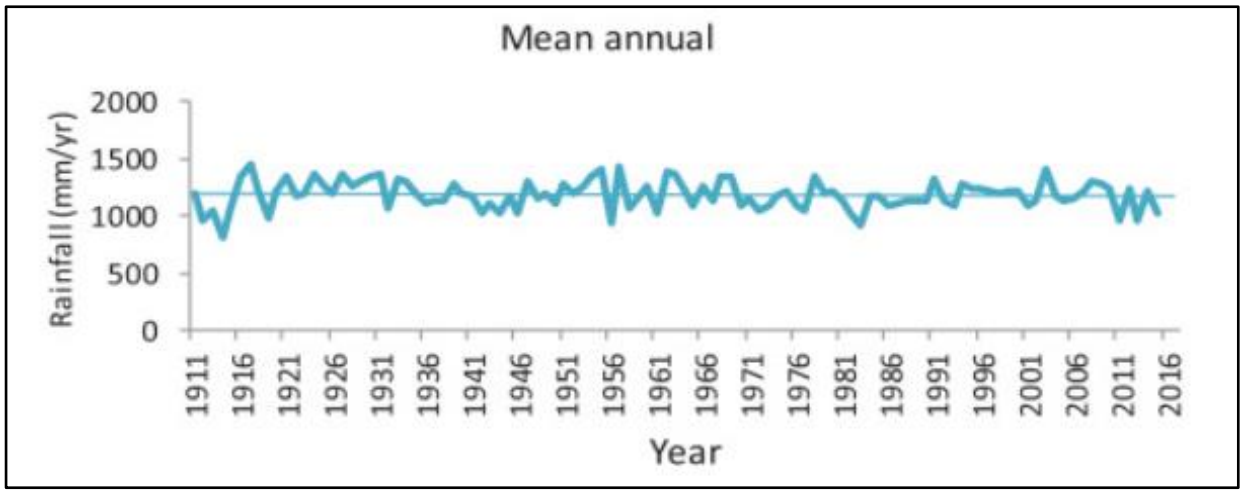

Figure 1.7: Annual rainfall variability for Nigeria from 1911 to 2016. (Source: Animashaun et al., 2020).

Land cover changes are a crucial index for estimating climate change in any country (Fielmua, Gordon and Mwingyine, 2017). Based on the study results, the rate at which the land cover in the region is changing is estimated to be 0.6 kilometres within a year, as evidenced by the increasing depletion of fauna and flora resources on land and the reduction in the amount of surface water (Fielmua, Gordon and Mwingyine, 2017). An unreliable rainfall pattern has led to a decrease in the natural regeneration rate of land resources, therefore presenting a chain of causal reactions, leading to the communities living in these arid areas exploiting other previously undisturbed lands (Fielmua, Gordon and Mwingyine, 2017).

Fasona and Omojola (2005) contributed to this knowledge by bringing to the fore that the continued exploitation of undisturbed land, as it is currently happening in northern Nigeria, has led to the depletion of forest cover and the expansion of dunes/aeolian deposits. The researcher indicates that a significant increase of 425 per cent in the stretch of aeolian deposits/dunes from 1976 to 1995 shows land resource loss due to climatic change and desertification the northern parts of Nigeria are experiencing. Homer-Dixon (1994) states that the declining availability of resources, such as clean water and good arable land for animal husbandry, creates a condition of scarcity and deprivation, precisely what is happening in the

northern regions of Nigeria. This situation has ushered in a new scope of migration from the north, mainly affected by the adverse effects of climate change, to the middle and southern parts of Nigeria. These are drought and desertification, which in the northern Nigeria are an upshot of two main factors:

(1) Poor physical conditions concerning soils, vegetation, topography and extreme intrinsic variability of climate as established by frequent droughts; and

(2) Disruption in the ecological system caused by poor land use and rising demand for land due to the affected region's growing population and socioeconomic schemes (Ladipo, 1993). In essence, drought and desertification are a consequence of multifaceted interrelationships between social and natural systems. Figure 1.8 below illustrates the relationship. Compounding these two main factors are the failures of individuals and the government of the day to develop suitable mitigation measures.

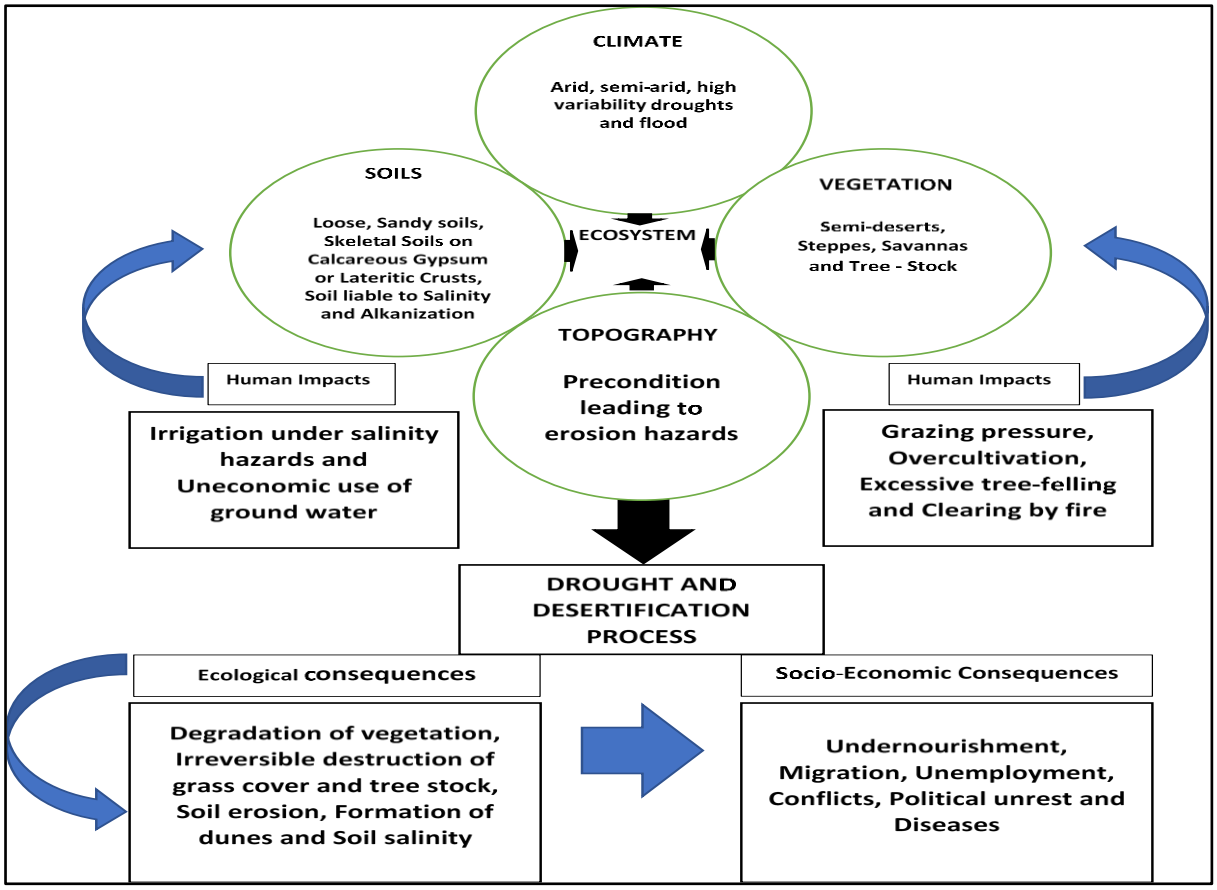

Figure 1.8: Model of drought and desertification process remodelled. (Adapted from Ibrahim, 1983).

The causal factors are equally interdependent; they strengthen one another and, at the same time, have a feedback outcome that hastens the entire development (Campbell, 1986; Mortimore, 1989; Oladipo, 1993; Azong, 2020).

1.4.1 Nigeria internal migration overview

Bryceson (1999) asserts that various structural factors associated with colonialism, the slave trade, labour recruitment, and economic development were pivotal in shaping Nigeria's migration system. One cannot discuss current internal migration systems in Nigeria without mentioning previous internal migration systems in Nigeria. The migration history in Nigeria dates back to the slave trade era between 1400 and 1900 in Africa (Mberu and Pongou, 2010). During this time (colonial period), the labour migration system was highly regulated, as the government closely monitored movements to ensure that the location of an individual was known for tax collection purposes (Bryceson, 1999; Mberu and Pongou, 2010).

Furthermore, Mberu and Pongou explained that the arrival of the British in Nigeria provided a system of migration, as the British required a massive labour force for public administration, plantations, and mines. This situation led to rural-urban migration, pushing people to work as migrant traders, farm labourers or tenant farmers. Nigerians had to migrate to seek employment to meet up for the “hut tax” - imposed on their place of abode by their colonial masters. In addition, concerns by the British about the moral effects of large-scale rural-urban migration showed that colonists desired to keep migrant labourers in their villages until their services were needed (Bryceson, 1999; Mberu and Pongou, 2010).

Moore (1984) states that after gaining independence and experiencing a period of local politics, Lagos became the capital city. However, a few years later, the seat of power was relocated to a newly established city called Abuja. As the country's capital, it encouraged high internal migration because of businesses and government agencies, attracting populations seeking employment. While the city created employment for the Nigerian population, men

were more likely to get jobs in the town, leading to more men migrating to the urban centres than women (Moore, 1984).

The country's social structure also places men as primary breadwinners with the duty of caring for the household. The current migration patterns are somewhat related to what was witnessed after independence. During the colonial days, the central city believed to attract significant attention by migrants was Lagos the capital. However, the case is different these days; with climate change decimating most parts of the northern Nigeria, the southern part has witnessed massive migration from the north (Moore, 1984; Britannica, 2020). The presence of a major seaport in Lagos serves as a strong motivation for people from various regions to settle in the city. Notably, a considerable proportion of individuals in Nigeria migrate from rural to urban areas in pursuit of employment prospects. Consequently, this creates a void in meaningful advancements within rural regions, as the government tends to overlook and disregard these areas, resulting in inadequate infrastructural development.

Research has shown that the primary areas most individuals still choose to move to are the big cities (Bakewell, 2013, p.54). The main reasons the majority of individuals migrated to the big cities were the ability to sustain their livelihoods and the availability of better job opportunities compared to the rural areas. To others, the internal migration from rural to urban areas was in search of better living standards, easily accessible in major cities across Nigeria. Climate change is not helping matters, and it is a biting issue that has led to the migration of individuals from the rural to urban areas compared to what was witnessed shortly after independence.

Climate change has led to more men migrating to different parts of the nation while the women have to remain to care for the family. This led the men to return to their rural homes in the village regularly to visit their children and wives and renew their social bonds with the community. As Bryceson (1999) explained, climate change adverse effects later led to the

practice of back-and-forth migration between urban and rural areas, which most researchers outlined, and are still prevalent even after independence (Potts, 2009; Englund, 2002).

Many researchers have identified recurring desertification and droughts in northern Nigerian communities as the primary cause of migration to fertile parts of the country (de St Croix, 1945; Dahl, 1976; Frantz, 1978; Salzman, 1980a; Shanmugaratman et al., 1992; Bonfiglioli, 1993; Bello and Kazibwe, 2022). Also, the periodicity of desertification and drought has a massive impact on their animals, which are likely to die from exhaustion, hunger, and thirst because of desertification and droughts (Stenning, 1959; Vengroff, 1980; Niamir, 1990; Majekodunmi et al., 2014). The Sahelian drought took the lives of a quarter-million people and millions of animals in 1968 (Gore, 1979). The recent periodic drought has been the root cause of the pastoralists' group and individual migration. Nigeria's north eastern and north western states rest within the semiarid and arid regions affected by a long dry season (Ofunku and Sife, 2009; Olayoku, 2014).

A study conducted by Barrios et al. (2006) in Nigeria discovered that a reduction of 1% in national rainfall in rural regions corresponded to a 0.45% rise in migration towards urban areas. Also, a study by Henderson et al., (2013) reveals the same. As noted by the U.N., migration from rural to urban areas continues to grow (UNDESA, 2019). Rural-urban migration is the most predominant type among the migration flows in Nigeria (Fox, Bloch and Monroy, 2017). IOM (2015). The adverse effects of climate change, drought, and desertification lead to low agricultural yield in Nigeria, thereby influencing rural out-migration into urban areas. Furthermore, in Nigeria, as stated by Rigaud et al., (2021), there is a projected surge in internal migration caused by climate change, which is expected to escalate significantly, portending danger for the country with the increase in population (see Figure 1.9). Early and concerted action to cut global greenhouse gas emissions, and to ensure inclusive and resilient development of programmes that can reduce the scale of internal

climate migration by as much as 80% is necessary (The World Bank, 2021).

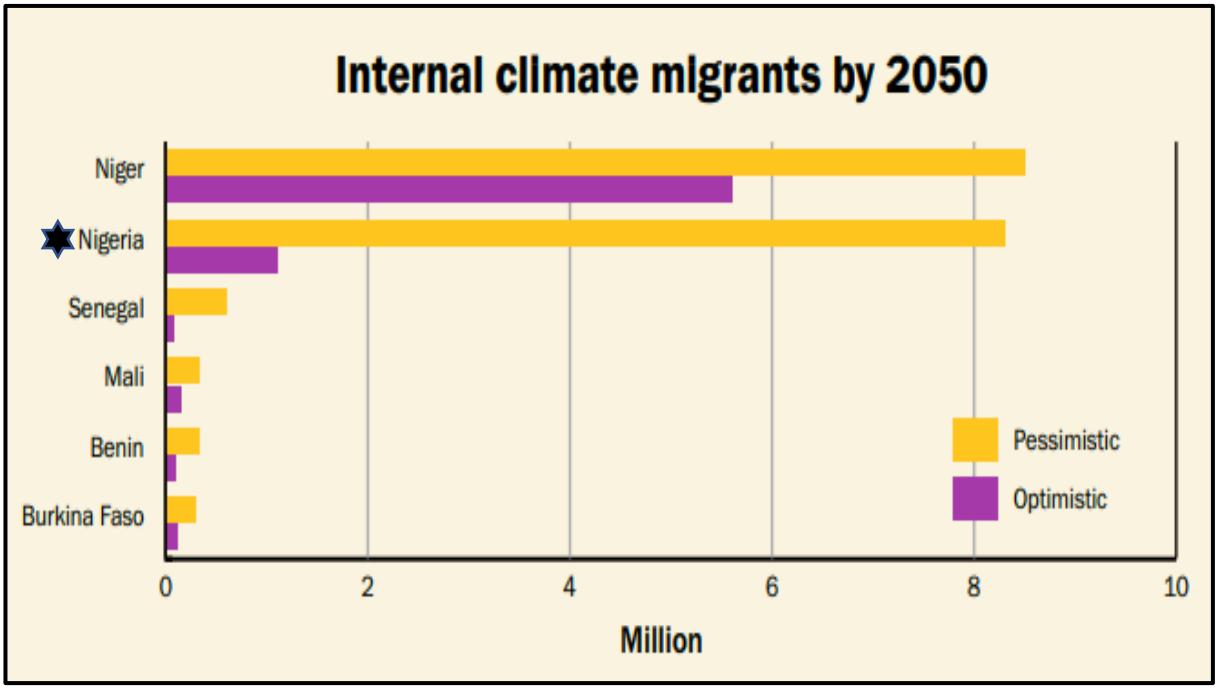

Figure 1.9: The projected statistics of internal climate migrants in Nigeria by 2050. (Rigaud et al., 2021).

Even though most of the population still lives in the rural areas in Nigeria, nonetheless, over the last 20 years, urban centres have been developing at an average rate of 3.5 per cent per year, one of the highest levels of urban growth in the developing world (Wylie, 2018). A study by Henderson et al., (2017) posits that anthropogenic climatic changes can also be a significant factor in drawing people towards the urban centres, particularly in areas experiencing adverse climatic conditions. The study focused on urban migration patterns in sub-Saharan Africa between 1950 and 2009, and compared these patterns with temperature and rainfall records. It concluded that countries such as Nigeria in sub-Saharan Africa had received minimal and highly unpredictable rainfall patterns, and research linked changes in climate as the trigger of the mass movement to the urban centre (Henderson et al., 2017). The study's findings statistically show that experienced drier conditions are linked to an increase in the urban population, meaning that climatic changes in Nigeria significantly contribute to

its expanding urban demographic. This shows that less or no rainfall could be the leading factor driving individuals, pastoralists, and farmers away from the areas affected by drought and desertification to other parts of the world (Henderson et al., 2017).

Research has shown that migratory adaptation extends vulnerability to climate change (Raleigh et al., 2008). This is because internal and international migration further strains available resources because of the increased population, thus leading to scarcity. This is evident in Nigeria. A scramble for a share of the limited resources by the inhabitants often brings about conflict, as every individual needs a share. Additionally, insecurity is likely to rise because of the unchecked movement of people from one location to the next in pursuit of limited resources.

1.4.2 Urban population growth at the detriment of rural development

Rapid population growth from rural to urban is an aspect of migration that leads to overcrowding and unemployment, putting a strain on resources in the receiving areas in Nigeria, contributing to the breakout of unrest (IPCC, 2014). Compared to more developed economies, developing countries like Nigeria have a higher rate of rural-to-urban migration (Awumbila, 2017). This is because Nigeria has a higher proportion of its population living in rural areas, where they participate in traditional rural activities, such as agriculture. Awosusi and Jegede (2013) state that urban cities in Nigeria have experienced significant changes because of population and economic growth, whereas rural areas have not undergone similar transformations. One of the leading causes of rural-to-urban migration in Nigeria is the gaps in rural and urban development, which are best described through push and pull factors, which in this case are social and economic. Increased access to quality education and healthcare facilities is a common pull factor in rural-to-urban migration. Compared to urban areas, rural areas in Nigeria frequently lack government services. Government spending is commonly directed at providing public services in the big cities. Big cities also offer many recreation and

entertainment options unavailable in Nigeria's rural areas. The excitement of city life, from shopping malls to museums, attracts many rural migrants, while in terms of economic factors, employment and educational opportunities are cited as the most common pull factors associated with rural-to-urban migration in Nigeria before the sudden appearance of environmental change. Also, in Nigeria, poverty, food insecurity, and a lack of opportunities in rural areas result from uneven economic development, driving people to cities where development has been more rapid (Okhankhuele and Opafunso, 2015).

Rural population loss in Nigeria disrupts the rural labour market and has the potential to widen the rural-urban development divide. This can reduce agricultural productivity in areas where commercial agriculture is not prevalent, as well as have an impact on city dwellers who rely on rural food production (Laio and Yip, 2018). Land sold as migrants leave for city life in Nigeria is frequently purchased by large corporations for industrial agriculture or intensive natural resource harvesting. The environment deteriorates when the land is heavily exploited (Bilsborrow and DeLargy, 1990).

It is imperative to note that migration has always been the most crucial adaptation mechanism for escaping climate shock and stress. For many years, pastoralists in northern Nigeria adopted the habit of moving their animals from the dry northern areas to the southern regions (seasonal migration). It is their usual lifestyle mode and response to the slow onset of adverse effects of climate change drought and desertification (Anarfi and Jägare, 2008). This slow onset differs from sudden/rapid adverse effects of climate change, leading to people staying put in some areas where water, grass and fertile land can be found. If it has been sudden/rapid, there is a tendency for people affected to resort to temporary migration with the option of returning if there is an improvement concerning the ecological stand/replenishment of natural resources in the sending region. A climate event that occurs in the background of a slow climate process may be the straw that breaks the camel's back and pushes a population

into the exodus. This slow-onset impact of climate change is now making the hardest-hit regions unhabitable. In the case of the northern Nigeria, migration as a response to climate change is not something only pursued by the nomadic communities. For instance, in response to drought, some families send the oldest male family member to the city to get employed or find paid labour to support the family while awaiting the drought to end (Somorin, 2010). Many non-nomadic families living in northern Nigeria consider migration due to climate change adverse effects as an opportunity to escape hardship and seek meaningful job opportunities elsewhere to sustain their livelihoods (Uyigue and Agho, 2007).

The Boko Haram effect: The insurgency has also contributed to migration/displacement, leading to internal migration from rural to urban areas. The Boko Haram Islamist group is primarily a terrorist organisation that was ideologically created to oppose Western education, modern science, and Western culture. The conflict between Nigerian security forces and Boko Haram has exacerbated the current state of underdevelopment and regional inequalities, particularly between the North and South, in the area of education. Children, women, and youths are the most vulnerable demographic groups. Boko Haram's lethal operations are carried out through abduction, suicide bombings, sexual violence against women, and the recruitment of young men (Ager et al., 2015). Their activities in the north east of Nigeria have led to the displacement of over two million populaces, forced migration to the southern part of the country and a prolonged humanitarian crisis that advances security risks. By trying to establish a caliphate, Boko Haram has trapped and enslaved a more significant population in areas under the strict control of its radical Islamist organisations (Ojo, 2020).

Despite the difficulties in obtaining accurate data, key trends have been identified, including climate change hazards, rural-urban movement, the role of insurgency in Nigeria, and the existence of a trapped population (Ikwuyatum, 2016). In many cases, migrants have

been the primary target of Boko Haram and the Nigerian military. Frequently, the Nigerian army assumed migrants to be Islamist fundamentalists on the move during counterinsurgency actions (Afaha, 2013). These factors led to migrants constantly on the move to conducive areas. As a result, the northern Nigeria, including the Lake Chad region, saw a massive population movement downwards to the middle belt and southern part in 2004. This situation has led to the need for a humanitarian emergency that lacks a good governance structure (Afaha, 2013).

Because of the adverse effects of climatic conditions in the northern part of Nigeria, the middle belt and southern parts of Nigeria have experienced lingering cases of resource contestation and conflicts resulting from the incursion of migrants, including (the Fulani) herders, who are nomadic, and have continuously been involved in various clashes with farmers as they move their herds to farmlands in the greener middle and southern parts of Nigeria (BBC, 2016; Gever and Essien, 2017).

1.4.3 Effects of climate-induced migration in Nigeria

Most African countries, including Nigeria, especially its northern part, are vulnerable to climatic change. Understanding the impacts of climate change in Nigeria entails having information and understanding the country's local and regional establishment. This will make it possible to conduct a comprehensive investigation into the occurrence of climate-induced migration in Nigeria, considering the distinct factors that intensify or alleviate the impacts of climate change, as well as the extent of vulnerability to climate change (Sayne, 2011, p.2). Since the effects of climate change vary worldwide, it is essential to grasp the situation on different spatial scales. While multiple studies have examined the impacts of climate change in Nigeria, this study focuses on assessing and further exploring the development of research on the adverse effects of climate change in Nigeria. Additionally, it aims to determine if previous research aligns with the level of preparedness projected by the UN against future

trends. Many Nigerians, especially in the northern part of the country, lack education and access to basic infrastructures, such as electricity, safe drinking water, and improved sanitation (The World Bank, 2022). If the issue concerning climate change is unchecked, it may seriously affect people's livelihoods in the north and the entire country. The alteration of rainfall regimes and patterns will affect fisheries, crop production, forestry, livestock production, and post-harvest activities (Change, 2014). An increase in temperature and humidity above the normal range would lead to pest infestations, diseases and other disasters, destroying farmlands and livelihoods. By allowing the aforementioned to manifest, several communal clashes (habitually regarded as religious and ethnic) are resource skirmishes (Fasona and Omojola, 2005: p.2).

Evidence shows that Nigeria is already experiencing environmental challenges attributed to climate change and its impacts. This has highlighted the need for knowledge-based strategies to help plan adequate mitigation and adaptation measures for the country. In their study, Okon et al., (2021) examined the adverse consequences of climate change in Nigeria, covering multiple domains. The results showed a significant lack of motivation among researchers to engage in experimental and modelling research methods, leading to insufficient practical research essential for mitigating climate change's effects on society.

Drought, desertification, floods, irregular rainfall patterns, deforestation, desert encroachment, and housing problems are all examples of environmental change in Nigeria (Audu et al., 2013; Elias and Omojola, 2015; Onyekuru and Marchant, 2016; Olaniyi et al., 2019). As with other vulnerable countries, these factors have had a significant impact on land use and land cover, human health, and livelihoods in the country, with little or no indication of appropriate adaptation plans (Jibrillah et al., 2018; Pandey et al., 2018; Olaniyi et al., 2019; Omerkhil et al., 2020; Giri et al., 2021). Precipitation is expected to increase in the southern areas and rising sea levels are expected to exacerbate flooding and submergence of coastal

lands. Droughts and desertification have also become constant in Nigeria and are expected to continue in northern Nigeria as precipitation decreases and temperatures rise (Haider, 2019). Since the 1980s, the temperature has grown significantly. Climate projections for the next few decades show that there will be a significant increase in temperature across all ecological zones, which shows evidence of the adverse effects of climate change in Nigeria, affecting (agriculture, demographic and security), thus the urgent need for responses to it (i.e., climate change mitigation and adaptation, adaptive capacity and capacity development). Also, climate change will impact Nigeria's water supplies and wetland areas reserved for agricultural production. Reduced rainfall and increased evapotranspiration have substantially impacted the flow rate and network length of numerous large bodies of water. Notably, the northern area has been affected (Obioha, 2008). Crop and animal productivity have been directly and indirectly impacted by these factors, as noted by Fitton et al. (2019).

Because crop production accounts for approximately 94% of Nigeria's agricultural sector. The impact of climate change is significant in this category, with some regions of the country already experiencing a 20% decrease in the cycle of growing days (Ebele and Emodi, 2016). The World Health Organisation (WHO) estimated that climate change causes a minimum of 150,000 deaths annually, with projections showing that this number will more than double by 2030. The northern region of Nigeria is particularly susceptible to experiencing these adverse effects.

The northern Nigeria, the pivotal point of this study was divided into seventeen provinces in 1904 by the British during colonial time, of which six out of the seventeen provinces were split into a protectorate of East and West Bornu, Katagum, Kano and Sokoto and Gando, under the charge of three “First Class Residents” (Chiefs) selected for their unique ability and experiences (The Royal African Society, 1906). Hausas and the Fulani make up the largest ethnic group in the area (Kunkel and Ambenje, 2000).

Post colonialism, the northern Nigeria comprises of nineteen states in present-day Nigeria, bordering the Sahara Desert, the largest desert in the world, situated in Africa. It measures approximately 3,000 miles (4,800 km) from the east to west and between 800 and 1,200 miles from the north. The River Benue and Niger pass through northern Nigeria, converging in Kabba Province before flowing into the Atlantic Ocean. Also, the highest plateau in northern Nigeria is located to the southeast of the Benue River, which is composed of hills and mountains forming the Mambilla Plateau. The plateau extends into Cameroon, forming the Bamenda Highlands (The World Bank, 2014). The great savannah belt of the Great Plains of Hausa land comprises the remaining parts of the region. Akpodiogaga-a and Odjugo (2010) reported that the yearly rainfall in the region amounts to approximately 508 to 1524 mm.

Insufficient rainfall in northern Nigeria has resulted in a persistent problem of famine, as documented by Nwilo et al., 2020). Shown in Figure 1.10 are the nineteen northern Nigeria states. Because of adverse climatic changes, 350,000 square miles of arable land are lost in Nigeria every year, especially in the north, with the impacts leading to changes in the livelihood of communities (Tercula, 2015).

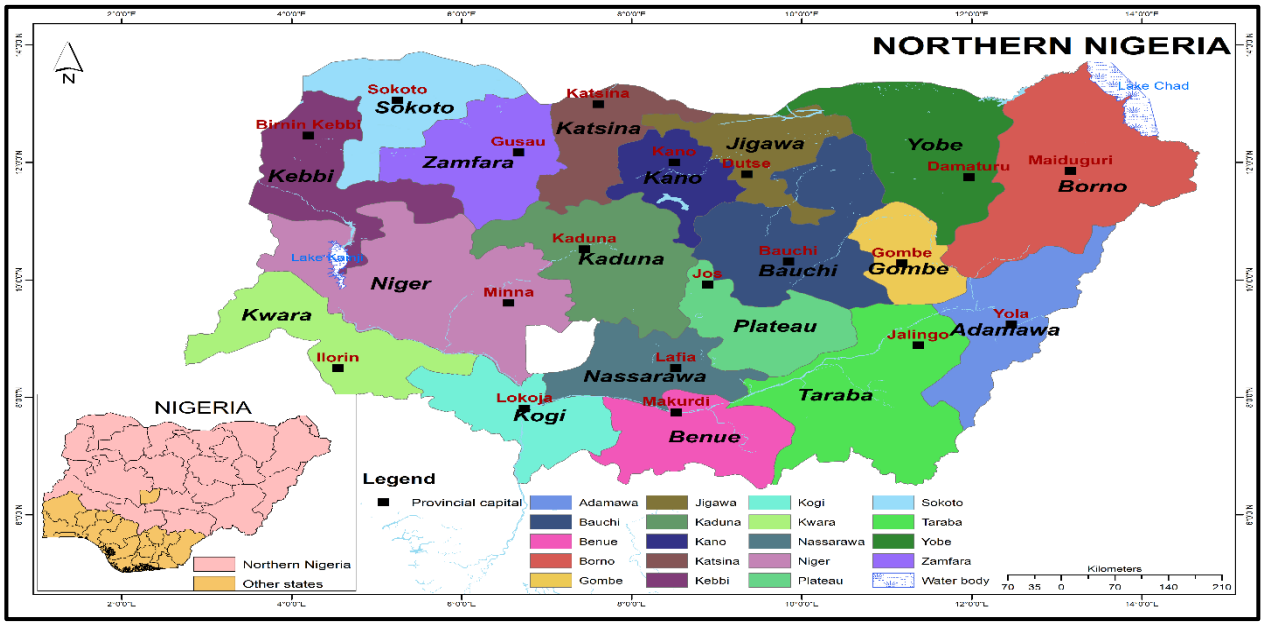

Figure 1.10: Map showing the nineteen northern (states) of Nigeria. (Source: Author, 2020).

As reported in the journal The Royal African Society (1906), in 1903, an upsetting famine prevailed throughout northern Nigeria, which was worst in the Yola and Bauchi areas. The impact of famine was profoundly felt during 1904 and 1911-1914 because of harsh climatic conditions (drought and desertification) (Kolawole, 1987). Since then, there have been reports of drought in 1919, 1924, 1935, 1951-1954, 1972-1973, 1984-1985, 2007 and 2011, respectively (Apeldoorn, 1978, 1981; Kolawole, 1987; Mortimore, 1989; FME, 2000).

Since 1980, climate change has caused a decrease in total rainfall and a rise in temperatures in Nigeria, with the northern region being particularly affected. Additionally, evaporation has further depleted water availability because of poor infrastructure and unequal distribution of resources in the country (Kolawole, 1987). Between 1900 and 2020, drought affected close to 3,000,000 people, mostly in northern Nigeria, with a loss in revenue amounting to $71,103,000. Droughts have already resulted in famine, population displacement, conflicts, and biodiversity loss (The World Bank, 2021).

The effects of less or no rain throughout the year in some northern states of Nigeria cause massive agricultural production decline, and because the region depends heavily on agriculture, so does income (Mohammed et al., 2013). As income is one of the main determinants of migration, no means of income leads to an increase in outward migration. Growing drought and desertification have forced thousands of people to move to the southern and middle belt areas, leading to clashes with native farmers and the deaths of hundreds of people caused by competition for watering points and grasslands (Mohammed et al., 2013; Okon et al., 2021). UNE (2018) reports that reduced precipitation in the already arid regions of northern Nigeria is escalating drought and desertification, driving migration.

The UN Security Council has recognised the enormous population threat as a threat to global peace and security, especially in regions with social and ethnic tension. John Ashton, the UK's climate change envoy from 2006 to June 2012, argues that we should expect massive

migration in arid and semiarid areas. Fragile states will be turned into failed states, and the pressure on the regional neighbours will increase. This dynamic is already apparent in Nigeria and other countries in West Africa (Ngozi et al., 2017). It is crucial to know that many people never want to leave their homes or communal land without cause (IDMC, 2016). Attachment to a place or home is vital. Attachment is the emotional bond between a person and a place. It is an essential concept in environmental psychology and is heavily influenced by the person and their experiences (Anton and Lawrence, 2014).

Regarding the adverse effects of climate change-induced migration, migration is used as an adaptive strategy to survive the harsh conditions experienced. Ultimately, the decision to move is complicated (Podesta, 2019). As recently recorded, climate change is a push factor driving migration to other parts of Nigeria. The working paper authored by Ajetomobi, Ajakaiye, and Gbadegeshin (2017) for the International Food Policy Research Institute reveals that Nigeria and other African nations heavily depend on natural resources and agriculture. Currently, agricultural activities in these countries are significantly impacted by climate change.

Research on the connection between migration and climatic change has been controversial. Tracing the complicated situations that influence an individual's decision to abandon their lives and engage in uncertain and dangerous journeys is complex, and the lack of systematic data on the issue complicates matters (Henry et al., (2004). However, motivations can be tied to differing and interplaying factors, which include political instability and lack of economic prospects (*Ibid*).

A shared opinion of this discussion is grounded in scientists' agreement that migration has many related causes, including environmental, but environmental change plays an imperative part in certain instances. In addition, many researchers have concluded that migration triggered by environmental change is a current occurrence and creates a mounting

problem (Döös, 1997; El-Hinnawi, 1985; Gallagher and Martin-Forbes, 1992; Jacobsen, 1988; Kavanagh and Lonergan, 1992; Myers, 1993; Ramlogan, 1996; Westing, 1994).

A study that examined the relationship between migration and drought was conducted by Findley (1994), it delves deeper into migration from rural Mali during the 1983 to 1985 drought. The researcher's findings showed that long-distance migration was most apparent during the dry seasons. Communities living in areas experiencing scarce rainfall are more likely to pursue short migration compared to communities within other regions (Findley, 1994). However, the population of migrants was not shown to rise after occasions of reduced rainfall within dryer areas. One of the significant points from the research results is that there seems to be a lesser link between climatic conditions and long-term migration (Henry et al., 2004). The relationship between migration and climate change has received attention from scholars (Baechler, 1998; Homer-Dixon, 2001; Gleditsch, 1998).

As Homer-Dixon (1994; 2001) explained, considerable populations in most countries, such as Nigeria, extensively depend on four fundamental environmental resources: freshwater, cropland for crop production, forests (graze lands) and fish. Any reduction or shrinking of these resources because of climatic change, especially in countries such as Nigeria, triggers migration to areas rich in such resources. When access to these resources is compromised, it reduces the economic productivity of the population, leading to migration (Homer-Dixon, 1994). Most migrating groups always trigger conflict in the new community as they try to lay claim to or have access to essential resources (Baechler, 1998; Homer-Dixon, 2001; Gleditsch, 1998). Therefore, climatic changes will affect economic productivity and agriculture (Odoh and Chigozie, 2012).

Regarding the classification of migrants affected by the adverse effect of climate change, Haug (2002) classified pastoralists in northern Sudan whose way of life was affected by the mid-80s drought as “environmental migrants,” since the majority of the pastoralists

would have starved to death if they had not opted to migrate. Haug, therefore, stresses that the consequences of drought are responsible for livelihood decisions such as migration, as it is happening in northern Nigeria. However, Meze-Hausken (2004) states that vulnerability to climate change adverse effects, such as drought, does not solely cause migration. Her study in northern Ethiopia, where she surveyed over 100 peasants, discovered that communities within peripheral regions had developed a significant variety of adaptation techniques that empowered their ability to cope with extreme climatic events. Perhaps this is applicable only if the affected community still has a means of livelihood to sustain its survival.

Werz and Conley (2012) suggest that climate change, migration and insecurity issues will probably worsen the existing risk factors in Africa. Climate change has already proven to be a challenge for humanity, and there is an urgent need for the global community to act on controlling carbon emissions (Morrissey, 2014). The effects of the warm climate are already felt and are estimated to intensify as climate change worsens. It is not only the northern part of Nigeria; the rest of the country will experience the exact effects of these transformational challenges (Morrissey, 2014). In the 21st century, a substantial number of climate migrants were displaced due to the slow and sudden change in climate (Leighton et al., 2011). As experts debate the relationship between human migration and climate change, migratory pressures worldwide will continue to rise as extreme weather conditions such as drought, desertification, floods and so on are expected to increase, especially in regions prone to conflict or mired in poverty all over the world (Leighton et al., 2011).

Sayne (2011) explains that the contestation of limited resources available causes frequent conflicts in the northern part of the country due to the adverse effects of climate change. Adequate infrastructure must be effectively provided in remote parts of the northern Nigeria, paving the way for smooth mitigation measures to counter the further escalation of existing problems. Also, educating the public is a practical approach to addressing these

problems, since it opens more avenues for a better understanding of the issues at hand. It eases the implementation of effective policies by the government. It is essential to understand that addressing the adverse effects of climate change falls into two important parts of action: mitigation and adaptation (Boko et al., 2007; IPCC, 2007; Mcsweeneye et al., 2010). Adaptation, as defined by the IPCC (2007), refers to the modification of natural or human systems in response to a new or evolving environment.

In response to actual or expected climatic changes or effects to limit damage or prospects, it denotes altering behaviour, systems, and, in some cases, ways of life to protect families, economies, and the environment in which people live, which is an adaptation. As noted by Saka (2008), adaptation to climate change is a development by which individuals lessen the adverse effects of climate change on their well-being and health by utilising the advantages of the environment's prospects, including migration. Thus, these types of adaptation are anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation (Boko et al., 2007; IPCC, 2007; Mcsweeneye et al., 2010).

Mitigating human-induced climate change effects requires programmes that can minimise the upsurge in greenhouse emissions (reduction) or the upsurge in global carbon storage (IPCC, 2022). Climate change has been linked to heightened temperatures, droughts, heatwaves, rising water levels, declining rainfall and displacement of communities, especially in the northern parts of the country (Boko et al., 2007; IPCC, 2007; Mcsweeneye et al., 2010). Drought and desertification have rendered agriculture unproductive, forcing families to move towards urban areas, mainly in the south, seeking employment, including pastoralists in search of wetter regions of the south for water and pasture (NEST, 1991).

Black et al., (2011) argue that climate change acts as a motivating factor that drives environmental migration. Extreme climatic conditions like droughts or floods can lead to

temporary or permanent migration and displacement. Furthermore, Black et al., explained that climate change and subsequent environmental degradation decrease the availability of water, livestock productivity, and crop production, negatively affecting the economic well-being of communities in the northern region. The environmental impacts of climatic change can either be gradual or acute, and the displacement of communities in response to climatic shocks is not new, as it is currently occurring in the northern parts of Nigeria. Leunissen (n.d.) and Agnew and Livingstone (2011) state that Aristotle and Hippocrates believed that a region's natural environment determines its habitability and influences its inhabitants' characteristics. Harris and Todaro (1970) argue that the migration of most communities or households living in areas with little or no productivity is grounded in the anticipated good lifestyle in the urban parts of the country. De Haas (2010) further adds that agricultural risk regarding income generation plays a crucial role in household migration decisions. Thus, resource scarcity is a critical reason for heightened migration from the northern parts of Nigeria to the urban and fertile regions of the southern parts of the country.

Human migration is not only a result of socioeconomic deprivation and poverty, but also serves as an adaptive response to the adversely changing climate (Scheffran et al., 2012). Due to the loss of climate-sensitive occupations and low adaptive capacity in northern Nigeria, out-migration is occurring. Nigeria dwindling resources, especially in the northern part, are not helping the situation in meeting the demands of its vast population. Therefore, Nigeria has a deficiency in formulating policies to aid the adaptive capacity of its citizens (Ahmed and Alam, 2012). The adaptive ability of a family depends on various factors, such as access to infrastructure, financial resources, human capital and social resources (Barnett and Webber, 2010). Also, when group-based mitigation activities and coping strategies are absent, migration is essential for individuals and households to adapt to climate change. According to the findings of Laczko and Aghazarm (2009), Nordas and Gleditsch (2007), and Tacoli

(2009), migration is an effective option to escape the adverse effects of climate change. If people in the affected areas find it challenging to sustain their livelihoods, the option is to vacate the affected area and seek greener pastures elsewhere.

Stojanov et al., (2016) findings stipulate that a household's migration decision is a coping strategy. Communities in the northern parts opt to migrate in search of better livelihoods, damning the risk that comes with it, which includes heightened conflict over resources in the areas migrated to. Under these conditions, migration to the wetter southern parts or urban centres is the preferable option for the populace affected in dealing with adverse climatic changes affecting livelihoods in the northern region of Nigeria.

1.4.4 The receding Lake Chad effect on water supply fuelling out-migration to other parts of the country

Extreme weather events and drought have impacted the northern Nigeria water supply, triggering migration (Tate et al., 2004). For instance, Lake Chad, which has been a source of livelihood for people in this region for years, is highly affected. The area has experienced massive out-migration by people searching for conducive parts to sustain livelihoods, which can be classified as an adaptation (*Ibid*). A significant report by the United Nations Institute for Peace, which was also substantiated by Shehu (2018), stated that the water declines and grass to feed animals because of drought and desert encroachment has thrust cattle rearers towards the middle belt and southern Nigeria (Ducrotoy et al., 2018). Also

UNEP (2018) posits that, with the Lake Chad surface dropping at an alarming rate for the last 60 years, it is understood that the surface area has fallen from 26,000 square kilometres in 1963 to less than 1,500 square kilometres in 2018. Figure 1.11 compares Lake Chad on the 6th of November 1984 by the U.S. Landsat 5 satellite and the 31st of October 2018 by the Copernicus Sentinel-2A satellite. The European Space Agency reports that the rapid decline of the lake's waters within 34 years is apparent, according to ESA (2019). It accounts for out-

migration from the lake area to other areas in Nigeria that are conducive for farming and livelihoods.

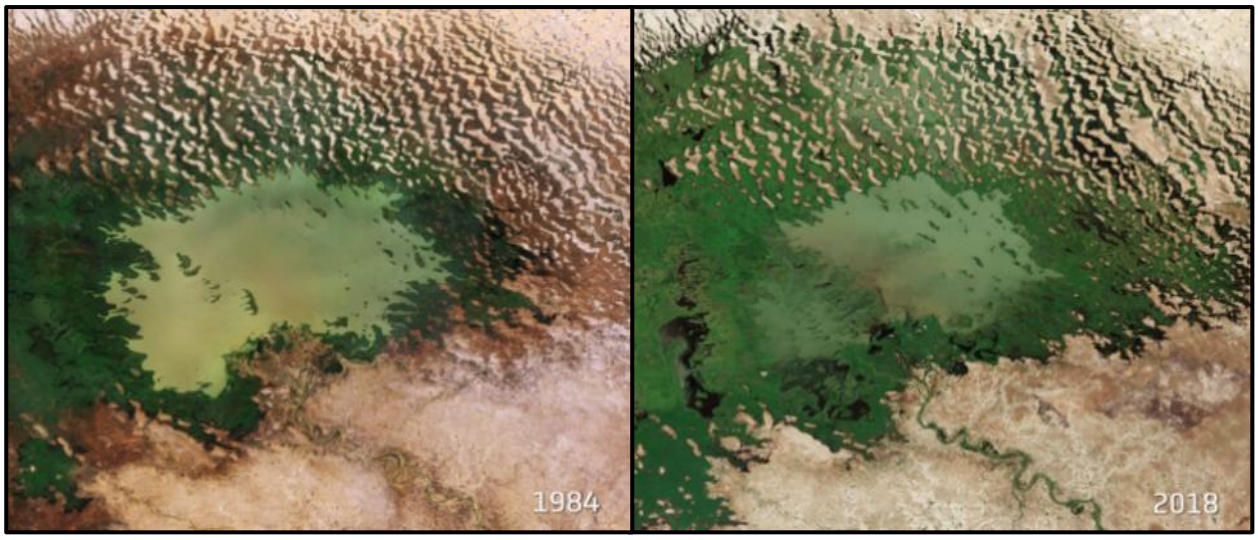

Figure 1.11: Summary of the presence of water in Lake Chad between 1984 and 2018. The difference is conspicuous (Source: ESA, 2019).

ESA posited that Lake Chad has shrunk by approximately 90% since the 1960s, owing to a decrease in precipitation caused by climate change, as well as the development of modern irrigation systems for agriculture and rising human demand for freshwater. 1972 and 1987 were the years in which the most severe reduction occurred, coincidentally with the extreme and protracted drought of the 1970s and the 1980s in the Sahelian region of Africa, and the second dramatic reduction occurred between 1987 and 2000, leading to the disruption of the livelihoods of 25 million people, such as farming and fishing (Werz and Conley 2012; Odjugo and Ikhuoria, 2003; Zieba, 2017; Yengoh and Tom, 2017).

Approximately 30 million people across Nigeria, Chad, Niger and Cameroon compete over Lake Chad's shrinking water resources. These chronic water shortages create instability and violence around Lake Chad (UNCCD, 2016). As stated by Darby (2017), farming and pastoral livelihoods are not spared, the legitimacy of state governments has eroded, and the region has become a recruiting ground for Islamic extremists and the illicit trades in drugs, arms and ammunition. The adverse effects of climate change affecting Lake Chad have

exacerbated food insecurity in the communities that depend on the water from this lake for sustenance (Darby, 2017). Nagarajan et al., (2009) postulated that the frequency of rainy days in northeastern Nigeria has decreased by 53% since the 1970s, while warming in the Lake Chad area is twice the global rate, combined with the trend of a population explosion at a doubling rate, unprecedentedly pressuring the little water supply left in this area with fierce competition leading to conflict among groups.

Sayne (2011) and Haider (2019) emphasised that drought that has significantly reduced the water levels in Lake Chad part has also affected the north eastern part of Nigeria, leading to the migration of some communities from the affected areas towards the wetter southern parts of Nigeria, leading to resource contestation and conflict in the communities migrated to. The resulting impact of the dwindling water resources has also led to changes in the observed water levels in smaller dams and the Kanji dam, which supplies most of the energy to Nigeria. (NEST, 2003; Nyelong, 2004).

In describing the problem of drought leading to water scarcity and conflict, in Katsina and Borno, two frontline states in northern Nigeria where some communities depend on the water from Lake Chad for livelihoods, in 2009, it was reported how Nigeria's government officials from the Special Climate Change Unit of the Ministry of Environment explained how they came face to face with nomadic tribes seeking water and pastures for grazing, moving from drought-impacted areas with lost arable land and water to fertile regions, in the process causing havoc at destination, the bane of the current conflict (Werz and Conley, 2012; Olu-Adeyemi, 2017). The migration and encroachment to other communities, such as into traditional Yoruba lands, are believed to be because of water scarcity, which ultimately leads to conflict (Werz and Conley, 2012; Gouvea, 2016; Awolala et al., 2022). Werz and Conley (2012) further stressed that 1,350 square miles of land, mainly in northern Nigeria turned into desert each year, driving individuals, farmers and herders from rural areas in the north into

the middle and southern parts of the country where their presence leads to conflict with the host communities.

1.5 Research aims and objectives

In view of the interrelationship between the productivity of the environment, people's livelihood strategies and traditional migration motives, the overarching aim of this research is to explore perceptions and responses to climate-induced migration in sending and receiving regions and vulnerabilities associated with climate-induced migration in Nigeria. The sociocultural, institutional and systemic factors in the affected communities, as well as Nigeria as a whole were considered, including probing to what extent climate change-induced migration used as an adaptation strategy leads to resource contestation and conflicts, leading to insecurity problems in Nigeria. Using a case study of Nigeria in the context of climate change, the overarching aim is broken down into three key objectives:

(1) To explore stakeholders' views on ‘migration as adaptation strategy’ to climate change in Nigeria.

(2) To explore issues of resource contestation and conflict that have emerged due to climate-induced migration in Nigeria.

(3) To critically assess (local and national) governance and policy responses to climate-induced migration in Nigeria's sending and receiving regions.

1.6 Contribution of the research

1.6.1 Empirical contributions

This research provides case study evidence of the decision-making process relating to rural-urban migration used as an adaptation strategy from northern to southern Nigeria in the context of environmental stresses and shocks. In general terms, this study responds to the call of Black and Kniveton (2008: p.63), who suggest that for a more meaningful understanding

of climate migration, policymakers must seek to understand the specific causes and consequences of migration by developing "locally specific, case study research which highlights how the drivers of existing migration streams might be impacted by, or sensitive to climate change, rather than seeking to produce crude global estimates based on the delineation of affected areas." Explicitly, the following empirical contributions are made:

In Chapter 4, data were collected on rural-urban migrants' current situations concerning where they are now (the receiving region) and influences shaping migration as an adaptation strategy to climate change, rural-urban migrants' duration in town, their long-term intentions relating to where they want to live and the relationship they retain with their rural home. These findings provide new contextual evidence that aligns with the current literature on environmental migrations.

In Chapter 5, data on migration, in particular, the study site of Nogoa, institutional awareness of this occurrence, social, political and demographic impacts of climate change-induced migration for sending, transit and receiving areas and why migration is used as an adaptation strategy as well as ongoing effort and processes at the political and communal level on the issue were collected, including necessities such as food and water, shelter, employment, safety, security and conflict were explored and discussed.

In Chapter 6, data on Nigeria climate-induced migration: Policy and governance responses concerning sending to transit and receiving regions are collected. This feeds into the literature on policy and governance responses, which currently lack consensus.

Overall, the potential impact of climate change (from the northern to other parts of Nigeria) is significant and will probably lead to resource contestation and conflict. More precisely, the research finds that rural stresses increase the aspirations of individuals in northern Nigeria to seek an alternative life elsewhere as an adaptation strategy to sustain livelihoods. Due to a lack of dearth's research/data that could vividly change how we

understand and react to the challenges of climate change-induced internal migration in Nigeria, this study explicitly demonstrates that very little is known about the livelihood outcomes of climate migrants in sending, transit and their destination and their impacts on host communities. Furthermore, this research discussed in detail some of the government policies, and offered recommendations for changes in government policies to address the increasing challenges of climate-induced migration and the associated gaps and inequalities, such as socioeconomic employment opportunities, security, education and health.

1.6.2 Methodological/Theoretical contributions

For the research in hand, this study develops a theoretical framework in which data on the migration livelihood aspirations and triggers of migration is used as an adaptation-(the extent to which an individual can leave the sending region) and resource contestation-(the extent to which resource contestation leads to violence). The significance of this research stems from the current pedagogical engagement with the climate change-migration discourse's inability to provide credible answers to empirical linkages drawn in policy and adaptation circles. This gap between theory and practice necessitates the exploration of the significance of climatic variability and change to migration resulting from natural resource contestation in Nigeria. Research shows that climate change impacts extend beyond direct geophysical realms and impact migration in low-income and natural resource-dependent regions of the world (Anderson and DeLisi, 2011; Goh, 2012; Maxwell and Reuveny, 2000).

It is also acknowledged that climate change affects many sectors critical to the long-term viability of both natural and social systems. Article 1 of the U.N. Framework Convention on Climate Change, for example, confirms the importance of social dimensions to climate change by defining its adverse effects as changes “that have significant deleterious effects on the operations of socioeconomic systems or human health or welfare” (UNFCCC, 1992: p.7).

The study brings to the fore how the effects of climate change-induced migration

traverse spatial limits and shows how such effects are socially dispersed to precipitate or aggravate violent conflicts and broad human security problems in general, by exploring the contextual underpinnings of climate change-induced migration used as an adaptation strategy, resource contestation and conflicts that is now transforming Nigeria. It also demonstrates how climate change-induced migration exacerbates violent conflicts, affecting already precarious social spaces in nature-dependent societies, and upsetting the availability and distribution of critical resources that sustain livelihood in poor communities. For example, where there are limited resources in an area where massive in-migration is experienced, there is a tendency for a volatile atmosphere to manifest among groups due to contestation for these limited resources. It thus contextually uncovers the mechanisms by which the effects of climate change are directly and indirectly linked to social problems. The study supports the idea that research in this critical area needs to move beyond universal scepticism and into circumstances surrounding climate induce-migration with robust guidelines for effective adaptation policies and decision-making, which are equally important (UNDP, 2024).

In addition to emphasising the importance of climate change-induced migration to Nigeria peace and security, this study highlighted the importance of expanding internal security policy frameworks in vulnerable societies by developing effective strategies to enhance conflict-sensitive climate change adaptation. Recently, it has been observed that the numerous security challenges in Nigeria have led to many security issues. Under such conditions, increased focus on one type of risk associated with climate change-induced migration (resource contestation) reduces or shifts attention away from other equally dangerous but less dramatic security issues, such as the slow-onset of climate-induced environmental degradation and its many associated risks (Adger et al., 2007). The study provides a new direction for addressing existing controversy on why there is no concrete international law that defines climate-induce migrants and the urgent need for it between

theory and contextual/problem-driven narratives on climate change-induced migration and adaptation nexus by contributing to knowledge, bringing into the public domain issues that have hampered research-policy transition in this study area.

In Nigeria, conducting a contextualised examination of the dynamics of climate change-induced migration used as an adaptation leading to resource contestation and conflict connectives is timely, particularly regarding their role in the sending, transit, and destination areas. This is especially true given the country's recent uptick in environmental-related tension and violence. Given the growing importance of climate change-induced migration to internal security, a context-based exploration of underlying dynamics will provide helpful information, data, and policy direction for national security strategists, policymakers, and other stakeholders to consider. This will allow them to initiate empirically and contextually grounded sensitive climate change-induced migration and adaptation plans. More specifically, the following theoretical contributions are made:

- In Chapter 3 is the combination of the theoretical framework methods developed, namely, the Sustainable Livelihood Framework (SLF), Eco-violence (EV), and Frustration-aggression (FA). Theories that examine environmental migration as an adaptation strategy, resource contestation and conflict were developed and synthesised. How the frameworks were implemented was explained. These frameworks form the basis for data collection and analysis.
- In Chapter 4, data were collected on stakeholders' perspectives on rationales for climate-induced migration in Northern Nigeria, vulnerability, migration as adaptation, the specific group that migrated, and the subsequent presentation and discussion of the findings.
- In Chapter 5, data were collected on resource contestation and conflict in the receiving area of the study site, followed by the presentation of results and discussion.

- In Chapter 6, data were collected on policy and governance responses in sending and receiving areas in Nigeria, followed by the presentation of results and discussion. Analysis and discussion help find a way round to understand the government and policy governance structure, which is intricate and challenging to decipher.

1.7 Structure of the thesis

Chapter 2 lay emphasis on the literature review; it explains the concepts of the principal theories adopted for this study: Sustainable Livelihood Framework (SLF), Eco violence (EV) and Frustration-aggression (FA) theories that examine environmental migration as an adaptation strategy, resource contestation and conflicts. Also, a comprehensive literature review of prior research: reports, articles, and other relevant textual resources related to the subject matter (climate change, migration and adaptation, resource contestation and conflicts) were linked and discussed.

Chapter 3 outlines the methods and research design used in this study. It sets the stage for the empirical components by developing and synthesising the frameworks used in this study: Sustainable Livelihood Framework (SLF), Eco violence (EV) and Frustration-aggression (FA). An explanation of how the framework was operationalised in the field and details of fieldwork logistics and the research team were presented. My ethics and positionality as a cross-cultural field researcher are also reflected on. I detailed specific data collection methods and briefly stated how data was analysed. My position as a cross-cultural field researcher and ethics are also discussed. I then detailed specific data collection methods and explained how data was analysed.

Chapter 4 addresses the first research objective. It presents and discusses the collected data results; in the process, a complete understanding of rationales and patterns of internal migration (rural-urban) movement and intervening variable (adaptation) because of climate change in northern Nigeria was developed and analysed. The findings show that migration

is unsuccessful without concrete adaptation plans, whether sudden or slow. Focusing on rationales and patterns regarding people's movements from the sending to transit and receiving region shows that adverse climate change effects such as drought and desertification are contributing factors.

Chapter 5 addressed the second research objective. Data was collected, presented and discussed on the adverse impact of climate change, migrants' experiences/practices of mobility, and implications for receiving communities regarding socioeconomic, sociocultural, political and resource conflict, resulting in security challenges to Nigeria. Additionally, it includes why migration is used as an adaptation strategy and government policies concerning managing climate change-induced migration actions within Nigeria.

Hypothetical data to examine the migration of rural households during severe droughts and desertification were used, enabling an understanding of individuals' migration behaviour. Such knowledge is essential as it provides new insights into the government's management of climate change-induced migration actions within, along with suggestions for enhancing policies in managing the challenges arising from such migration in these regions..

Chapter 6 dealt with the third research objective by analysing policy and governance responses in sending and receiving areas in Nigeria. This policy analysis outlined a recommendation. (See Chapter 7, section 7.5). It involves a systematic process of evaluating different policy options, considering their advantages and disadvantages, and selecting the best course of action based on the available data and evidence. The chapter also compares different policies in other nations to weigh the strengths and limitations of the Nigerian government's approach to mitigating the challenges and issues resulting from climate-induced migration.

In Chapter 7, I conclude the thesis by revisiting the research objectives; the deduction was harmonised, and the summary, conclusion, and recommendations were presented. The

study findings highlighted how the drivers of existing migration streams are sensitive to climate change in Nigeria. The study findings also provide new conceptual insights into the intertwining of resource contestation, conflict and migration used as an adaptation strategy influenced by the adverse effects of climate change.

Chapter 2: Literature Review

2.1: Introduction

This chapter examines the literature on climate change-induced migration, which is used as an adaptation strategy, resource contestation, and conflict. Literature on the three theories best suited to this study, SLF, Eco-Violence, and Frustration Aggression, was reviewed, delving deeper into their strengths and weaknesses. The role of agency in migration decisions to diversify livelihoods and how and why migration occurs were explained. Particular emphasis is placed on circulation, gender, rural poverty, rural-urban linkages, and the role of individual agency, including how climate stresses and shocks may influence migration and adaptive capacity. Finally, the challenges of climate-induced migration as an adaptation strategy were examined.

2.2 The Principal theories-Eco Violence (EV), Frustration Aggression (FA) and Sustainable Livelihood Framework (SLF) concepts

Given the interdisciplinary nature of this research and the multiple factors at play, a theoretical approach that encompasses migration, environmental, political, socio-economic and psychological variables was necessary to understand and analyse the phenomenon under investigation. Three theoretical perspectives serve as guiding principles. The three theories examined are Eco-violence, Frustration-Aggression, and Sustainable Livelihood.

2.2.1 The Sustainable Livelihood (SLF). (Experiencing shocks or stresses caused by climate change and the drive to seek solutions to maintain or improve one's livelihood)

Before delving deeper into the SLF concept in this study to understand migration as an adaptation strategy, it is important to provide a brief overview of the work of two prominent migration theorists. The first scholarly contribution to migration theory comprised two articles by the nineteenth-century geographer Ravenstein (1885, 1889: p.286), in which he formulated his “laws of migration” using British census data. He saw rural-urban migration in Britain as

an inseparable part of development and asserted that the major causes of migration were economic. Importantly, migration was a choice "which arises from the *desire* inherent in most people to better themselves in material respects" (Ravenstein, 1889: p.286).

Migration patterns were assumed to be influenced by income differentials and population densities in sending and receiving locations (Skeldon, 1997: p.19). More specifically, people's perceptions of what the receiving area could offer (Harris and Todaro, 1970). Migration was thought to occur when the prospect of a better life in a new location outweighed the current life at home. This concept served as the foundation for the push-pull migration theory, which Lee is well-known for (see Figure 2.1). Lee's assumption is that migration occurs because of combinations of 'push' factors at the place of origin and 'pull' factors at the destination (Lee, 1966).

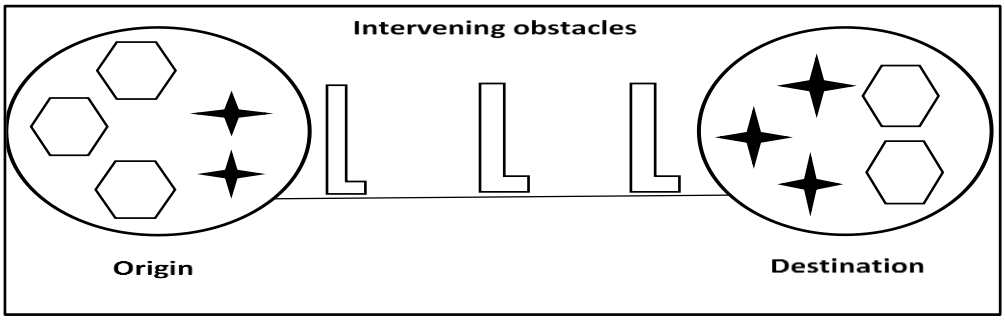

Figure 2.1: Adapted and remodelled push-pull frameworks. Each star or pentagon represents either a positive or negative condition (respectively) in the place of origin or destination. (Source: Lee, 1966).

Push factors include "poverty, unemployment, landlessness, rapid population growth, political repression, low social status, poor marriage prospects," King (2012: p.13), which in this study is climate change, while pull factors include the perception of "better income and job prospects, better education and welfare systems, land to settle and farm, good environment and living conditions, political freedom and so on." Most of the aforementioned are the driving factors that pull individuals to the study site. With it are the effects of intervening obstacles, such as transportation, that affect the aspiration capabilities of individuals. The balance of positive and negative push and pull factors "must be sufficient to overcome the natural inertia

that always exists" (Lee, 1966: p.51).

The model Lee (1966) demonstrated is a pointer for understanding migration. It is a contemporary work that examines specific drivers or causes of migration (Massey et al., 1993)-such as the flows of money, people, and ideas that link origin and destination, broadly divided into social-cultural, political, economic, and ecological factors (Pryor, 1981). Because Lee posits that migration is presumed to occur when the promise of a life in a new destination outweighs the current lifestyle at home, one could make the case that there is a link between migration and sustainable livelihoods, looking in particular at the established factors that connect the two in this study, the adverse effects of climate change. As such, one can argue that the SLF adopted in this study that concludes that migration should be seen as one of the livelihood strategies open to households, according to Mcdowell and de Haan (1997) viewpoints, is an offshoot/extension of earlier migration theories developed by these distinct scholars, Ravenstein and Lee.

SLF focuses on finding resolutions to the problems of vulnerable communities by creating human-centred, participatory, and dynamic development opportunities to sustain livelihoods (Natarajan et al., 2022). Kollmar and St. Gamper (2002) stated that the potential for applications of the Sustainable Livelihoods Framework is manifold and not restricted to livelihood thinking only, as the approach includes ideas of other recent theoretical approaches. Its flexible design and openness to changes make it adaptable to diverse local settings, where it can be applied to different extents associated to the development research or project objectives, which in this study is climate change adverse effects triggering migration that is being used to sustain livelihood (Adaptation strategy) (Kollmair and St. Gamper, 2002).

The Sustainable Livelihoods Framework serves as an instrument for investigating poor people's livelihoods, while visualising the main influence factors. Livelihood thinking dates back to the work of Robert Chambers in the mid-1980s (Natarajan et al., 2022). In realising

that conventional development concepts did not yield the desired effects and that humankind was additionally facing an enormous population pressure, Chambers developed the idea of "Sustainable Livelihoods" with the intention to enhance the efficiency of development cooperation. His concepts constitute the basis for the Sustainable Livelihoods Framework (SLF), developed by the British Department for International Development (DFID). In 1997, DFID integrated the approach into its program for development cooperation. Since its introduction in the early 1990s, the Sustainable Livelihoods Framework (SLF), according to DFID (1999; 2000; 2017), has become one of the central components of academic and applied fieldwork, especially in rural areas of the global South. The SLF that became popularised from the late 1990s onwards originated from Sen's (1985) Capabilities Approach, which focuses on individuals as the locus for societal development (Scoones, 2009).

Scoones (2015: p.10) states that "livelihoods approaches are now applied to a wide range of topics." The central hypothesis of this study is that livelihood consists of the necessary capabilities, assets, resources and activities for sustaining a means of living. A sustainable living is one that can withstand and recover from stress and shocks, particularly those related to environmental variability that led to migration. It also involves maintaining or improving capabilities and assets, as well as providing sustainable livelihood opportunities for individuals. Where the means to sustain livelihoods is lacking due to environmental variations, people migrate to other areas that can sustain livelihoods. Thus, sustainable livelihood is the opportunities and capabilities for living beings (more so humans) to access much needed resources without prejudice, which are necessary for survival without recourse to measures that would be detrimental to the unstained depletion of resources in times of shock, while considering risks associated with unforeseen events to nature (Jackson, 2021).

Additionally, a sustainable living should bring overall benefits to other livelihoods at both local, national and global levels, in both the short and long term. The SLF has influenced

the development initiatives of government, multilateral, and non-governmental organisations. It has also influenced the perspectives of scholars and practitioners regarding the conditions in environmentally disadvantaged areas (Scoones, 2015). Also, the SLF has provided a structure for gathering data. It has justified the allocation of resources and aid towards programs and projects that aim to improve the lives of affected individuals (Natarajan et al., 2022). Indeed, the SLF is good at investigating the abstract compilation of rights, such as freedom of movement, abilities, societal disparities, welfare, environmental fluctuations, and the study of new institutional economics (see Leach et al., 1999).

One weakness of the sustainable livelihood framework is that it has not extended its dimensions. It needs to add two new capitals, namely 'information and freedom' based on the voices of the indigenous group concerning their vulnerability and social exclusion. For instance, vulnerable people are heavily affected by adverse environmental events because they do not get timely information. Access to proper information can help bring the vulnerable to the main development stream; therefore, “information” seems an essential capital (Chowdhury, 2021). Also, for vulnerable people, freedom of doing things is equally important, as well as freedom of expression and participation in the society in which they live. This way, freedom of expression and participation is a sign of respect, democracy, and equality, which made 'freedom' another critical capital in the model, according to Chowdhury. But where these hitches are compensated for is the idea that it incorporates several elements of these theories: neoclassical, migrant selectivity, world systems, and push-pull, especially classifying climate change as an indirect driver of migration, which operates on the direct drivers that are pre-existing economic, demographic, social, political, and environmental conditions. The main reason the researcher deems it fit as an advantage in framing the push and pull elements concerning the out-migration of the population from the sending region and in-migration to the receiving area, especially the study site of Nogoa, Makurdi, Benue State,

Nigeria, and its suitability in exploring the key shift in the global development landscape that characterise the 21st century, namely the impacts of climate change on rural livelihoods causing out-migration from the affected areas and leading to resource contestation and conflicts in the receiving regions (Natarajan et al., 2022).

2.2.2 The Eco violence or the "Shrinking Pie" (EV). (Environmental scarcity as a significant causal factor of civil violence)

The Eco violence or the "Shrinking Pie" (EV) theory originated from a series of studies conducted by a group of environment-conflict specialists, including Homer-Dixon, Blitt, and Gleditsch from the Toronto group and the Swiss program known as ENCOP Homer-Dixon and Blitt (1998). They argue that the heavy dependence of large populations in developing nations on vital natural resources like farmland, water, and vegetation leads to conflicts caused by the depletion of these resources due to degradation, population growth, or excessive usage. Migration is one example of a circumstance that can trigger these conflicts. Homer-Dixon and Blitt (1998) highlight migration and population growth among resource-dependent communities as factors that can lead to conflicts. As people affected by climate change migrate to new territories, tensions over resources and ethnicity can arise (Odoh and Chilaka, 2012).

The Eco violence model acknowledges that environmental changes, such as drought, desertification, heat waves, and population growth, can lead to scarcity. These factors often create pressure on available resources and contribute to unequal distribution, as access is limited (Dougherty and Pfaltzgraff Jr., 1997). In the same vein, Homer-Dixon argues that resource scarcity alone does not necessarily lead to conflict, but is aided by an "ingenuity gap" (Homer-Dixon, 1995: p.589). Ingenuity gaps occur because of adverse environmental, socio-economic, cultural, and political/institutional factors. These factors are commonly found in underdeveloped societies and contribute to an increase in conflicts resulting from environmental scarcity. These factors encompass high poverty rates, limited innovation in

agricultural methods, unpredictable dynamics of ethnic, cultural, and religious interactions, inadequate institutional capacity for governance, and other factors that may have a mediating influence. Also, Shelley (2007) expanded the argument, stating that resource scarcity does not cause conflict on its own; it results from a combination of factors, such as climate change-induced migration for adaptation, resulting in resource contestation in the search for means of survival, changes in socio-political processes result in political instability and the formation of regimes through elite alliances and elections, consequently altering the distribution of opportunities, impediments, and violence. Most times, such alterations promote collective violence in political systems with a closed political opportunity structure.

A criticism of eco-violence theory is its limited predictive power due to its focus on general systems analysis. This study addressed the issue by focussing on specific cases of environmental-related vulnerabilities relevant to conflict. A combination of factors, which include climate change-induced migration for adaptation, resulting in resource contestation and conflict issues, makes it very useful in this study. Also, the concept of environmental violence offers a potentially robust frame for engaging this issue. A more specified and structured framework and definition of environmental violence, focusing on human-produced harms by way of climate change-induced migration, resource contestation and conflict, is timely and beneficial to this study. Eco-violence theory complements the sustainable Livelihood framework by delving into economic, demographic, social, political, and environmental resources such as water and land factors that, if not adequately managed, lead to resource contestation and violent conflicts.

2.2.3 The Frustration aggression (FA). (A feeling of tension that occurs when efforts to reach a goal are blocked)

The Frustration aggression (FA) theory originated from an article published in 1939 by a team led by John Dollard, which specifically examined aggressive behaviour. The broad

applicability stems from various factors, including its clear and concise presentation. The main hypothesis posits that aggressive behaviour is always as a result of a frustration-inducing impulse, and conversely, the presence of frustration always leads to some form of aggression. In this context, frustration refers to the obstruction of a desired outcome, with a desired outcome being the rewarding final step in a continuous series of actions.

As claimed by the proponents of this theory, the term 'frustration' is commonly used to describe both the act of preventing someone from achieving a specific goal or reward, as well as their subsequent responses to this prevention. In this context, 'frustration' refers to the situation where one's ability to get a reward is hindered by another person or external factors. It also implies that the response to this hindrance is characterised by irritation or annoyance (van der Dennen, 2005: p.1).

Some researchers questioned the hypothesis and proposed moderation of frustration and aggression, to which Berkowitz responded, expanding the hypothesis in 1989, based on the causes and effects of frustration, explaining that the negative effect, a personality variable involving the experience of negative emotions such as anger, contempt, disgust, guilt, fear, and personal attributions, plays a significant role in whether frustration instigates aggressive behaviour intended to ease limitations to wants (Berkowitz (1989; 1990). One could argue that relative differences exist in how people feel and interpret their discontent and satisfaction in response to a frustrating situation or event in different contexts. These differences may influence responses, making them dependent on other factors operational in the particular socio-cultural, political, and economic context. There are obvious limitations that may inform a more conservative view on the relevance of these differences.

Despite the scepticism surrounding (FA), this study finds it appropriate to examine and evaluate how people's reactive personalities are influenced by their inability to access vital resources for their livelihoods in collaboration with the Eco violence (EV) ideas discussed

earlier. This study applied (FA) because of other operational factors, such as socio-cultural, political, and economic context, that contribute as facilitators or inhibitors of aggressive behaviour. In this context, it effectively encapsulates the interplay between climate change-driven migration and violent conflicts over resources. Olaniyan, Francis and Okeke-Uzodike (2015) note that climate change adversely affects peoples' socio-structural conditions by altering the quality and quantity of available resources, potentially resulting in violent conflict. Frustration Aggression theory works with Sustainable Livelihood Framework and Eco-violence, delving into economic, demographic, social, political, and essential environmental resources such as water and land. Because of being denied access to these essential resources for sustenance, people, out of frustration, tend to forcefully gain access to what lawfully belongs to others, thereby leading to a toxic environment where chaos reigns, and, if not quickly nip in the bud, lead to insecurity for the state.

When looking at the circumstances in the northern region of Nigeria, the significance of these three theoretical frameworks becomes more apparent. This is characterised by a significant dependence of the population on the natural environment for their means of subsistence. The study accurately captures the context of the decline in resources/scarcity caused by climate change, leading to out-migration, which is used as an adaptation strategy from the affected areas to other parts of Nigeria, leading to resource contestation and conflicts.

The lack of technological innovation, minimal political and social support, and other adverse social factors observed in Nigeria exemplify the ingenuity gap described by Homer-Dixon (1995, 1996). Also, the lack of systematic help amplifies the hardships faced by the people in their day-to-day lives. Consequently, affected groups are more likely to channel their frustration towards the system or other groups they believe are responsible. In such situations, marginalised groups may direct their aggression towards competitors for limited natural resources as a result of their vulnerability. Against this context, one can comprehend the

differing responses of populations, which are influenced by the socio-cultural, economic, and political significance attributed to vital natural resources for sustenance and livelihoods.

2.3 Defining Migration

Who is a “migrant” is habitually not clear cut in public debate, as migrants are often fluxed with ethnic or religious minorities and asylum seekers (Saggar and Drean, 2001; Crawley, 2009; Beutin et al., 2006; Baker et al., 2008). Even though there is no consensus on a single definition of a 'migrant', migrants are often defined by foreign birth, citizenship, or by their movement into a new environ-country, be it internal or international, staying temporarily (occasionally for one month) or settling in the long-term whether it is internal (Anderson and Blinder, 2019).

Particular distinctions must be made (Bartram et al., 2014), and the fundamentals of migration discussed. Smelser and Baltes (2001) denote internal migration as the movement of people relating to a change of residence within a country, while international migration is the movement of people across international boundaries. As much as the media displays international migration as an omnipresent phenomenon, the vast majority of migrants tend to move locally within their own country (Choucri, 2002). According to the IOM (2022) report, approximately 280 million migrants move beyond their national borders, while approximately 740 million internal migrants remain in and move within their countries (Kane et al., 2013; O’Reilly, 2013). A significant percentage of internal migrants are displaced due to environmental factors and rarely cross their national borders (O’Reilly, 2013). Migration can be forced or voluntary. However, when migration is well thought out of from an environmental perspective, there is still confusion on whether it should be termed “forced" or “voluntary" (Vertovec, 2007: p.968). The slow onset of environmental events or changes, such as gradual desertification or drought, can lead to out-migration from the affected areas and can be classified as forced migration. The lack of a clear relationship between migration and

environmental change that could have helped separate environmental drivers from other drivers further heightened the confusion (Vertovec, 2007: p.968).

To this extent, the interwovenness of reactive and proactive migration must be made more explicit, as it is relevant to environmental migration. An essential aspect of being proactive rests solely on individuals' mobility capability, viewed as the planned movement of individuals from one place to another to seek favourable new opportunities and improve livelihoods (Bell and Ward, 2000). This is usually planned or voluntary, influenced by the slow onset of environmental change in certain affected areas because of the adverse effects experienced, leading to what we can refer to as "environmental migration." Environmental migration, because of the adverse impacts of climate change, can be classified as proactive by addressing or controlling the situation and making it happen in a reactive-sudden manner that is not of a strategic plan or decision, also known as a reactive disaster management plan in action (Jacobson, 1988; Bell and Ward, 2000). Sowell (1996) posits that sudden environmental changes such as typhoons and floods frequently result in temporary displacements, whereas gradual environmental changes such as desertification and drought frequently result in permanent migration. Also, the International Migration Institute (2013) posits that migration desire refers to how an individual views migration goals as appealing dreams or instrumental means to an end. However, desire is only part of the story; mobility is unlikely without the ability/assets to migrate.

Based on the UK government's Foresight report (Government Office for Science, 2011) on migration and global environmental change, it is explained that those who are unable or unwilling to migrate will be the most vulnerable to environmental change and the adverse effects that it brings, which in essence can be translated to having no adaptation plan in place to survive. However, with the current trend of climate change adverse effects affecting Sub-Saharan Africa, people are now using internal migration to more conducive areas to adapt to

the adverse effects of climate change. In developing countries, Lucas (2015) argues that the drivers of migration include lack of employment creation, spatial gaps in earnings, rural-urban relocation for work, availability of resources, education, climate change, forced migration, and violence. Conceivably, perhaps the primary motivation for internal migration in developing nations is to enhance individuals' economic circumstances.

Maharjan et al., (2021) conducted a study on the impact of labour migration on household adaptation to climate change in South Asia's Hindu Kush Himalayan (HKH) region. This region is known for its vulnerability to environmental hazards, which may worsen with future climate change. The study focused on four river basins - Gandaki, Indus, Upper Ganga, and Teesta. The findings revealed that migration played a significant role in influencing household adaptation in relation to livelihoods. People in the HKH region and downstream have long adapted to living in a fragile environment, including labour migration, to diversify livelihoods and spread risks (Pathak et al., 2017). There is a growing recognition that migration can serve as an adaptation strategy and/or help households adapt to the adverse effects of global environmental change (McLeman and Smit, 2006; Bardsley and Hugo, 2010; Black et al., 2011; Jha et al., 2018). Similarly, Sobczak-Szelc and Fekih (2020) conducted research on migration as one of several adaptation strategies for environmental limitations in Tunisia: evidence from El Faouar indicated that migration is used to cope with and adapt to the impact of environmental changes and affecting agricultural production in the South Mediterranean. Emerging theoretical and empirical evidence suggests migration influences household adaptation (Afifi et al., 2016; Montreux and Barnett, 2009; Scheffran et al., 2011). It also assists households in absorbing climate shocks (Gioli et al., 2014; Tebboth et al., 2019). Raleigh et al., (2008) and Okoth-Okendo (1989) contend that because of the limited ability of developing countries to mitigate environmental hazards adequately, there will be mass migration used as an adaptation by individuals to escape from areas that are adversely affected

by climate change to a more conducive place.

As identified by the European Union (2015), researchers have recognised five foremost aspects that lead to the movement of individuals: economic, social, political, demographic and environmental. The latter impacts all of these primary drivers, both directly and indirectly. Nevertheless, researchers came to the conclusion that these aspects in tandem could improve knowledge, policy choices and predict future mobility (European Union, 2015).

Human activities regarded as hazardous to the environment are bound to cause the deterioration of the global atmosphere, resulting in changes in environmental conditions. Societies will encounter climatic changes (in temperature, storm frequency, flooding, and added issues) that precede previous experiences, mainly due to the unfavourable consequences of climate change (Clark, 2012). The adverse effects of climate change will lead to external and internal migration. “People in the rural areas will mostly use migration as the ultimate and most dependable choice for adaptation, even though there are still many adaptation strategies” (Fielmua, Gordon, Mwingyine, 2017: pp.155-159). Migration used as an adaptation strategy without adequate mitigating programmes and plans to tackle the root cause, in the real sense, will lead to maladaptation. It is imperative to note that mitigation is the most appropriate answer to climate change and, in reality, offers a better solution to the problem.

Adams and Adger (2013) noted that recent debates on "migration and adaptation" have been heavily influenced by climate change studies. As a result, special attention has been given to the connection between climate change, migration, and adaptation. (EACH-FOR, 2009; Foresight, 2011). Cisse et al., (2010) posit that migration appears to be significantly associated with climate unpredictability and, in essence, adaptation in some regions, such as the Sahel. However, most studies have failed to establish multidimensional and multifactorial causes of migration. Establishing direct causal links between drivers of migration has been an

arduous task for researchers (Foresight, 2011; Assan and Rosenfeld, 2012, p.1055; Morrissey, 2012). Orlove (2009, p.132) expressed that the theoretical debate on migration adaptation is understood through its potential and limitations. The term "adaptation" describes two key features since the 17th century: (a) the adaptation process and (b) adaptation as a result.

Dorlöchter-Sulser (2012) explained that Darwin first introduced adaptation in (1869). Alland (1975, p.60) stated that it was then adopted by anthropologists to explain the mechanism at work for continuity and change in human societies, followed by some reference to adaptation in migration research during the 1970s (see Lewis,1982: pp.151-189), but with less theoretical influence on later academic discussions on migration.

2.3.1 Agency (Migration capability discourse)

The fragmented insights into migration can be integrated into a framework by conceptualising virtually all manifestations of (internal and international) migration as a function of capabilities and aspiration (Carling, 2002; de Haas, 2008). In this regard, "individual agency is thus central to understanding migration" (De Haas, 2011: p.8). Kabeer (1999: p.438) states that the ability to "define one's own goals and act on them" is an agency. Individuals unable to determine and act on their migration goals are said to lack agency. Individuals with solid desires to migrate but lack the means to do so may become 'trapped' in their current location.

Structure and agency are elements that influence human behaviour. Individuals' ability to act autonomously and make their own free decisions is agency. The structure is the recurring pattern that influences or restricts the available options and possibilities (Berger, 2008). Randell (2016) posits that the interplay between structure and agency is a key concept, as it helps to position individual actions within their appropriate social context. Giddens (1984) argues that agency is the power of individuals to freely make choices and perform actions that affect their lives in conjunction with structure, a system of rules and resources

that shape the extent to which those choices and actions are possible. Examples of rules include laws, social norms, and policies, while examples of resources include social capital, wealth, and skills. In this study, it is a lack of basic amenities, mainly water and fertile land for cultivation, because of climate change adverse effects, drought and desertification. Sewell (1992: p.9) noted that agency has a dynamic relationship with structure, as structure "empowers and compels social action, and it is reproduced by social action." In other words, agency arises from the structure of one's knowledge of rules and access to resources, and structures can be reinforced or reformed because of human agency. Agency and structure interact; in fact, an agency may occur when individuals exploit structural resources to accomplish certain ends. In this regard, agency and structure interact to shape the outcomes of forced migration.

Agency plays a vital role concerning the migration of individuals from the sending to transit and receiving region because migration decisions of people that migrated are influenced by an interaction of individual and household preferences and characteristics, as well as economic, political, environmental, demographic and social structures with the main goal of seeking better living standards (Black, Kniveton, and Schmidt-Verkerk, 2011). Thus, diverse institutions, both formal and informal, and often acting in combination, shape how different actors access, use, and derive well-being from environmental resources (Leach et al., 1999).

Migration theory has taken a more simplistic view of migration decision-making, categorising it as either voluntary (i.e., choosing to move to access employment or educational opportunities, or for life course reasons such as marriage or retirement) or forced (i.e., being forced to move for reasons such as marriage or retirement) (i.e., moving involuntarily because of wars, persecution, natural disasters, or development projects). Several researchers have argued that this conceptualisation is flawed because migration decisions fall on a spectrum

between voluntary (wholly driven by agency) and forced (wholly driven by structure) (Hunter, 2005; de Haas, 2009; Black et al., 2011). While voluntary and forced migration are ideal scenarios, most migration occurs somewhere in the middle (see Figure 2.2). de Haas (2009) posit:

> *"Many migrants who move primarily for work do so because they face severe constraints on personal development at home, and the range of migration options available to them is constrained and structured by economic, political, and social relations. Likewise, those who are usually characterised as forced migrants, such as refugees, exercise their agency as far as possible in the face of appalling circumstances. It is only with extreme movements such as slavery and deportation that agency may be discounted completely." (pp.2–3).*

FORCED MIGRANTS ENVIRONMENTAL (DROUGHT, DESERTIFICATATION, ETC)

VOLUNTARY MIGRANTS ECONOMIC-LABOUR

Figure 2.2: Conceptualisation of a continuum of migration decision-making. (Source: Author, 2023).

A migration continuum[3] reflects that all migrants face some level of constraint in deciding whether, when, and where to migrate, and can decide their destinations based on individual choices and preferences. For example, in a study of Somalian, Burundi and Mozambican war refugees to urban Dar es Salaam, Tanzania, Sommers (1999) found that the refugee population had actively chosen to move to a town instead of a refugee camp. For these

[3] A multi-dimensional issue that covers migrant's inclusion in economic, psychological, social, linguistic, navigational, and civic spheres, as well as empowering host communities and other local actors to receive and engage with migrants.

reasons, Bakewell (2010) proposes that agency deliberations are appropriate for all migrants despite some migrants having minimal room for manoeuvre. This involves an acceptance that migrants are not inertly reacting to macro-forces (de Haas, 2010). Instead, people decide to migrate (or to assist others in migrating), thereby actively engaging their agency and choice (Schiller et al., 1995).

2.4 Introduction of climate change-induced internal migration

This section examines the literature on climate change-induced internal migration in correlation with other factors (e.g. population growth and development). Particular emphasis is placed on circulation, gender, rural poverty, rural-urban linkages, and the role of individual agency, including how climate stresses and shocks may influence migration. Literature on migration theories and conflict caused by resource contestation, including adaptation strategy and challenges of climate-induced migration as an adaptation strategy was examined.

> The IPCC (1990, p.20) suggests that climate change could significantly affect human migration, leading to displacement caused by erosion, flooding, and severe drought. In line with a report by the newly established Intergovernmental Panel on Climate Change (IPCC) in 1990, climate change is projected to impact millions of individuals, potentially resulting in mass migration. Because of rising sea levels, desertification, and droughts making sustenance unbearable, individuals would migrate. Additionally, because of insufficient services in IDP camps, refugees and surrounding communities would be affected by epidemics (IPCC, 1990).

Climate change is a critical issue for both academia and society. The escalating global temperatures and their far-reaching effects on the environment, economy, and society have triggered a flurry of research and analysis. Changes in land cover caused by human activities have resulted in both a net release of CO_2 and a rise in global temperature from the current

1°C above preindustrial levels to close to 1.5°C (IPCC, 2022; Armstrong McKay et al., 2022). If this trend continues, it will dramatically increase the risks of food and water shortages, conflict, deadly extreme weather, and other crises, necessitating urgent effective adaptation action/plans (2022). Threats posed by climate change are determined by both the rate of warming and the evolution of population, consumption, production, technological development, and land management patterns (*Ibid*). Climate change and desertification are expected to reduce crop and livestock productivity in drylands, and with increasing warming, climate zones are expected to shift poleward in the middle and high latitudes. Desertification also amplifies global warming through CO_2 emissions linked to decreased vegetation cover (Cai et al., 2016).

The Intergovernmental Panel on Climate Change (IPCC) in 2022 stated that climate change could intensify environmentally driven migration within countries and across international borders. Extreme weather events and slow-onset events can lead to more people being forced to leave their homes, disrupt the balance of food production and consumption, endanger people's ability to make a living, and increase the likelihood of conflicts. The United Nations (2019) asserts that climate change, as a risk multiplier, amplifies preexisting challenges. The UN warns that without immediate action to address it, over 140 million people in Sub-Saharan Africa, Latin America, and South Asia will be forced to migrate within national borders by 2050. The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals allow countries to leverage on actions that lead to real change.

Climate change adverse effects, as one of the most serious threats we face in the twenty-first century industrial age, have continued to pollute the air we breathe, and our seas are being polluted daily and the depletion of our forests. Increases in temperature, variable rainfall, rising sea levels and flooding, drought and desertification, land degradation, more frequent extreme weather events, and affected freshwater resources lead to biodiversity loss

(Cardinale et al., 2012). These factors, and others, have resulted in serious threats that have gradually led to negative consequences such as weak soil, leading to critical shortages in food production, among other things. Using finite energy sources, which disrupt our ecological balance is not helping the situation.

For most of the 21st century, climate change has been of much consideration, and as of late, various research studies have been conducted on its adverse effects on the environment. Most investigations embrace theoretical models introduced in a cluster of specialised reports (Parnell and Walawege, 2011). The Intergovernmental Panel on Climate Change (IPCC) describes environmental change as "any adjustment in climate after some time, regardless of whether because of common inconsistency or human actions" (Farmer, 1987). In another context, it alludes to noticeable changes (e.g. utilising measurable tests) found in the mean qualities or properties of the climate, persevering over an all-encompassing timeframe (10 years or more), regardless of whether caused by normal fluctuation or anthropogenic impacts (Mohammed, Akpan and Aliyu, 2013). While the IPCC definition credits causality to both typical and anthropogenic agencies, the United Nations Framework Convention on Climate Change underscored anthropogenic causality by characterising environmental change as a difference in climate that is ascribed, either directly or indirectly, to human movement (Black et al., 2005).

Wilkinson et al., (2016) claim that few official studies have been conducted on migration and displacement because of climate change, despite numerous agreements on climate change-induced migration issues. Warner (2012) explained that the Cancun Adaptation Framework acknowledged the formal recognition of climate change and its consequences on mobility. The invited officials at the convention were tasked with implementing measures to improve cooperation, coordination, and understanding of the effects of climate change on migration and displacement. The first draft of the Paris Climate

Change Agreement (Article 5 Option II Paragraph 3) acted as a 'climate change displacement coordination policy to provide emergency relief for displaced people as well as plan for their resettlement' (UNFCCC, 2015a: Wilkinson et al., 2016). It also involves well-planned resettlement of migrants locally, nationally, or globally (UNFCCC, 2011). Furthermore, a task force was created under the Cancun Adaptation Framework to specifically address the relationship between climate change and human mobility. The group was tasked with providing technical assistance to officials concerning migration problems due to climate change (Warner, 2011). Also, in December 2015, the (Conference of the Parties - known as COP21), held in Paris, renewed the focus on migration and displacement due to climate change. The issue was raised during the COP21 event because of the lack of decisiveness in the previously held in Doha concerning decisions on matters of climate-induced migration (UNFCCC, 2012).

We must acknowledge that migration leads to population growth or overpopulation, especially in the developing world. When we use the term "overpopulation," we specifically mean a situation in which the Earth cannot regenerate the resources used by the world's population each year (Bish, 2024). Experts say this has been the case every year since 1970, with each successive year worsening. Human beings have a legitimate claim on a sufficient and fair amount of Earth's resources, however, with the population of the world approaching 8 billion, even if everyone adopted a relatively low material standard of living like the one currently found in Papua New Guinea, it would still push the Earth to its ecological breaking point (Bish, 2024).

Population growth rates in Africa have accelerated over the years, and population pressures on resources are perceived to be far greater than "carrying capacity" (Bilsborrow, 1992, p.133). Africa's urban population is expected to nearly triple by 2050, projected to be 1.34 billion (Hajjar, 2020). Coupled with a high rate of urban primacy in African countries

(whereby one city is multiple times bigger than the next nearest) and the high number of megacities, enormous stress is going to be placed on the physical, political, economic and societal infrastructure (Hajjar, 2020). The rate of urbanisation in Africa is closely related to agricultural expansion and industrialisation, with significant implications for consumption demand, and, as a result, putting pressure on natural resources (Bilsborrow, 1992). Population growth is influenced by migration, putting pressure on resources. Hatton and Williamson (2002) argue that a rise in GDP per capita could potentially increase migration rather than decrease it in many developing nations. Because of the ongoing development that leads to increased income, those with much to gain from moving will migrate to areas with well-paying jobs. This is likely to continue until the home country reaches a certain level of peak, at which point migration will probably stabilise and possibly decrease (The Migration Observatory, 2012).

Several studies found that migrants, apart from contributing to population growth, impact the environment, particularly in competing for limited resources in receiving areas, causing scarcity. (Begosi, 1998; Curran, 2002; Curran and Agardy, 2002; Naylor et al., 2002). Engelman (2009) asserts that human population growth is undeniably a major contributor to climate change, given that humans rely on fossil fuels to power their increasingly mechanised lifestyles. More people mean more demand for oil, gas, coal, and other fuels mined or drilled from beneath the Earth's surface, which, when burned, emit enough carbon dioxide (CO_2) into the atmosphere. The Sierra Club's non-profit Global Population and Environment Program (2019) reports show that population, global warming, and consumption patterns are inextricably linked to the collective global environmental impact. Without immediate action to implement plans and programs to address it, global warming will worsen because of population growth (Engelman, 2009).

Despite being a logical and common immediate response to climate change, migration

is rarely a medium or long-term solution to environmental problems. There is a need to reduce population growth and embrace environmentally sustainable practices in relation to the usage of the earth's resources. This will help overcome poverty, improve employment opportunities for men and women, provide health and education facilities and elevate women's status and roles within the society (IOM, 2008).

In this context, it is vital to understand that, while migration is not a last resort, it could become a new way for people to diversify their livelihoods/sustenance in response to the effects of climate change, which is an adaptation strategy. Such migration strategies allow individuals to diversify their income, survive, and spread risk for the household, which is essentially an adaptation strategy. The idea behind migration is that, with limited resources available to people in areas affected by climate change, migrating may be preferable Randall, 2017). By failing to address climate-induced migration, the government may be neglecting a crucial adaptation strategy. And this can deepen the existing imbalances in the society (*Ibid*). Although governments do not widely accept migration as an adaptation strategy, but it is a practice that many people affected by the adverse effects of climate change engage in nevertheless. Most people do not refer to their actions as "migration as an adaptation." Although many people who are already fleeing climate-change-affected areas to another area less prone to the adverse effects of climate change may not consider themselves "climate migrants" and may not consider their actions to be "climate adaptation," they have used migration as a strategy for adapting to climate impacts (Randall, 2017).

2.4.1 Internal climate-induced migration and its overlap with conflict and economic facets

Climate change pressures on individuals in the affected regions have led to out-migration, which is used as an adaptation for livelihoods, leading to violent conflicts over essential resources in transit and receiving regions (See Gendron and Hoffman, 2009; Howard

and Homer-Dixon, 1996; Kameri-Mbote, 2004; Percival and Homer-Dixon, 1998).

Even though climate change can act as a driver of migration and/or conflict, so is the economic aspect a driver of migration (Collier and Hoeffler, 2004; Castelli, 2018). Acknowledging the corresponding nature of links within a nexus, it should also be noted that conflict has been recognised as a significant contributor to global greenhouse gas emissions (Reisch and Kretzmann, 2008; Crawford, 2019). For example, the US Department of Defence has consistently been responsible for consuming between 77% and 80% of the entire US government's energy budget. Concerns have been raised about the environmental impact of conflicts such as the Iraq war and the ongoing Russia-Ukrainian conflict (Reisch and Kretzmann, 2008). (Reisch and Kretzmann, 2008; Crawford, 2019; Pereira et al., 2022). Conflicts bring about a series of negative consequences, including premature death, disability, psychological trauma, physical injury and malnutrition (Murray et al., 2002). Likewise, conflict can also be the cause of displacement. There is evidence that violence, in particular, serves as a main push factor in the case of forced migration (*Ibid*).

Climate-induced migration, conflicts, and socioeconomic factors are interconnected but often influenced by intermediary factors that could result in different outcomes. For example, drought could cause widespread crop failures, resulting in resource scarcity (Comolli, 2017). Bereft of their livelihoods, the rural population may be forced to migrate, many choosing urban destinations (Kelley et al., 2015; Selby et al., 2017). The resultant urban population boom could then strain local infrastructure, which, if already lacking, is likely to exacerbate existing tensions among the population (Abel et al., 2019). In this situation, there is the distinct possibility that this instability could flare into a conflict (e.g. riots, anti-government protesting and sectarian violence) (UNHCR, 2021). It has also been hypothesised that depending on the surrounding, political and social situation and the lack of resources could directly trigger conflict (Abel et al., 2019; Fjelde and von Uexkull, 2012; Griffin, 2020;

Vestby, 2019). The severity of this situation could potentially lead to an increase in migration (Carius, 2017; Comolli, 2017; Lipp, 2017; Schon, 2018; Seven, 2020). Thus, the outbreak of conflict in migrant-receiving countries has sometimes been attributed to this migration (Rüegger, 2019). However, these instances are edge cases, and only arise under very specific circumstances. The arrival of migrants is deeply unlikely to result in conflict if the groundwork has not already been laid, and this can be resource scarcity in the receiving area migrated to (Bajoria, 2009; Brzoska, 2016; Reuveny, 2007b; Rüegger, 2019; Salehyan et al., 2006).

If climate change induces conflict, then indirectly, climate change also contributes to forced migration. Indeed, recent media headlines, especially those on Europe's refugee crisis, often cite climate change-induced conflict in the Middle East and Africa as a major driver of the surge of migrants to Europe in the past couple of years (Watson et al., 2023). The narrative behind these headlines tends to follow a similar path, claiming climate change reduces availability and alters the distribution of resources such as water, food and arable land, which in turn triggers migration and violent conflict. However, scientific literature linking climate, conflict and migration together is relatively scarce. The existing literature on the impacts of climate change on conflict and migration commonly assesses how environmental pressures instigate out-migration, and, consequently, how climate change-induced migration promotes conflict in migrant receiving areas. The arrival of climate migrants can put pressure on infrastructure, services and the economy of the receiving area, leading to competition over resources, especially when the resources are scarce (Reuveny, 2007a). Nevertheless, while this narrative is common among scholars of peace and conflict studies (Homer-Dixon, 1999; (Homer-Dixon, 1999; Reuveny, 2007a), there is little empirical evidence supporting this claim (Brzoska, 2016; Raleigh and Urdal, 2007).

Typically, in macro-level studies at the country or regional level, migration flows are estimated using linear models, which control relevant socioeconomic and political

confounding variables. Thus, another important driver of migration is income and employment gaps between origin and destination countries, as well as economic and social inequality (The World Bank, 2019). Migration flows are expected to increase in the coming years, driven by income gaps, demographic imbalances, and climate change. During 2013–23, the average income in the high-income OECD countries was $41,261, compared with $795 in the low-income countries, a ratio of 54:1 per cent. Even if the latter were to continue to grow faster than the former, at current growth rates, it would take 135 years to close the income gaps (The World Bank, 2022; OECD, 2023). Global welfare gains from an increase in cross-border labour mobility could be several times larger than those from full trade liberalisation. Migrants tend to gain the most in terms of increases in income and better access to education and health services (The World Bank, 2022).

Economic drivers of migration include both structural and long-running macroeconomic differences between sending and receiving regions or countries, such as development and income levels (GDP), poverty, and inequality and short and medium-term fluctuations, such as the business cycle, economic crises, and recessions (IOM, 2024). Additionally, they encompass factors related to the job market, such as the unemployment rate, employment levels, wages, and job prospects. In addition, they also incorporate housing and lifestyle-related reasons for migration, such as moving to more pleasant places promising a higher quality of life (*Ibid*).

Regarding economic related mobility, countries of origin can benefit from increased remittances, investments, trade, and transfers of skill and technology, resulting in reduced poverty and unemployment. The high-income destination countries also benefit from migration through increased supplies of labour, skills, innovation, and entrepreneurship. Differences in income and unemployment rates, as well as demand for skilled labour, will remain key drivers of voluntary migration, and profound regional economic integration will

intensify migration flows (World Bank, 2017). Migration will thus continue to play an important role in the economic and social development of countries. Economic based migration is set to increase, driven by income gaps, demographic imbalances, and climate change. As it does, there should be global efforts to promote safe, orderly, and regular migration, which can help maximise returns for sending and receiving countries. The migration agenda cuts across many global practices and thus is well-suited for "OneBank" projects (World Bank 2016a). The complexity of migration issues will require partnerships both within the World Bank Group and with the UN system, other multilateral development banks, civil society, and the private sector, whose participation is critical in generating jobs and financial services (*Ibid*)

Even though migration drivers, such as economic, climate and conflict driven are often studied in isolation, there is growing acknowledgement that migration is not the outcome of a single factor or a 'root cause' but of complex configurations of multiple, interdependent and interacting factors (Czaika, and Reinprecht, 2020; IOM, 2024). Despite the absence of a robust theoretical framework and definitive evidence, it is acknowledged that climate-induced migration can potentially result in conflict, and climate-driven conflicts can lead to migration (Brzoska, 2016), because of the absence of a 'perfect' model, which is currently impossible, as the use of assumption generates flaws. Still, it is beneficial for researchers to keep exploring the different methodologies available for analysis regarding the nexus. Understanding the climate change conflict socioeconomic nexus from a humanitarian perspective leads to drafting dynamic policies to address the associated problems and implementing vital programmes to cater to the needs of the most vulnerable to the adverse effects of climate change.

If a model is well validated and representative, it can act as a powerful tool to generate a greater collective understanding of the mechanisms and drivers behind climate driven

migration leading to conflict and climate driven conflict leading to migration. Hopefully, this will enable better and more effective responses and appropriate mitigative action where practical. This can be a valuable contribution to qualitative studies, which have established a precedent for research on migration, conflict, and economic development for several decades (Levitt et al., 2007).

2.4.2 The possible part of migration as a means to adapt to the adverse effects of climate change

Sometimes, migration can be a part of the solution to adapting to adverse climate change effects (Hart, 2018). Some countries provide legal channels for voluntary migration by eliminating arbitrary restrictions on movement. This is echoed in the Foresight report (2011) (funded by the UK's Government Office for Science), which recommended the formation of policies that will promote and guarantee the legal movement of individuals, especially during times of adverse environmental predicaments. Policies like these can be categorised as responses to the negative impacts of climate change migration, aiming to avoid conflicts in both transit and receiving regions. (Kley, 2010; Spencer, 2003).

According to Diaz et al., (2005), the question we should ask ourselves is how we will respond to the issue of the changes in the climate instead of wondering if or when there will be a change. Diaz et al., went further, stating that institutions are important players that muster significant resources together, and in the process, what they act upon or do not act upon has an effect or impact directly or indirectly on the ecosystems, communities, and humans that are to varying degrees vulnerable and directly exposed. We must acknowledge and accept the catastrophe caused by climate change, seek solutions and plans, and implement those plans fairly and sustainably.

The development of adaptive mechanisms to help humans who are most vulnerable to climate variability should be encouraged and implemented. These include social and human

capital involvement, resource availability, and access to vital information (Diaz et al., 2005). It is also imperative for different research institutions to be involved, and civil society should be eager to help create the tools needed to fight climate change effectively. The tools used for effective adaptation measures and peacebuilding include research, education, dialogues, participatory planning and management, and targeted investment. Focusing on the local level can address the most severe consequences of climate change and the underlying causes of conflict. According to the Climate Change and Migration Coalition (CMC, n.d.; Randall, 2020), the foremost question is, 'adaptation to what extent?' This lies in identifying the adverse climatic effects that encourage migration, which is a highly risky endeavour. Often, the triggers can turn out to be environmental impacts such as flooding, desertification and drought, as indicated (Smit et al., (2001). Therefore, adaptation revolves around these critical adverse effects. To see adaptation as something deep-rooted in the causal chain of climate change stimuli is complex. For instance, in agriculture, an increase or occurrence of temperature or low precipitation effects, leading to drought that reduces crop yield and causes income to dwindle, may lead to people moving out to other areas less affected by the adverse effects of climate change, which in effect, is an adaptation (Smit et al., 2001). The UCCMC explained that, regarding a farmer's planting habit, adaptation might be to plant new hybrid produce, which is considered a diversification.

Adaptation might relate to changes in the number of farms on a global or regional level, and it may include a change in food traded patterns, be it national or international (Smit et al., 2000; pp.235-236). This leads us to the following question: how does adaptation occur concerning climate change-induced migration? Be it on a temporary or permanent scale, whether anticipatory, concurrent, or reactive. To this end, adaptation can be planned or independent (Smit et al., 2000). Leading to Carter et al., (1994) suggesting that planned adaptations need urgent decisions based on practical action and adequate policies (the

government), while independent adaptations are grounded in individual choice and decision-making. When it comes to climate change, policymakers (the government) are expected to plan and carry out adaptation programmes that address the needs of the people affected (Smit and Wandel, 2006; Bardsley and Hugo, 2010; Bettini, 2014).

In 2011, the UK government funded a project called Foresight in collaboration with the Asian Development Bank (ADB) (Foresight, 2011). The project focuses on the Asian and Pacific regions, using case studies to generate policy options for addressing climate-induced migration. As a kind of adaptation strategy required by vulnerable populations, the project's goal is to help the state enact policies that help facilitate voluntary migration (Foresight, 2011). Projects such as Foresight demonstrate that some governments/countries around the world encourage migration as an adaptation strategy (Bettini, 2014). The World Bank, as stated by Bettini (2014) in its 2010 yearly report, supports the idea that migration can be or represent an adaptation strategy for escaping the adverse effects of climate change, meaning that policymakers are now on the same page about the climate change-induced migration-adaptation connection, especially now that the adverse effects of climate change are being felt all over the world (World Bank 2010).

There must be a solid plan for adaptation to have an impact, and this depends on the ability or potential of a region, community, or system to plan well and adapt to the effects of changes in the climate. Smit et al., (2001) posit that it is necessary to have adequate adaptation plans that show a practical means of coping with the uncertainties and changes in the climate. A good plan in place regarding adaptation leads to a reduction in vulnerabilities to the adverse effects of climate change in this regard (Goklany, 1995; Burton, 1997; Cohen et al., 1998; Klein, 1998). Rayner and Malone (1998), Munasinghe (2000) and Smit et al., (2000) were of a similar opinion, positing that to reduce vulnerability to the impacts of climate change, adaptation needs to be integrated into new and existing national, sectoral and sub-national

policies and programmes, including development strategies, plans and provision of meaningful budgets. Therefore, adaptation is a crucial approach to responding to the adverse effects of climate change. Pre-planned adaptation strategies that involve social and economic systems are needed to deal with the risks of climate change effectively and are considered an essential complement to tackling migration based on firm actions. (Burton, 1996; Smith et al., 1996; Parry et al., 1999; Smit et al.,1999) (see Figure 2.3).

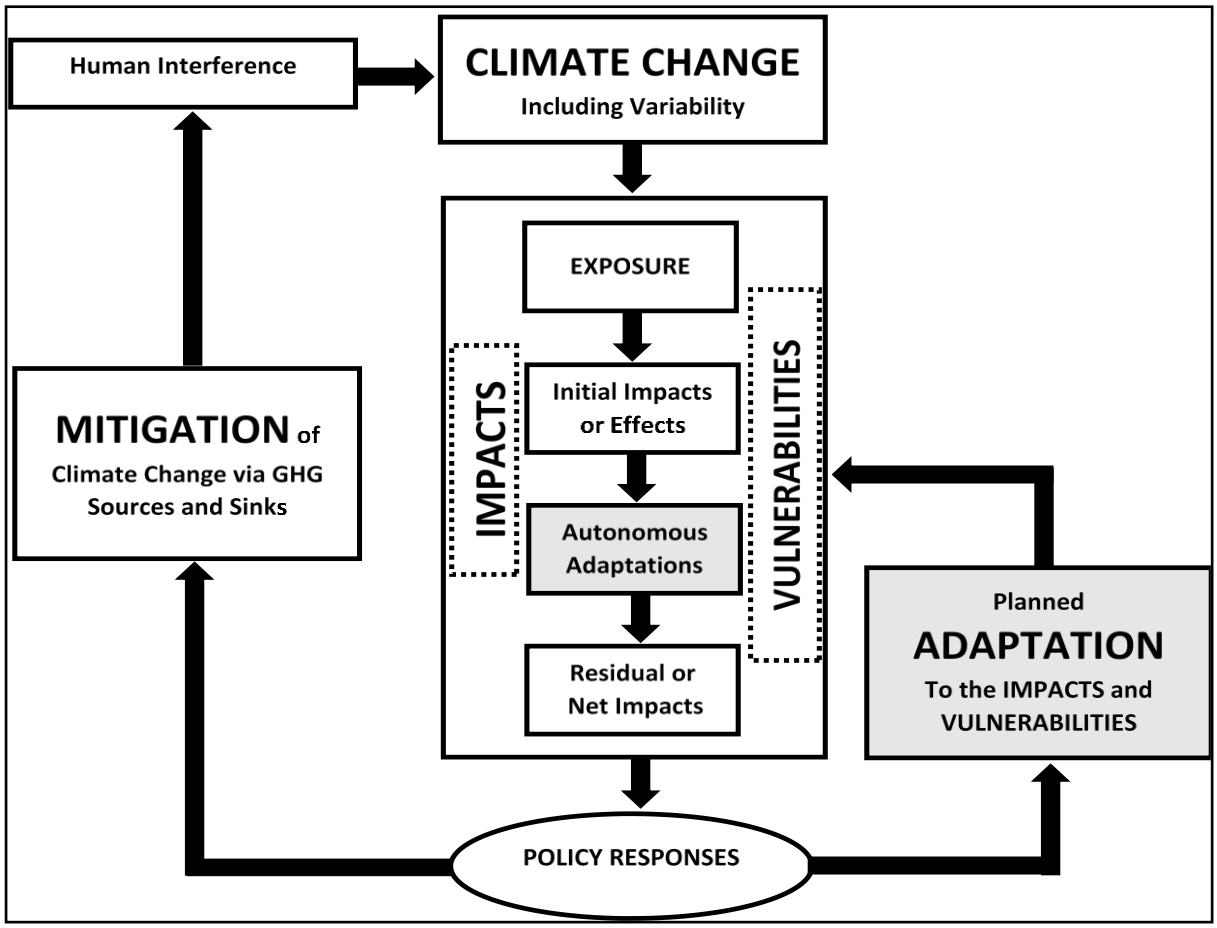

Figure 2.3: Positioning of adaptation in the climate change issue (Source: Smit et al., 1999).

The estimates or predictions of future adaptations are likely to be a crucial element of climate change and vulnerability assessment, as suggested by Smit et al., (2001, p.885). There is danger involved in the degree to which the future climate can change. Therefore, it rests intensely on the effectiveness and likelihood of the adaptations in that system. Studies on adaptation based on an assumption are more likely to underestimate the vulnerabilities and

impacts of climate change. Those who ignore studies on adaptation due to the adverse effects of climate change are prone to misjudge (Reilly, 1999; Reilly and Schimmelpfennig, 1999; Risbey et al., 1999; Smit et al., 2000). Therefore, adaptation is associated with sound understanding and knowledge (Ostrander, 2022). Additionally, there is a need to have excellent and helpful information regarding the conditions and situations under which different adaptations materialised.

Climate change has caused shifts in weather patterns and increased extreme events in various countries that rely heavily on rain-fed subsistence agriculture. This has led to households employing various risk-reduction strategies, including migration (Jaeger et al., 2010). Individuals and agro-pastoralists in Nigeria's drought-affected areas adopt coping measures such as selling assets, reducing food intake, and selling firewood and wild food plants in the village-sending region. Strategies previously only used during famines became incorporated into everyday livelihood systems (Meze-Hausken, 2000; Grolle, 2015).

When the adverse effects of climate change become unbearable, the next option available is migration (Ezra, 2001). In this case, temporary migration increased due to short hot spells and constituted a diversified livelihood strategy. Longer-term heat stress-induced permanent migration (Call and Gray, 2020). While these are adaptation approaches in the sending region, adaptation approaches in transit and receiving region differ, in that, because of hostility and conflict because of cultural differences and barriers with host communities, some migrants seek sojourn in other areas where they are much more welcome. As a result, they become nomadic in nature. This is common in Africa's Sahelian region (Marnham, 1979). Migration is confirmed as adaptive in a review of 30 empirical studies in Sub-Saharan Africa (SSA) by Vinke et al. (2022), and it is one of many livelihood adaptation options (Randall, 1977). Lucas (2015) suggests that unemployment-the desire to improve individuals' economic conditions, income disparities, resource accessibility, education, climate change, and violence

drives migration in developing countries.

2.4.3 Assessing Adaptive Capacity

Concerning climate change-induced migration used as an adaptation in this study, it is essential to discuss the adaptive capacity. Even though various studies apply the term "adaptation" to classify migration and environmental change, mainly within a range of rural livelihoods, adaptation strategies and responses to changing situations. Adaptation as a theoretical concept has received scant attention thus far in recent debates on migration and adaptation. (Dorlöchter-Sulser, 2012: p.186). Adaptive capacity is "the ability of systems, institutions, humans and other organisms to adjust to possible damage, take advantage of opportunities, or respond to consequences" (Willems, 2003; Diaz et al., 2005; Cinner, 2018). Cinner (2018) states that adaptive capacity is built across five key domains (see Figure 2.4).

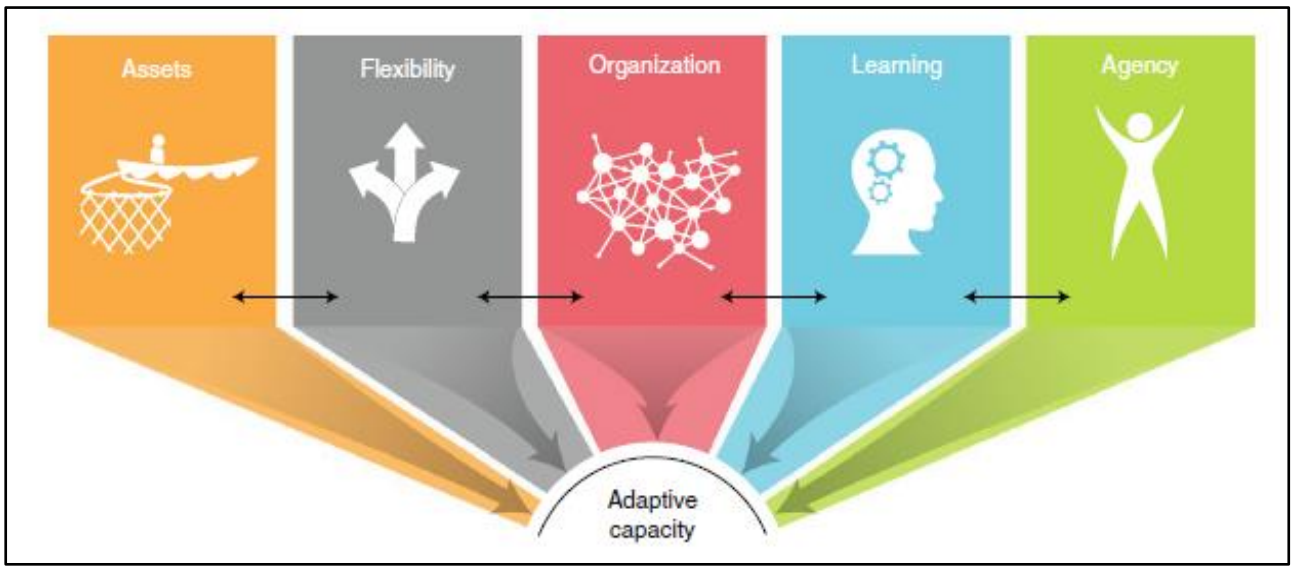

Figure 2.4: The Five interlinked domains of adaptive capacity to climate change: assets, flexibility, social organisation, learning, and agency. (Source: Cinner, 2018).

These are: (1) The assets people can draw upon in times of need-assets are the financial, technological, and service (for example, health care) resources people have access to. Assets can be individually owned or public goods. During times of change, people are generally better able to adapt when they have assets to draw upon. (2) The flexibility to change

strategies- the flexibility domain of adaptive capacity provides opportunities for switching between adaptation strategies while capturing the diversity of potential adaptation options. Adapting to climatic impacts is more manageable for organisations and individuals with more flexibility (3) The ability to organise and act collectively-social organisation is the domain of adaptive capacity that captures how society is organised to enable (or inhibit) cooperation, collective action and knowledge sharing.

By providing social support, knowledge and resources, formal and informal relationships between individuals, communities, and organisations can help people cope with change (4) Learning to recognise and respond to change-reflects on people's capacity to generate, absorb, and process new information about climate change, adaptation options, and ways to live with, and manage, uncertainty. The learning process can be experimental or experiential, and occur within and across various scales of organisation, space, and time. To successfully adapt to environmental change, people must not only possess assets, flexibility, learning, and social organisation, but also be empowered and free to mobilise these elements to actively shape their futures; and (5) The agency to determine whether to make a change or not, the fifth domain of adaptive capacity involves a sense of empowerment, a sense of motivation, and a sense of control, which are all related to an understanding of belief in one's own ability to perform and manage future situations. (Cinner, 2018). (See Chapter 2, subsection 2.3.1, page 69) for a complete discussion on agency concerning migration capability and aspiration of individuals.

The effective execution of adapting to the adverse effects of climate change rests on the abilities of individuals, communities and organisations to make and mobilise the adaptive capacity (AC) of their socio-ecological system. Making and mobilising AC is a continuous process that requires social learning (SL) (Thi Hong Phuong et al., 2017). Forms of adaptation can be anticipatory or reactive, autonomous or planned, and proactive or reactive, according

to (Diaz, 2004; Paavola and Adger, 2004), while Mendelsohn and Bennett (1997) opined that it could be precautionary or anticipatory. Williams et al., (2015) argue that in the fields of policy and academia, there is a growing understanding that adaptation capacity (AC) is crucial for societies to be ready for the negative impacts of human-caused climate change. Notably, public establishments are not solely or directly responsible for addressing the issue of climate change alone. The adaptive capacity of a public establishment should not be viewed as a capability to decrease exposure to climate change variability solely on its own. It should be regarded as a capability to carry out functions that aid the adaptive capacity of the public establishment's communities (Mendelsohn and Bennett, 1997; Williams et al., 2015). The central part of the strategy for mitigation regarding the Kyoto Agreement is rooted in the belief that, through internationally coordinated actions initiated by different countries worldwide, we can curb the adverse impacts of climate change, which, in essence, can address the issue of migration being used as an adaptation.

Based on Dell et al., (2012) findings, results show that higher temperatures significantly reduce economic growth in developing countries, reduce growth rates, not just on the output level, and have wide-ranging effects by reducing agricultural and industrial output and political stability. Once people in certain areas experience high temperatures that lead to drought, it leads to the problem of experiencing a shortage of water vital for farming. Once this is hard to come by, people migrate to areas where water is available in abundance, adapting to the situation they find themselves in (see Appendix B, p.443, for a table presentation of the findings of a systematic review of 160 peer-reviewed publications on climate migration). Ionesco et al., (2015) noted that, because of the adverse effects of climate change, evidence shows that climate migration is already being used as an adaptation strategy. There is also consensus that the future may see the emergence of areas where combinations of exposure, sensitivity, and adaptive capacity put whole communities at risk (de Sherbinin,

2014). People have moved and will continue to move from environmental hazard zones in search of habitable areas conducive to sustenance, which is an adaptative move (de Sherbinin et al., 2012; Geddes et al., 2012). Changes in climate patterns will increase seasonal and rural-to-urban migration (Ammer et al., 2016), the most significant is internal migration (Foresight, 2011; McLeman et al., 2016; Groschl and Steinwachs, 2016).

Adapting to climate change helps affected individuals deal with the repercussions of the changing climate, which are almost impossible to avoid (NASA, 2022). This means that necessary actions should be taken to ensure that the risks of climate change are controlled and that the impact of the changing climate on a nation's economy is minimised (NASA, 2022). This is rarely the case, especially in some developing countries where the government is corrupt and would rather lavish the public's commonwealth on themselves than see to the people's plight/affected by climate change.

2.4.4 Challenges of climate-induced migration as adaptation strategy I: Resource contestation in sending and receiving areas

Contestation over access, use, and control of resources – are central to policy debates on global development (Huff et al.,2023). In their study, Van Bronkhorst and Bousquet (2021) highlighted the significant influence of climate change on societies, particularly in fragile settings where governments face resource constraints in assisting their populations with adaptation. The negative impacts of climate change, including water scarcity, crop failure, food insecurity, economic shocks, migration, and displacement, lead to resource contestation. In other words, it can act as a threat multiplier both in the short and long term by increasing competition for scarce resources, reducing economic opportunities and social cohesion, and straining public institutions and trust in the state (Van Bronkhorst and Bousquet, 2021).

The patterns of economic activity in rural communities and the struggle for survival can cause contestation for resources, leading to conflict among groups. Water and fertile

farmland are essential resources for agricultural activities in sending and receiving regions. When access to these essential resources is hampered, or the little that remains is contested for whether in climate affected or receiving areas, there are bound to be violent conflicts (Van Bronkhorst and Bousquet, 2021).

Natural resource disputes threaten the state's peace, security, and economic development (Chatham House, 2023). Natural resources can be a source of resentment due to the inequitable distribution or benefits, lack of opportunities for marginalised groups, or environmental and social harm caused by unsustainable resource extraction (*Ibid*). Farmers in Achianse, Ghana, for example, who migrated to escape ecological stress in their place of origin Asafotu in the Volta Region communities due to a prolonged drought that made farming impossible in their place of origin were not allowed access to resources-water and farmland by the people of the host community migrated to, which can be attributed to cultural differences, with the people of the host community seeing them as a threat to their livelihoods (Torvikey, 2021). This is common in some parts of the developing world.

It is essential to understand that issues of access and distribution are important in the context of resources-land and water and people's power relationships with it (Viljoen et al., 2006: p.2). This is where the issues of poverty and inequality come into play regarding resources. Poverty is characterised by the inability of individuals, households or communities to command sufficient resources to satisfy a socially acceptable minimum standard of living, while inequality refers to a state of social organisation in which access to resources and opportunities is unevenly apportioned leading to contestation (Urmilla, 2010). Bob et al., (2008: p.28) state that inequality is often a consequence of political, economic and social processes that concentrate resources in certain hands at the expense of others, and not helping matters is the problem of adverse effects of climate change that makes an area less livelihood conducive that the other. This can be exacerbated when there is no political goodwill to nip

the problem in the bud.

Sub-Saharan Africa has a history of land dispossession and contestation, resulting in various inequalities and a skewed distribution of land resources. Land in Sub-Saharan Africa has been subject to conflict, conquest, expropriation and exploitation, thus resulting in many land conflicts that exist today. (Huff, Naess, and Littler-Handlos, 2023). Reuveny (2007: p.656) cites several examples of resource contestation over land escalating to conflicts due to environmental migration. For instance, in Africa, 600,000 people moved from central/northern Ethiopia to the southwest/west regions because of drought and famine in the sending region, which resulted in nomad-farmer conflicts over land in the transit and receiving region. During the early 1990s in Rwanda, 1,7 million people moved from the central areas and rural south to northern Rwanda and Zaire as a result of resource contestation-land and water scarcity leading to ethnic conflicts and genocide (Urmilla, 2010). De Soysa et al., (1999) explain that prevention of access to resources causes livelihood problems, increasing the risk and the likelihood of some affected people joining armed groups to access resources. Important studies show that over 40 per cent of internal armed conflicts over the last 60 years have been linked to natural resources contestation, and these risks will only grow as climate change and environmental degradation exacerbate scarcity aided by population growth (United Nations, 2018).

2.4.5 Challenges of climate-induced migration as adaptation strategy II: Conflict

The term conflict is used in various contexts, and as such, it necessitates some explanation or a working definition. Chaphin (1979) defines conflict as "the simultaneous occurrence of two or more mutually antagonistic impulses or motives." Conflict, as defined by Wilson and Hanna (1979), is a "struggle that arises when there are opposing ideas, values, or a scarcity of resources." Carl Deutsch (1973) defines it as an action that interferes, injures, prevents, obstructs, or renders ineffective another action deemed incompatible. In essence,

conflict is a dispute, disagreement, or controversy between two or more individuals or groups, resulting in a disharmonious interpersonal or intergroup relationship or, in extreme cases, a violent display of aggression.

Because of inadequate governance structure, climate change poses a significant threat to global peace and security, and its impacts are predicted to affect the world's most vulnerable communities disproportionately. Denton (2015) states that historically, local institutions have been responsible for mobilising and regulating resources, while traditional authorities have been responsible for preventing and resolving conflict. However, due to the severity of climate change and the introduction of new governance mechanisms, local institutions have lost their authority to protect communities through formal and informal arbitration mechanisms. Institutions must undergo a renewal process to become fit for the purpose of managing climate-related conflicts (Denton, 2015). Pahl-Wostl (2009) argues that climate variability exposes the vulnerability of current environmental resource regimes, and it is a phenomenon that will exacerbate existing conflicts and create new ones. Climate change has exposed institutions' (governments) inability to manage the scale and severity of conflict. Local institutions play an important role in reducing vulnerability and increasing resilience, but the lack of coordination with the central authorities is making the task of reducing vulnerability to the adverse effects of climate change difficult.

Climate change will significantly affect society, especially in vulnerable regions where governments lack the resources to address and support their communities in adapting. In the Sahel, the situation has worsened because of more extended periods of drought, growing insecurity, and more restrictions on the movement of herders. Traditional methods of managing herds in some African countries, even though outdated, have been seriously disrupted, leading to an increase in both the frequency and potential severity of conflicts (Werz and Conley, 2012).

A primary causal mechanism links climate change with conflict (Werz and Conley, 2012; Eberle et al., 2020) (see Figure 2.5). Ineffective responses to climatic change that affect the replenishment of natural resources lead to competition for resources and open the door for conflict, which is currently being witnessed in many parts of the world (Usip, 2018).

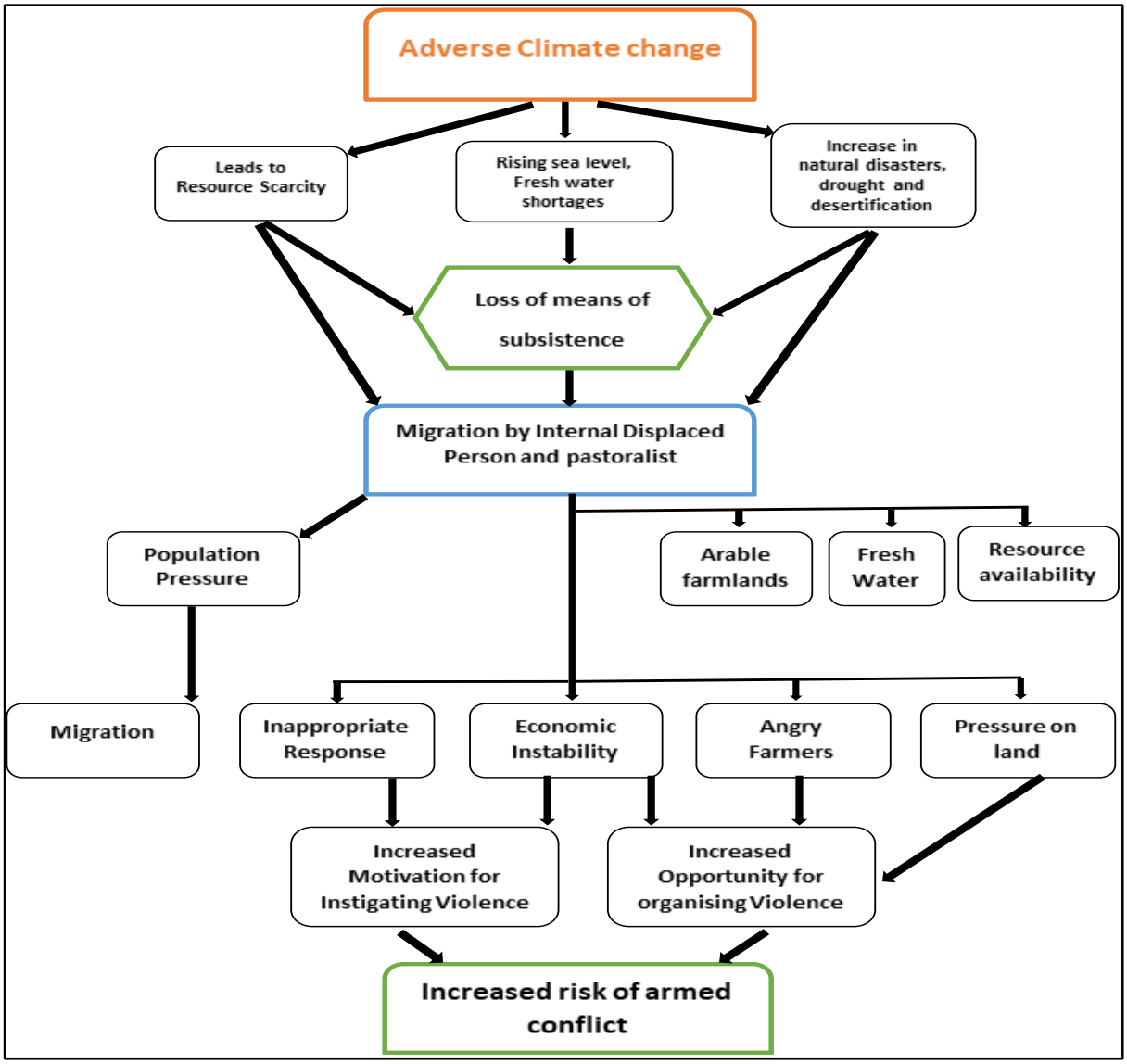

Figure 2.5: Pathways to climate conflict. Adapted and remodelled. (Source: Odoh and Chigozie, 2012).

Negative secondary impacts may follow, such as sickness, hunger, and unemployment. The developing nations' development plan also does not recognise the economic threat caused by climate change. Livelihood activities in arid zones are being increasingly and severely affected by the adverse impacts of climate change. Climate change is an unprecedented threat

to food security (sustenance of livelihoods) (Werz and Conley, 2012; Eberle et al., 2020). The ability of arid regions to supply water is directly impacted by the rise in extreme hydrological events brought by climate change, raising concerns for the safe operation of major projects.

The impacts of climate change are felt most intensely by the poorest and most vulnerable communities, especially those living in fragile and conflict-affected areas. These impacts exacerbate migration, putting pressure on natural resources in the host communities, which might lead to conflicts (Castles, 2007) and is probably transferred to other parts of a country if not nipped in the bud. When resources are disputed, it leads to tension and intolerance (Crisp and Dessalegne, 2002). The best strategy to counteract these negative impacts is to curb migratory flows to avoid conflicts. This can be achieved by reducing the significant vulnerabilities of individuals and the affected communities through adequate measures that involve mitigation and adaptation programmes (Martin and Widgren, 1996).

Reuveny (2007) posits that climate change-induced migration can lead to conflict through four synchronised channels. Conflict is more likely when two or more of the following channels work together under certain assisting conditions;

(a) Competition

Environmental migrants can strain the receiving area's economic and resource base, encouraging native emigrant competition for resources. The number of migrants and residents is expected to increase, especially when resources are scarce in the receiving area and property rights are underdeveloped. The excessive demand for resources can cause lateral pressure, which refers to the expansion of economic and political activities beyond the borders of a region or state. This expansion is driven by the need to access resources, but raises the risk of conflict.

(b) Ethnic tension

When environmental migrants and home community people are from different ethnic

groups, in-migration can cause conflict. Home community individuals may feel threatened, host countries may fear separatism, migrants may seek reunification with their home country, and home community people may respond aggressively. Conflict is more likely in long-standing ethnic disputes between migrants and host community people.

(c) Distrust

Environmental migration may cause distrust between migrants' origin and destination areas. For example, the receiving government may suspect that the origin government is attempting to infiltrate the host. In contrast, the origin side may resent the actual or perceived mistreatment of migrants by the receiving government.

(d) Fault lines

Conflict could also could be traced to existing socioeconomic fault lines. Migrant pastoralists and resident farmers, for example, may compete for land, or migrants and host community people may compete for jobs. In this regard, migration from the rural to urban areas is a fault line with competing effects.

It showed that while developed economies can absorb migrants in various sectors, underdeveloped economies, which rely on the environment for survival, are constrained, especially if resources are scarce. Political instability and civil strife in the receiving area increase the likelihood of conflict. Migrants, for example, may join antagonising groups or escalate violence through any of the aforementioned channels (Reuveny 2007). In this case, “all things being equal,” the forces promoting conflict in the receiving area may be more potent (Reuveny, p.660.).

Reuveny (2007) suggests that when migration flows are controlled, migrants can be easily absorbed, reducing the likelihood of conflict. Thus far, climate change has led to gradual alterations, but it is predicted to bring about more frequent and severe weather variability. Also, sudden changes of this magnitude can force many people to migrate, especially if they

rely on the environment for a living. When large numbers of migrants arrive in search of habitable areas, and lack shared cultural values, it often leads to conflicts (Sayne, 2011). In light of this, it can be argued that there are security challenges concerning uncontrolled migration, as the host community will be overstretched because of a massive influx of people. Toulmin (2009) and Deonarain (2014) attribute the escalation of conflicts, particularly in vulnerable regions, to the strain on resources (Onuoha, 2010). To develop a workable adaptation strategy in response to resource scarcity and conflict caused by climate change-induced migration, governments around the world must take into account social, physical, economic, and political factors (Sayne, 2011). People usually change their lifestyles or opt to migrate when access to basic needs such as shelter, food, and water is limited (Onuoha, 2010).

Responding effectively to climate change, resource scarcity and violent conflicts in affected regions is vital in preventing affected regions vacated from being an ungoverned space where unscrupulous elements make us of to perpetrate heinous activities (Sayne, 2011). There should be an adaptive response that entails peacebuilding concerning conflict. Issues such as resource competition, toxic relationships, and youth unemployment are measures that stakeholders need to cooperate on in actively addressing resource conflict. In areas where there is relative peace, adapting in the right direction can foster social and economic unity to prevent future violence. While achieving these goals may be challenging, actions focused on assisting communities in adapting to the negative impacts of climate change offer valuable opportunities and can help prevent conflicts (Sayne, 2011). According to Obioha (2008), the adverse effects of environmental variability can cause problems that are likely to result in conflict between migratory groups and host communities, escalating into insecurity that can destabilise a country. Adequate provisions must be made to accommodate all segments of the society affected to limit the likelihood of conflicts that may arise from climate-related migration, including the communities displaced persons migrate to.

The United Nations emphasised the importance of states developing their leadership and management competency in natural resource matters to avoid conflicts and foster peace and cooperation between regions. The competition for land, water, minerals, and other natural resources is expected to contribute to conflicts unless there is an increased focus on their management for the benefit of local communities, fostering peace through equitable sharing (United Nations, 2018).

2.4.6 Deliberating on the convoluted path to climate change conflict

The convoluted path to climate change conflict can be illustrated using the conceptual framework below (see Figure 2.6). Based on this framework, climate change leads to the loss of livelihoods for individuals, farmers and herders because of drought and desertification.

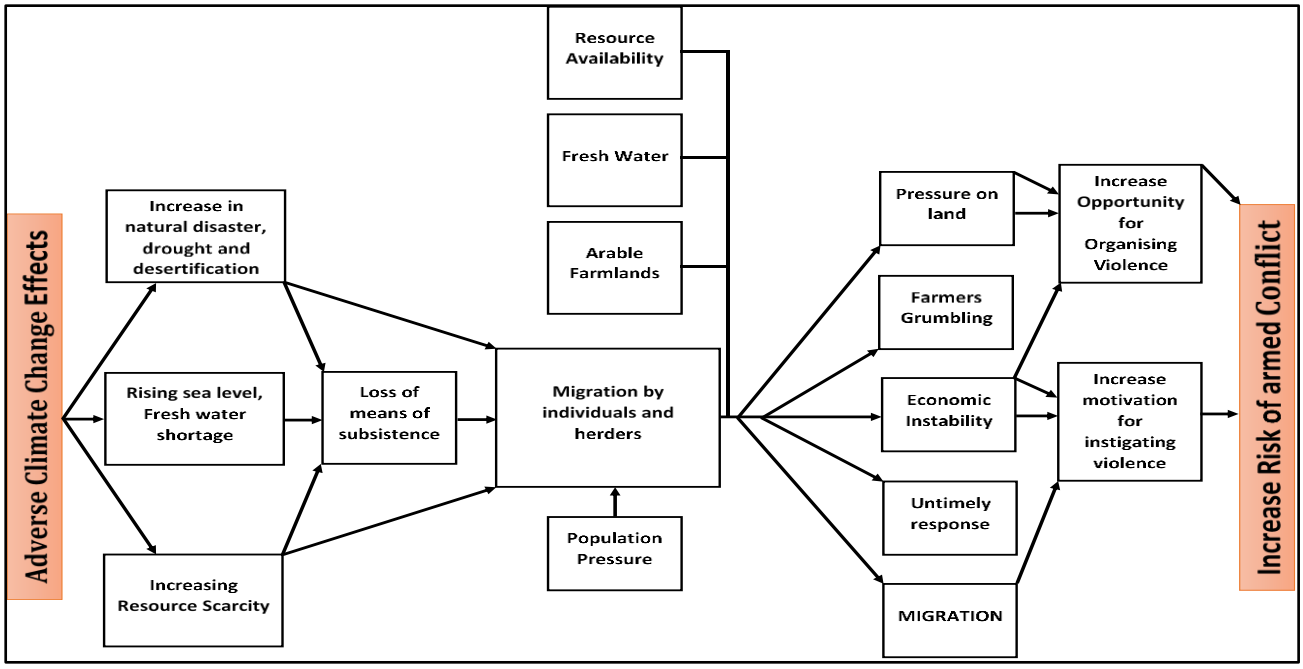

Figure 2.6: Conceptual framework illustrating the pathway to climate change conflict. (Adapted from Furini, 2019).

The loss of essential resources caused by climate change has affected farmers (land and water sources) and herders (pasture and water sources). The availability of these resources influences the migration decisions of individuals, farmers and herders, which often leads to pressure and competition for limited resources, leading to conflicts (Furini, 2019).

This conceptual framework offers a new perspective on how resource scarcity can trigger conflict, contrary to the standard explanation that conflicts between farmers and herders are ethno religious. This leads to the suggestion by Dyson (2005), who states that it is probable that the most critical problem associated with future climate change for human populations is agricultural production, mainly in the world's tropical and semitropical regions. Dyson noted that food production in these regions is an activity that will find it challenging to adapt to a fast rise in temperature, and will almost certainly not be able to cope with any abrupt climate change. In the real sense, this will lead to a decline in food production and, in essence, result in significant rises in food prices, with very noteworthy sociopolitical consequences.

When adapting to climate change's impact on water resources, there are three main options: increasing supply, decreasing demand, and enhancing establishments' flexibility (IPCC, 1995). One of the vital responses to the adverse effect of climate variability on water resources includes increasing the supply for human use (SSCAF, 2003). It also involves clear plans that bring about sound and promising investments in infrastructure and engineering, including large-scale irrigation systems and modern fit-for-purpose water dams and wells.

The connection between resources and conflicts has been a point of discussion in the academic sphere for a long time (European Union Commission, 2013). Resources are essential; in this regard, access to or control of these vital resources, such as water and land, to sustain livelihoods has always resulted in brutal clashes within and between countries. Research on resource conflicts reveals that some of the most significant conflicts arise between groups over essential natural resources such as land and water (Farmer, 1987). It shows that people’s and countries’ sources of income revolve around the resources they are blessed with, which is the main reason there is rivalry for these resources, and the cause of so many violent conflicts in some parts of the world.

Strikingly, regarding conflicts, especially in Africa, the overwhelming cause is

resource contestation borne out of frustration of not having access to resources, leading to aggression, and using force to gain access in the communities where resources such as water, grass to feed livestock and fertile land for cultivation are plentiful (Masari, 2006). (See Chapter 2, subsection 2.2.2, page 61 for Eco-violence, and subsection 2.2.3, page 62 for Frustration-Aggression theories concepts). For example, regarding the situation in Lake Chad Bowl, on the sides of Nigeria, Chad, Niger, and Cameroon, the four countries whose inhabitants use the lake to make a living, water is the cause of conflict (Fielmua et al., 2017). For a long time, the lake has been a livelihood source for over 20 million individuals in the four countries.

It is apparent that climate change has contributed to the limitation of this vital resource, water, and created a contest for it among ethnic tribes. Apart from the competition over the lake water, there is competition for rural areas offering favourable climatic conditions. The movement of people to these arable lands poses a significant threat to the host communities. Climate change is the most significant long-term driver of water shortages worldwide (IPCC, 2007). Evans (2011) states that the current rates at which water is being extracted from rivers, lakes, reservoirs, creeks, streams, and other sources are already unsustainable in many parts of the world because of excessive extraction. The explanation went further, stating that 1.2 billion people live in water basin areas, but have water scarcity problems, projected to rise from 50% to 1.8 billion by 2025. To clarify, a staggering two-thirds of people worldwide live in regions with limited water availability. The preservation of rivers, lakes, reservoirs, creeks, and streams is of utmost importance.

This leads us to a brief discussion on land and conflicts nexus. UNIFTPA (2012) posits that land includes “the surface of the earth, the materials beneath, the air above, and all things fixed to the soil. Land is composed of both rural and urban areas according to Powelson (1987), including land holding that pertains to the ownership or leasing of a specific parcel of

land (AIR, 1949).

Resolving land conflict: According to Lombard and Rakodi (2016), for us to comprehend and explain land conflicts, a proper examination is needed concerning the roles played by various individuals, groups, and collective actors and their connections at different stages. These connections may be harmonious or antagonistic (Van Leeuwen and Van der Haar, 2016). Thus, to tackle the underlying reasons for conflict, particularly those resulting from the adverse impacts of climate change, such as drought and desertification, which lead to unequal land access, it is crucial to prioritise substantial land reforms in developing nations. For the land reform to be successful, it must be 'market-assisted' and "government-led," and it requires sustained political consensus, financial commitment and measures to mitigate the risks associated with such reforms (UNEP, 2012).

Additionally, it must involve the reimbursement of land rights, the preferred option for restoring land rights after an internationally recognised conflict (Christopher, 1995; Unruh, 2014). When it comes to historical land-related grievances or ongoing disputes that have resulted in the displacement of many people, it is crucial to handle the situation with care to avoid perpetuating past injustices or creating new ones. A systematic approach is needed regarding land grievances and conflicts (Christopher, 1995; Unruh, 2014). The three essential components in resolving land disputes are the following:

(i) Emphasis must be placed on understanding and addressing both immediate land-related conflicts and the underlying grievances;

(ii) Developing and applying an inclusive institution and capacity-building approach;

(iii) Monitoring, assessing, and knowledge of the disputes' related system/organisation is imperative (UNEP, 2012).

UNEP explained that these inclusive and methodical strategies would help reduce conflicts, grow the economy, and ensure that the law of the land is well respected

concerning landed property issues. Legal frameworks[4] for understanding the dynamics of land-related conflicts and solving them are also imperative. The framework outlines five important stages in the conflict resolution process. (See Figure 2.7) for conflict settlement, the international action cycle vital for the mediation process.

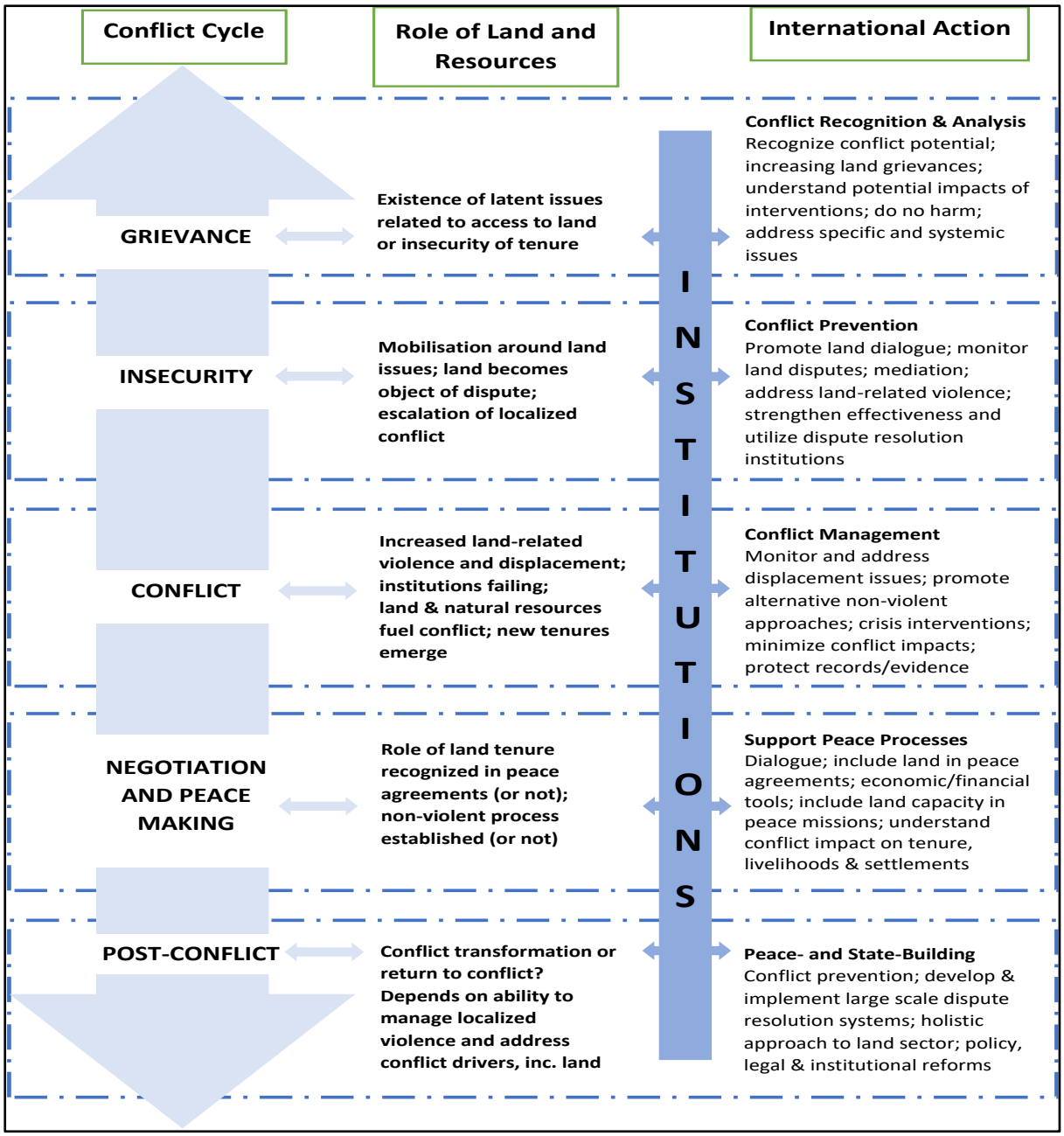

Figure 2.7: Conflict settlement international action cycle. (Source: UNEP, 2012).

[4] This is a core component of legislation, including institutional, administrative, political, social and economic conditions or arrangements which make legislation available, accessible and enforceable. To become official, legislation must go through a rigorous bill process and review before being signed into law. Legislation can have many purposes: to regulate, to authorise, to outlaw, to provide (funds), to sanction, to grant, to declare, or to restrict.

Mediation is an assistance provided to two or more cooperating parties by third parties who typically do not have the authority to enforce an outcome but do so in a persuasive and reasoning manner without being biased in a way that parties involved will agree on amicably (Wall et al., 2001, p. 370; Kressel and Pruitt 1989; 2010). As posited by Wall et al., (2001, p.371), mediation is one of the oldest forms of conflict resolution worldwide, and its relevance cannot be brushed aside.

Carefully designed plans and international support can effectively move contending parties towards a more peaceful settlement regarding land conflicts. Conflict prevention and conflict management are strategies that are frequently used during situations of rising insecurity. In the event of a dispute, development approaches may be complemented by humanitarian assistance (UNEP, 2012). In the aftermath of a peace agreement (see Figure 2.8), wide-ranging post conflict strategies may be deployed.

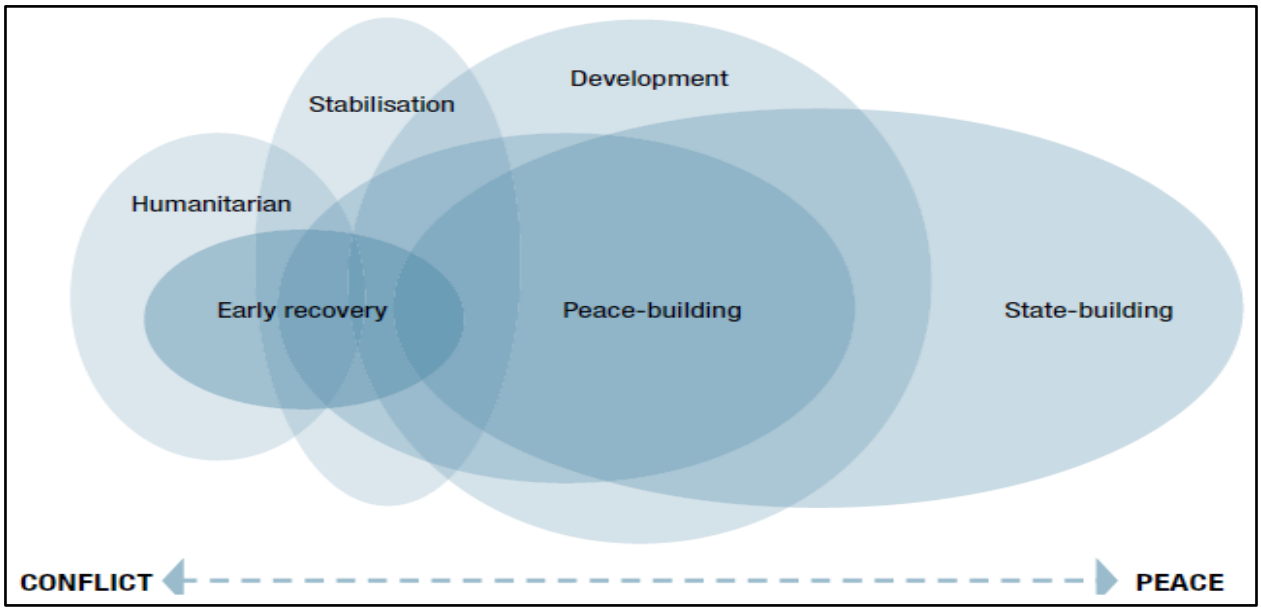

Figure 2.8: Post conflict strategies. (Source: Alhawary in Bailey and Pavenello, 2009).

With protracted conflict, international assistance may take the form of large-scale peace-building or state-building interventions, often under U.N. auspices. International experience with systematic approaches will yield positive results in solving land-related

conflicts.

Land policy reforms and designated programs implemented in the 1970s and early 1980s in several countries, particularly in the developing world, did not meet the anticipated outcomes expected by the UN regarding conflict issues (Werhamann, 2008). The absence of appropriate policies is one of the reasons climate change leads to land disputes in the developing world. As people move from place to place in search of fertile land for agriculture, they occupy other people's land by force, which is unacceptable in modern times (Mwesigye and Matsumoto, 2013). This was a prevalent practice in earlier times, particularly in developing nations, as many countries had not yet established the necessary laws to address and regulate the situation. Consequently, it led to several conflicts (Werhamann, 2008). An example is the conflicts that arose in the Middle Belt of Nigeria in 2018 between the herders and the farmers, whereby the herders migrated to host community towns and occupied farmer's land by force (Kwaja and Ademola-Adelehin, 2018).

The other principal method used to counter conflicts resulting from land issues in Africa is the African Union[5] (AU) setup of The Great Green Wall Initiative (UNCCD, n.d.). The overall aim of the GGW is to bring succour to the Sahel, which has been devastated by climate change, through robust ecosystem management and sustainable development of natural resources (water, soil, vegetation, fauna, and flora), protecting tangible and intangible rural heritage, the development of rural areas and sustainable development hubs, and the improvement of the living conditions and livelihoods of people living in these areas (UNCCD, n.d.; Katsina, 2018). The Green Wall initiative is expected to counter desertification in Sahelian countries and curb the migration of pastoralists from this area to other parts in search

[5] The African Union (AU) is a continental union of 55 member states located on the continent of Africa. The bloc was founded on 26 May 2001 in Addis Ababa, Ethiopia and launched on 9 July 2002 in Durban, South Africa. The intention of the AU was to replace the Organization of African Unity (OAU), established on 25 May 1963 in Addis Ababa by 32 signatory governments. The most important decisions of the AU are made by the Assembly of the African Union, a semi-annual meeting of the heads of state and government of its member states (UNCCD, n.d.).

of water and fertile lands (Chris et al., 2018; Katsina, 2018). (NEST, 2003; UNDP, 2011). If adequately implemented, this initiative will help guard against land and resource related conflicts.

2.5 Summary

Environmental change, migration, and adaptation have garnered significant attention from the global media, resulting in many educational writings and reports from international institutions. It is one of the hot topics discussed in the 21st century. This chapter examined the interplay between previous research on climate change and migration use as an adaptation strategy to sustain livelihood, delving deeper into how in-migration to certain areas leads to resource competition and violent conflicts. Additionally, it discusses the concepts of the three frameworks adopted for this study: Sustainable Livelihood (SLF), Eco violence (EV) and Frustration aggression (FA) and other issues surrounding climate-induced migration and adaptation strategies, both at the domestic and international levels. Multiple studies have failed to provide a clear and compelling explanation concerning the connection between climate change-induced migration use as an adaptation strategy, resource contestation and conflicts. This study justifies the importance of filling this gap through an extensive literature review by identifying the relationship between migration as an adaptation strategy to the adverse effects of climate change, namely drought and desertification, resource contestation and conflict in Nigeria. Also, the ideas presented in this chapter applied to the northern Nigeria context. (See Chapter 1, section 1.4.3, Effects of climate-induced migration in Nigeria). In order to provide contextual background to the rest of the thesis, the out-migration of individuals from northern Nigeria is important.

Chapter 3: Methodology

3.1 Introduction: Philosophical underpinnings of the research

Importantly, my research philosophy or paradigm serves as the study's foundation. It directly impacts my research methodology, including research design, data collection and analysis techniques, and how results are interpreted. To this extent, there is a need to be clear about the research's philosophy to achieve this thesis objective. This needs the explanation of two distinct philosophies, of which the appropriate was selected and applied in this study. The distinction between positivism and interpretivism in research philosophies is frequently made (see Bryman and Bell, 2007; Hughes and Sharrock, 1997; Travers, 2001). Bryman and Bell (2007) posit that it is delicate to equate positivism with science. According to Travers (2001), one key concept of positivism is researchers' ability to analyse social behaviour objectively through scientific observation. Research grounded in a positivist philosophy is naturally based on deductive theorising, in which numerous plans are generated for testing, and practical corroboration is sought (Babbie, 2005). In this regard, a considerable amount of data is often needed because a positivist study would favour using quantitative methods to analyse an extensive phenomenon (Travers, 2001).

In contrast, interpretivism offers a different perspective on the world. Interpretivists believe that the social sciences' subject matter-people and their institutions fundamentally differ from that of the natural sciences (Bryman and Bell, 2007). As a result, studying the social world necessitates a different logic of research procedure (Bryman and Bell, 2007, p.17). The researcher's role should be to explore the various interpretations of a particular phenomenon (Hughes and Sharrock (1997, p.102; Easterby-Smith et al., 2002).

In this research, the philosophy guidelines of Saunders et al., (2012) were adhered to. The interpretivism approach addresses the source, nature and development of knowledge, delving deeper into how data about the phenomenon under study were collected, analysed and

applied, and at the same time, using this philosophy to explain the objectives of this study in collaboration with the three most suitable theories chosen for this study. For this study, interpretivism is appropriate because the researcher explained the phenomena, climate change-induced migration, adaptation, resource contestation and conflict issues based on the existing researched literature. The interpretivism philosophy refers to the epistemology, which states that researchers should be aware of human differences in relation to their roles as social actors (Saunders et al., 2009, p.116).

This research philosophy is based on the researcher's interpretation of human social roles concerning the set of meanings of the research study. Saunders (2009) asserts that the importance of interpretivist philosophy is grounded in the researcher's willingness to adopt an empathetic stance. In this regard, it is imperative that the research subject and the environmental understanding are paramount to the researcher in achieving desirable objectives. (Saunders et al., 2009). This is necessary given the ecological, socio-contextual, and historical nature of the phenomenon under investigation, climate change-induced migration to Nogoa, Makurdi, Benue State, Nigeria, used as an adaptation strategy to sustain livelihoods by people from the northern part, leading to resource contestation and conflicts. The subjective nature of the aggregated experiences of the target populations, as well as the geo-ecological attributes of the study area was explored.

The interpretivism approach adopted helps the naturalistic data collection approach through interviews, focus group discussion and observation. Meanings start to emerge as the research process unfolds. With the adoption of interpretivism, areas such as cross-cultural historical, temporal, cultural, and subjective differences that exist in multiple forms as representations of reality were studied in greater depth. The main data collected was highly reliable. The interpretive paradigm enables the researcher to focus, recognise and narrate the meaning of human experiences and actions efficiently (Fossey et al., 2002).

Thus, it is important to apply the grounded theory. Incorporating the grounded theory provides a means of constructing methods to understand better the situations in which humans find themselves (Glaser and Strauss, 1967). Glaser and Strauss put to rest the criticisms of qualitative research as unscientific and lacking rigour (McCann and Clark, 2003), explaining that the grounded theory cemented the quality of qualitative approach rooted in ontological critical realism and epistemological objectivity, that applies to this study (Annells, 1997). (See Chapter 3, section 3.3 and subsection 3.3.1, pages 125-128, for a complete discussion on the qualitative approach applied in this study).

The goal of discovering an emerging theory that fits this study and works to explain basic social processes understanding was achieved. The fit, work, and understanding criteria show how close to the truth the theories adopted are in filling gaps and contributing to knowledge in this study (Glaser and Strauss, 1967). As a result, in acknowledging the work of the researchers cited, the ideas presented in the literature review (in Chapter 2, section 2.2, page 56) were developed into a theoretical framework and presented in the following section 3.2. Also, the research design and approach, including data collection and analysis methods, are all considered part of this thesis methodology, and are detailed in this chapter.

3.2 Developing a theoretical framework

To explore how climate change may affect Nigeria migration system as an adaptation leading to resource contestation and conflicts, it is vital to develop a theoretical framework that will guide data collection and help frame the analysis. Thus, the eclectic approach that combines two or more frameworks is deemed appropriate for this study. Innumerable academic researchers acknowledged and laid emphasis on the advantage of an eclectic approach that combines two or more frameworks deemed appropriate for this study (Johnson and Onwuegbuzie, 2004; Khan, 2013; Richards, 2017). Khan (2013) further explains that the relationship between the environment and societal issues is multidimensional, involves

diverse elements, and requires an eclectic theoretical approach. The eclectic approach is a method that can be used in combination with other approaches and methodologies to explain the concept of climate change as a factor for migration adaptation strategies, resource contestation and conflicts. In this regard, three significant theories were borrowed and employed to explain this phenomenon.

This research combines three theoretical persuasions as convergent theoretical anchors developed by environmental and migration academics, which are; the Sustainable Livelihood Framework (SLF), Eco-Violence (EV) and Frustration Aggression (FA) theory adopted from an earlier discussed theories to understand climate-induced migration used as an adaptation strategy leading to resource contestation and conflict, vital in making sure that the work of this study is adequately informed and contributed to knowledge vis-à-vis addressing gap of establishing who migrates; why they migrate; the types of mobility they employ; what sustains migration streams; and why they choose specific destinations over others. In this study, a town called Nogoa, Makurdi, Benue State, Nigeria. Also, the three theoretical frameworks adopted guide data collection and help frame analysis.

These three frames outlined and aided our understanding of how climate change-induced migration used as an adaptation strategy leads to resource contestation and conflict. The extended outcomes of these interconnected frames are seen in the effect of environmental change on primary and secondary population movements. This is central to explaining the dissipation of tension through rural-urban migration. When considered as an integrated lens for understanding conflict transformation, the relationship between climate change, declining rural economies, population movement and security in primary and secondary migrant receiving areas is not far-fetched. Whether this linkage manifests through environmental declines or secondary vulnerabilities such as resource contestations and push functions from affected areas, the environment-security dynamics are apparent (Baron, 2006; Kennedy et al.,

1998).

Using these frameworks in this study is novel. Several studies have adapted them individually or combined to demonstrate the links between environmental variability, migration, resource contestation or conflict. An important defining element, however, is the robust exploration of appropriate and systemic factors that give empirical validity to the operationalisation of these theories.

3.2.1 Sustainable Livelihood Framework

Applying the Sustainable Livelihood Framework (SLF) in this study is guided by a strong commitment to prioritising the needs of those who face barriers to their livelihoods. Sustainable livelihood strategies are important elements of a migration system, even though it is described as “a complex of interacting elements" that connect a pool of potential migrants in a sending region with people and opportunities in the receiving area (Mabogunje, 1970: p.4). In this regard, the fundamental concept of the SLF is the 'sustainable livelihood', a livelihood that can “cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long-term”. (Chambers and Conway, 1992a: p.7). Everyone wants a comfortable life and plans their livelihood considering their available capital and resources - livelihood is the management of sustaining life. ‘Livelihood’ refers to the capacities, goods, capital, and activities needed to live (Chambers and Conway, 1992: p.296; Serrat, 2017).

According to the Food and Agricultural Organisation (FAO), livelihood is sustainable when it can cope with and recover from any adverse situations and sudden shocks, like a disaster, and maintain or enhance its capabilities and assets both now and in the future without undermining the natural resource base (FAO, 2009; Serrat, 2017). People adopt different strategies to improve their livelihood, such as higher education and skill development, capital

investment, or strengthening socio-political connections. Migration is also a strategy adopted to improve livelihood conditions. A ‘migrant’ is one who has moved from their place of origin (i.e. birthplace), irrespective of their legal status, movement type (temporary or permanent), and driving forces (political, environmental, economic, or social) (IOM, 2019).

Environmental migration literature explains that people migrate for better livelihood options because of extreme environmental events and gradual onset events that disrupt their livelihood options. Thus, there is both an environmental push and an economic pull, making migration a very context-specific process (Chen and Mueller, 2018; Hunter and Norton, 2015; Piguet, 2018). migration refers to a complex decision and is linked to many economic, social, environmental and security aspects (IOM, 2018); it encompasses a multitude of movements (international or domestic, regional or local), situations (voluntary or forced) and backgrounds (permanent or temporary). Migration, therefore, provides millions of people around the world with tremendous opportunities to either improve their lives (i.e., ‘migration as adaptation’, Black et al., 2011; Hunter et al., 2015) or face further livelihood challenges (i.e., ‘failure of migration’, Gemenne and Blocher, 2017). The SLF sees rural households in the context of vulnerability within which they have access to certain assets, also known as capitals (see Table 3.1 and Figure 3.1). The extent to which people's assets can be built up, balanced, and how they contribute towards their livelihoods depends on various external factors that change people's abilities to acquire a living. Some of these factors will be beyond their control and may exert a negative influence. The sustainable livelihoods framework (SLF) is used to analyse and break down various components and essential elements of people's livelihoods. Its purpose is to enhance understanding of the necessary improvements required to enhance livelihoods in the context of climate change-induced migration. By emphasising the impact of climate change on vulnerable populations, the framework aims to place individuals at the forefront of livelihood vulnerability analysis.

Table 3.1: Capitals in the Sustainable Livelihood Framework

Capital	Description
Human	Natural resources include soil, water, biodiversity, and their environment.
Social	Social capital, which embodies the social networks and claims, affiliations, etc.
Natural	Human capital, such as labour resources, skills and knowledge base;
Physical	Physical capital, including infrastructure and production equipment.
Financial	Financial capital, encompassing cash, credit and debts, savings and such economic assets.

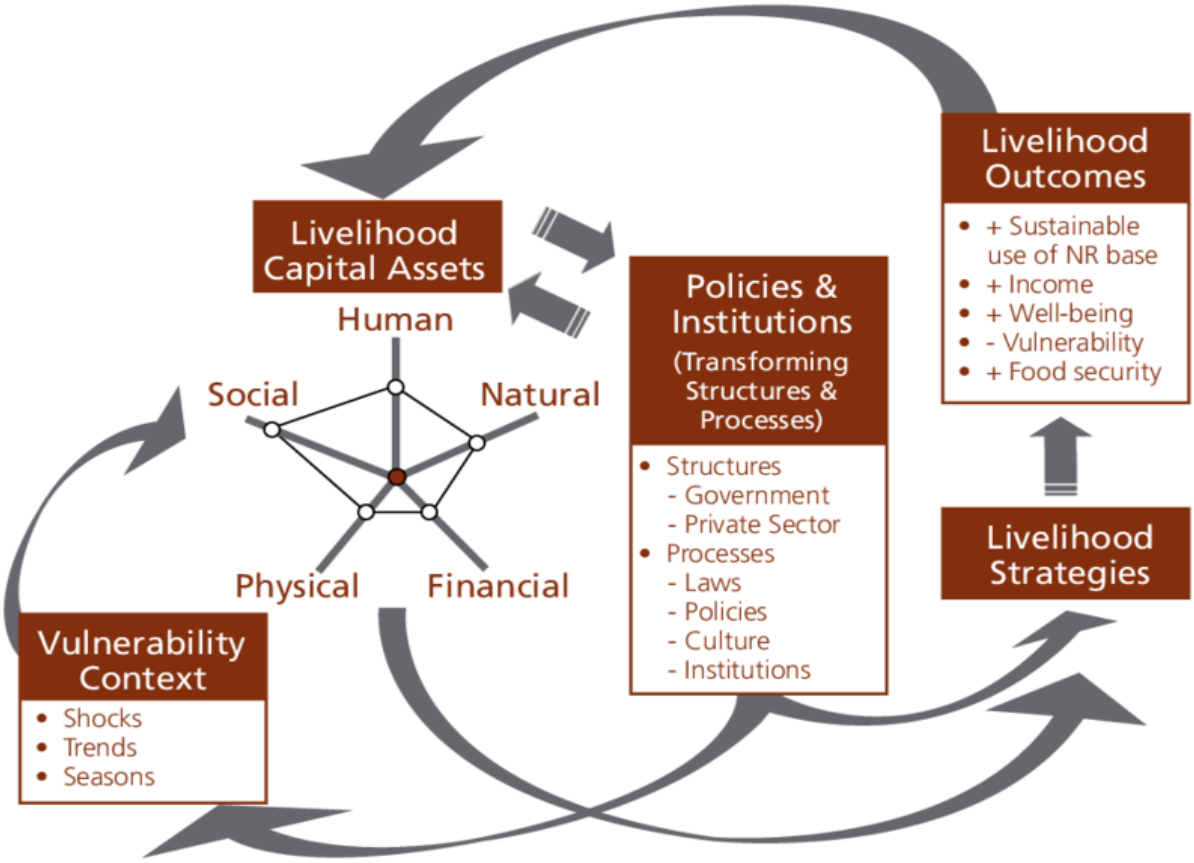

Figure 3.1: A sustainable livelihoods framework. (Source: DFID, 1999).

The vulnerability context refers to the shocks and stresses that affect people's livelihoods through the environment (Chambers and Conway, 1992b; Chambers, 2006). More specifically, it refers to the likelihood of livelihood disruption or other harm resulting from environmental shocks, stresses and social changes in this study, which leads to the out-migration of people in the affected regions (Eriksen and O'Brien, 2007).

Even though capital can be deployed to develop livelihood strategies that can help overcome vulnerability (Scoones, 1998), the SLF views a livelihood strategy as more than a method for securing material gain, but the notion of well-being as central (Houghton, 2012). These are human capital that represents skills, knowledge, ability to labour and good health (DFID, 1999). Human capital enables people to use any of the four other types of assets *(ibid.)*. In this way, human capital is essential for achieving positive livelihood outcomes and is vital in its own right (Becker, 2009). Social capital relates to the social resources people use to pursue their livelihood goals (Portes, 2000). Natural capital relates to natural resource stocks available for use by the household (Costanza et al., 1997). The natural capital used to pursue livelihood goals in this study is identified as resources, such as water and land. Physical capital relates to the infrastructure and goods, such as tools and equipment, that households can use to increase productivity, which is a handicap to the populace from the sending region in this study (DFID, 1999). In addition, financial capital relates to the amount of money a household has available to them (Carney, 1998).

Scoones (1998) asserts that two types of relationship between the capitals are important; the first is sequencing, and the second is substitution. Sequencing relates to the combination of capital that a person needs to escape from poverty. Concerning this research, it is vital to choose to migrate from the sending areas or, conversely, to remain. For example, human capital may be enough to leave the sending region, or a combination of capitals may be required. Regarding migration, human capital in the form of education may be necessary to gain employment. Human capital is also important as it is "likely to have a huge impact on (1) people's notions of the good life and, hence, personal life aspirations; and (2) their awareness and perception of opportunities elsewhere. (de Haas, 2011: p.21). In simple terms, if an individual has a livelihood aspiration to do 'x' and sufficient capabilities, they may be able to convert their livelihood aspiration into an achievement, referred to as a 'functioning'

(Sen and Nussbaum, 1993). The achievement, or 'functioning,' in the context of this study is migration. de Haas and Rodriguez (2010: p.178) posit that "human mobility is the ability to choose where to live; human movement (i.e., migration) is the associated function." A person's aspirations for a living are affected by various factors, including political, social, and personal circumstances (Robeyns, 2005). Burchardt (2009) highlights the significance of understanding that there are structural limitations that affect the available choices. To gain a better theoretical understanding of migration in achieving livelihood goals because of climate change that leads to resource contestation and conflict, the following sections examine Eco-Violence and Frustration aggression.

3.2.2 Eco-violence

In this section, I explore extreme weather variability-related migration to simplify the theoretical concepts of limited resources as the cause of conflict between migrants and host community members in Nogoa, Markurdi, Nigeria. It is envisioned that the findings presented in this paper will contribute to current discussions on the complicated relationship between extreme weather conditions and population movement, specifically in northern Nigeria. I adopted the eco-violence theoretical framework as the second framework for this study, in that it best explains the relationship between climate change, resource contestation and conflict in the study site Nogoa and Nigeria.

The interrelatedness between resources, conflicts and the environment is a topic that has fascinated many great scholars, such as Homer-Dixon (1994). In the journal Environmental Scarcities and Violent Conflict: Evidence from Cases, “International Security”, Homer-Dixon articulated the eco-violence theory. The theory emphasises that a substantial population, especially in many developing countries like Nigeria, relies entirely on key environmental resources: freshwater, cropland, crop production, forest and fisheries (Hagmann, 2005).

Conflict is triggered because of the shrinking or scarcity of these resources, usually due to overuse, misuse or degradation under certain circumstances, such as climate change. Climate change has led to decreases in the quality and quantity of specific renewable resources. The rising population and unequal access to resources are, in various ways, leading to the decline and scarcity of fresh water, cropland, forest, and fisheries. As a result, this has reduced economic productivity for the local people in northern Nigeria and the regional and national economies (Stoett, 2012). The affected individuals had no option but to migrate to other areas.

Furthermore, the migrating group not only triggers ethnic conflicts when moving to new areas but also decreases wealth, causing over-reliance on existing natural resources and conflicts. The fundamental assumption of eco-violence theory is that an insufficient supply of resources is because of resource scarcity (Chigozie, 2012). The unequal distribution of such resources or too much demand may cause conflict that may put some population groups or sectors in a situation of deprivation and result to violent means to gain access to these resources.

Resource scarcity is caused by various factors, such as pollution, population growth and climate change. Therefore, the scarcity of resources will likely constrain economic and agricultural productivity, affecting economic livelihoods and increasing poverty levels and migration patterns (Chigozie, 2012). Migration can then occur when the environmental quality of habitat becomes depleted or when the economic outcome of the migrants is likely to be better in other areas with greater resource availability, such as the study site of Nogoa, Benue State, Nigeria, leading to resource contestation and then precipitating a conflict, the main reason the eco-violence theory was adopted for this study.

It is essential to acknowledge that climate change is the primary reason for individual and agro-pastoralist migration into the host community (Onuoha, 2008). On this note, the eco-

violence theory is analytically captured when viewed from the host community, migrating population, resource contestation and conflict context. Additionally, it explains the intricate linkages that developed between climate change and conflict because resources are affected by climate change (Odoh and Chilaka, 2012). Due to the problem of desertification and drought because of climate change experienced in northern Nigeria, which has led to the decline of forests, water and fertile land to plant crops for food, migration to the host community of Nogoa, Benue State, Nigeria, in search of these essential resources has triggered violence because of contestation.

3.2.3 Frustration-Aggression theory

The theoretical framework is drawn from a psychological standpoint explaining the motivation of different behaviours; in essence, it emphasises on the study of human behaviour (see, e.g. Scott, 1948; Berkowitz, 1983). The theoretical framework explains the violent behaviour of the migrants, according to the experts in the study site that manifests due to the inability to fulfil their human needs because of a lack of access to basic amenities for the sustenance of livelihoods, leading to hostile (emotional) aggression against people of the host community.

Dollard et al., (1939: p.7) define frustration as one of the various emotional issues that come from everyday speech that are likely to be influenced by different meanings and as "an intrusion with an incidence of an instigated goal-response at its proper time in the behaviour sequence." Psychologists have used the term in so many ways, and it is referred to as an external instigating condition that sometimes individuals react to (life conditions in a society-economic deterioration, significant political instability and confusion, great societal change (Amsel, 1958; Staub, 2010). Deutsch (1949; 1994) noted that a vital root of frustration that led to its wide-ranging study in the field of social psychology is about competition between multiple parties-migrants and host community people, which is for dwindling resources, in

the study site of Nogoa, Makurdi, Benue state, Nigeria. Berkowitz (1989; p.66) stressed that "competitive encounters are frustrating, especially as the contenders deprive one another of efforts to reach the disputed goal, leading to the threat of total loss on each other's path."

As explained by Dollard et al., (1939; p.9), aggression is referred to as any "sequence of behaviour, directed with the intention of injuring an individual. It is regarded as an action having a certain purpose, which is the infliction of injury (Dollard et al., 1939, p. 45), leading to individuals at times attacking one another; it is not because they have been hindered-frustrated in the past, but because they believe that with their actions comes other benefits such as the infliction of injury to get what they crave for, as it is happening in Nogoa, Makurdi, Benue State, Nigeria, the study site that the bone of contention is contestation for resources that are in rapid decline due to the adverse effect of climate change (drought and desertification) that has decimated the northern part of Nigeria.

Furthermore, it is now widely accepted by most social-psychological investigators of aggression (e.g. Baron, 1977; Feshbach, 1964) that aggression is a deliberate attempt to injure someone in a hostile or emotional way, with the main aim of harming and what is instrumental in doing this is capita, social status, and resources. The latter is the case in Nigeria, leading to the conclusion by Dollard et al., through the explanation of both frustration and aggression, that "the occurrence of aggressive behaviour always presupposes the existence of frustration", which suggests that aggression does not occur without any form of prior frustration issues. The assertion that frustration "always leads to some form of aggression" implies that aggression is a particular outcome of frustration. In reality, the instant effects of frustrations appear to be primarily hostile aggression (Miller et al., 1941, p.339). Based on Berkowitz's reformulation, unpleasant environmental conditions and other aversive events and circumstances, as they are in northern Nigeria, lead to frustration-aggression attitudes (Breuer and Elson, 2016).

This theory was used in explaining the factors at play and the problem of migrants, including agro-pastoralists migration to the middle belt and southern part of Nigeria and the excessive force applied in taking over host communities' land, mainly because of the climate change adverse effect that brought untold hardship and kept people from reaching the goal they had expected, leading to open aggression (Omadjohwoefe, 2013; Berkowitz, 1989). In addition, frustration and aggression theory shows how a lack of necessary human needs leads to emotional reactions from individuals affected and, in essence, leads to a grave cataclysm, as is the case of migrants and pastoralists crossing over to other states in the middle belt and southern Nigeria, with the effort of trying to seek access to resources such as land and water that have been seriously decimated in the sending communities. Climate change has worsened the problem of meeting vital human needs, such as clean water and adequate food, and is to blame for such aggressive behaviours (Alao et al., 2012). This is noticeably manifested in migrating individuals, including agro-pastoralists from northern Nigeria, who have experienced increased degradation of vital resources to sustain livelihoods for years.

3.2.4 Application and synthesis of principal theories (frameworks)

To operationalise the frameworks to meet the research objectives, they were synthesised[6] into a single framework. (See Chapter 2, section 2.2, page 56), ideas from the Sustainable Livelihood Framework (SLF), Eco Violence (EV), and Frustration Aggression (FA). It is aimed at testing the same conceptual hypothesis (see Figure 3.2). The starting point in the framework is the vulnerability context' of the sending region (i.e., the village), specifically, the frequency and severity of the shocks and stresses experienced at the community level due to climate change. Our approach to recognising vulnerability-related risk is based on the concept that vulnerabilities are features of individuals, and that harm-

[6] Theory synthesis has the potential to reinvigorate theory within a particular discipline and to render it more robust and accessible for practical application (Pound and Campbell, 2015).

or the risk of harm-occurs when relevant vulnerabilities interact with the individual's situation.

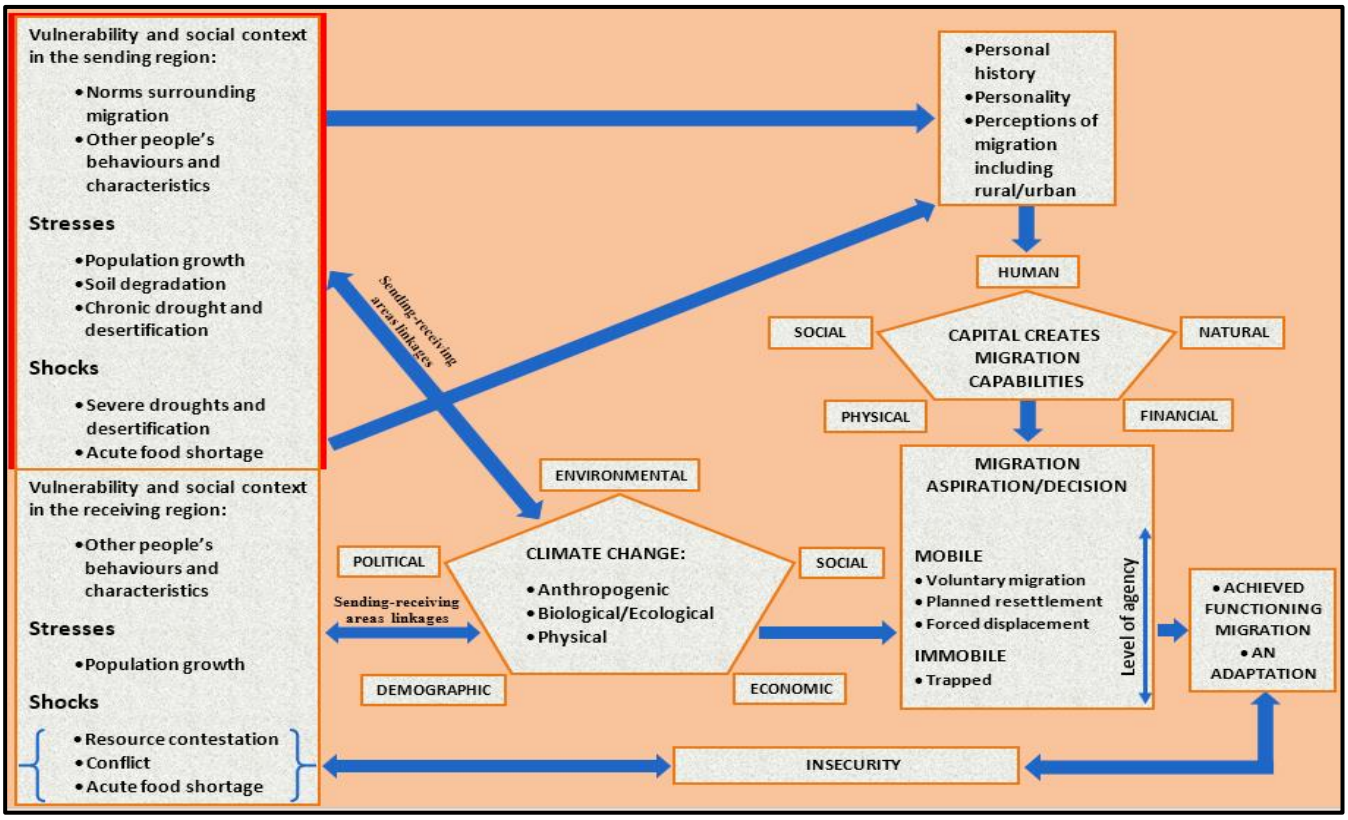

Figure 3.2: Represents the pathway in which climate change may impact a person's social and vulnerability, influencing livelihood, migration aspiration and decision-achievements leading to resource contestation and conflict. (Adapted and remodelled from Carney, 1998; Robeyns, 2005; Parrish et al., 2020).

Migration should be considered a viable option to sustain livelihoods (i.e., household income and survival). Understanding the link between migration and sustainable livelihoods requires understanding that migration is caused by more than just poverty, but also inequality and environmental hazards, which in this study are the adverse effects of climate change, drought, and desertification in the sending region (McDowell and de Haan, 1997). Thus, the term livelihood attempts to capture not only what people do to make a living, but also the resources that enable them to build a satisfying living, the risk factors that they must consider when managing their resources, and the institutional and policy context that either helps or hinders them in their pursuit of a viable or improving living (Ellis, 2003). Resources are

referred to as ‘assets’ or ‘capitals’ in the livelihoods approach and are frequently classified into five or more different asset types owned or accessed by family members: human capital (skills, education, health), physical capital (produced investment goods), financial capital (money, savings, loan access), natural capital (land, water, trees, etc.),-the main themes of this study that trigger migration from the sending region to the study site (Ellis, 2003). The things people do for a living are referred to as livelihood 'activities' in the livelihood framework. Migration provides access to various activities that are distant from the resident household to varying degrees.

The International Organisation for Migration (2023) emphasises the importance of understanding climate change vulnerability. Vulnerability can be split into three categories: i) exposure to climate impacts, which varies depending on geographical location; ii) sensitivity, or how much a community is affected by climate change; and iii) people's and communities' adaptive capacity, which is their ability to adjust to climate change while taking into account pre-existing social, economic, or political vulnerabilities. These dimensions determine the vulnerability or resilience of people and communities in the face of climate change.

The risk factors associated with earning a living are referred to as the vulnerability context, and the structures associated with government (national and local), authority, laws and rights, democracy, and participation are referred to as the policy and institutional context. So, in these contexts, people's livelihood efforts result in outcomes such as higher or lower material welfare, reduced or increased vulnerability to food insecurity, and improved or degraded environmental resources, which are the factors that lead to out-migration from sending to transit and receiving regions, such as the study site of Nogoa Makurdi, Benue State, Nigeria. Thus, migration, defined as a spatial separation between the location of a resident household or family and one or more livelihood activities undertaken by family members, is a central feature of most households' livelihoods in low-income countries such as Nigeria

(Ellis, 2003). In this study, the roles of migration concerning livelihoods help link vulnerability, which is a propensity to a sudden, catastrophic drop in the level of a variable, typically access to food for survival. According to Ellis (2003: p.5), the phrase "living on the edge" provides a graphic image of the livelihood circumstances that vulnerability attempts to convey. Living on the edge evokes the feeling of a slight push of a person or people over the edge, as with migrants in this study, which is a knife edge between the ability to survive and thrive and sudden loss of ability to do so, leading to outmigration as an adaptation strategy to survive (Ellis, 2003).

Understanding vulnerability within the realm of environmental issues involves considering the negative impacts of climate change, such as drought and desertification, and an integrated view of how people make a living-livelihoods approach within evolving social, institutional, political, economic and environmental contexts (Carney, 1998; Bebbington, 1999). As a result, vulnerability can be usefully constructed as a risk sequence that leads to success and failure (see Figure 3.3), which makes it more transparent concerning how it relates to the livelihoods approach and where migration fits into the picture. This also serves as a link to the poverty-reduction aspects of migration (Ellis, 2003).

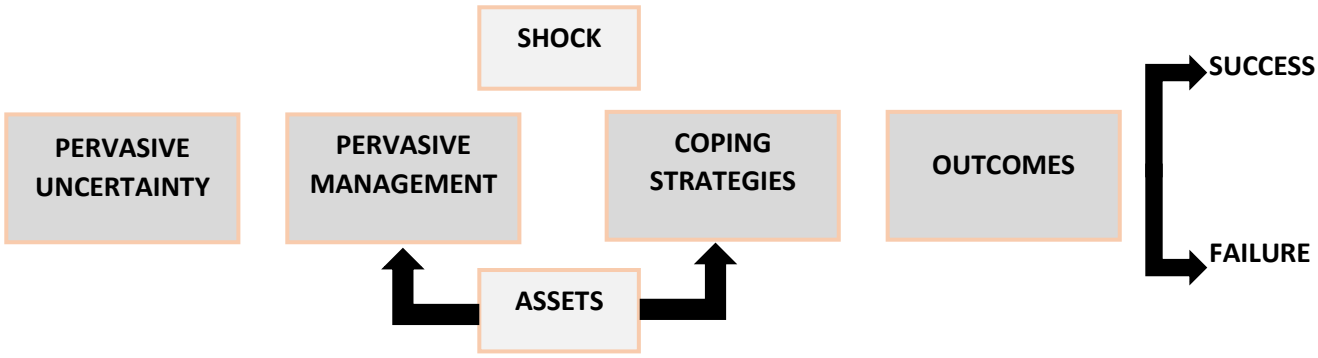

Figure 3.3: Vulnerability as a risk sequence. (Source: Adapted from Ellis, 2003).

According to scholars on migration studies like de Haan (1999) and Skeldon (2002), a positive stance is taken from the outset here on migration's role in improving livelihoods and reducing poverty. Low-income families make a living in an environment fraught with

uncertainty (comprising the seasonality and risk factors already described, as well as, often, political and governance risks). They are accustomed to this, so they manage risk as best they can, and migration in this study plays a vital role in assisting them in doing so Reed, Fraser, and Dougill, 2006). Concerning shocks (personal or widespread, such as the adverse effects of climate change, such as drought and desertification in this study), they adopt coping behaviours to mitigate the negative impact of the shock by migrating to the sending region. In this regard, the coping strategies result in outcomes that can be classified as either relative success or failure in dealing with the shock (Reed et al., 2013). According to Ellis (2003: p.6), in extreme cases of people fleeing drought affected areas,' livelihoods crumble, as in northern Nigeria. Migration is an integral part of the impoverished livelihood as an adaptation strategy to the adverse effects of climate change, drought and desertification experienced in low-income countries.

Climate-induced migration leading to overpopulation necessitates new considerations of how resources are replenished and services and amenities are managed so that areas migrated to provide a liveable and healthful environment devoid of resource contestation and conflict. The sustainable livelihoods approach is a holistic approach that tries to capture, and provide a means of understanding the fundamental causes and dimensions of the phenomena under study, which in this study is how climate change is causing migration from the northern to the southern part of Nigeria to sustain livelihoods (Majele, 2001). SLF considers individuals who are in vulnerable situations and aims to evaluate their means of living/surviving (Lowe and Schilderman, 2001).

In line with the SLF idea, a livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living (Lowe and Schilderman, 2001). A livelihood is sustainable if it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood

opportunities, which in this study are the stress and shocks from adverse effects of climate change, leading to out-migration from the affected areas in northern Nigeria.

Slettebak (2012) observe that the primary connections inferred by Homer-Dixon's eco-violence approach anchor on the context-sensitive transition from environment-induced stress and frustration to secondary factors such as contestation for scarce resources and/or migration. This, in turn, engenders a feeling of deprivation among individuals that is, in relation to the context, capable of evoking a sense of solidarity among members around their vulnerabilities that may breed aggression and conflict. The socio-economic context is a defining element, and this is adequately represented in the three analytical frames. For example, the socio-economic setting is important to conflict transformation because climate change can "widen the disparity between the 'haves' and the 'have-nots' both within and between nations" (Weissbecker, 2011: p.105), especially in the face of inadequate support systems.

Hauge and Ellingsen (1998) and Olaniyan et al., (2015), among others, affirm a positive correlation between decreasing access to renewable resources and higher levels of frustration among affected populations in resource dependent societies, which in turn, results in individual and broader forms of grievances including those directed towards the state, with broader non-direct but equally consequential effects including weakening of the capacity of the state as well as creating the conducive environment for the instigation of insurrection among the population.

Obioha (2008) and Isiugo and Obioha (2015) combine FA theory with group identity and structural theories in their review of the effect of population drift in northern Nigeria. In the same vein, Ubhenin (2012), in trying to understand the leading causal chains between climate change and violent conflict, and to identify theories which help explain climate change and violent conflict linkages, observed that there is substantial evidence of climate change conflict dimension to Nigeria's many violent conflicts in emerging empirical literature.

The connection of the three theoretical frameworks (Sustainable Livelihood, Eco-Violence-The Shrinking Pie and the Frustration Aggression) on primary and secondary population movements are a result of the adverse effect of ecological change, leading to migration being used as an adaptation strategy to have access to resources which is (primary) to resource contestation the cause of conflict that is (secondary) in Nigeria, if we want to understand the escalation of conflict in Nigeria. In that case, it can be deduced that climate change is a triggering factor and the root cause of unnecessary population movement from the sending areas, as well as resource contestation and conflicts in the destination areas, aided by declining rural economies. Buttressed by Baron (2006) and Kennedy et al., (1998), climate change-induced migration creates security hitches in Nigeria because of ecological declines, making people vulnerable and contesting for diminishing resources, causing conflicts between groups.

The importance of these three theoretical viewpoints is distinct in this study regarding climate change-induced migration from the northern to southern parts of Nigeria, which causes resource contestation and conflict because of people's high dependence on natural environmental resources to sustain livelihoods. This study is based on climate change-induced migration used as an adaptation due to a nation's declining environmental, renewable resource-carrying capacity, resulting in Nigeria's current population movement. Moreover, poor technological innovation and a lack of efficient political and social support from the Nigerian government are not helpful. Homer-Dixon (1995; 1996) noted that the absence of systemic support creates more problems for the population to sustain livelihoods, increasing the tendency of affected societies to express their anger through aggressive behaviour because of their vulnerability against the system or against other groups in the society that they believe is in contestation with them regarding limited natural resources, thereby contributing to the existing problems. According to Akinyemi (2016), it is of this nature that one understands

people's reactions concerning sociocultural, economic, and political policy strategies attributed to the availability and access to natural resources to sustain livelihoods within the society.

3.3 Research design

It is imperative to briefly discuss both qualitative and quantitative research design before explaining why the chosen design was deemed appropriate for this study.

Quantitative research entails collecting and analysing numerical data objectively to describe, predict, or control variables of interest (McLeod, 2023). Also, quantitative research is typically deductive, relying on experimental and survey methods to test specific hypotheses based on general principles (Verhoef and Casebeer (1997).

The qualitative research design focuses on multi-method, with an interpretive, naturalistic approach to its subject matter. Qualitative researchers investigate phenomena in their natural contexts, attempting to make sense of or interpret them according to the meanings people assign (Denzin and Lincoln) (1994, p.2). The emphasis is on investigating subjective experiences, opinions, and attitudes, often accomplished through observation and interviews. Qualitative research aims to generate rich and detailed descriptions of the phenomenon being studied and discover new insights and meanings (Verhoef and Casebeer, 1997). Understanding the social reality of individuals, groups, and cultures is the primary goal of qualitative research. People and groups are thus studied in their natural environment. McLeod (2023) states that qualitative research is exploratory and seeks to explain 'how' and 'why' a specific phenomenon or behaviour operates in a particular situation. By using qualitative methods, one can gain a comprehensive understanding of how individuals view their social realities, which sheds light on their behaviours within the social sphere.

In terms of design, this study employs a qualitative method to explain climate change-induced migration as an adaptation strategy leading to resource contestation and conflict,

focusing on Nigeria's situation. It combines exploratory, interpretative, and descriptive study approaches (Greene et al., 989); Caracelli and Greene, 1997). Interviews, focus group discussions, and observations were used in the data triangulation process. As Denzin (1978; p.291) explained, "data triangulation" is the use of more than one method to gather information. Alexander et al. (2008) noted that applying more than one approach for collecting and analysing data in a study is well recognised in social sciences research. This enables the validity of research by using various methods to gather information on the migration aspirations of individuals and households, including agro-pastoralists from the sending-the northern to transit and receiving regions in Nigeria. It also allowed the researcher to add due diligence to the study and lessen bias in a way that leads to worthy outcomes (Sekaran, 2005; p.33; Sekaran and Bougie, 2010).

Two key vital points adhered to regarding data collection and analysis for this study are the rationale and the integration of different sets of data processing (Moran-Ellis et al., 2006). Mason (2006) explained that rationale-based applications focused on validating data or analysis led to a complete understanding of the subject studied. Moran-Ellis et al. (2006) Qualitative strategy is warranted in this study, due to the essence of the occurrence and the contextual and multidimensional sequences of linkages drawn from vulnerability to migratory adaptation to resource contestation and conflicts. (Section 3.3.1, on page 128, clarifies the justification of why the qualitative application strategy was used in this study).

Bhattacharjee (2012) and Onyuku (2018) explain that a research design is a comprehensive plan and blueprint that directs the researcher on how to collect, measure, and analyse data for an empirical research project. To answer specific research questions or test particular hypotheses, the research design is the layout used in an empirical investigation, as was done in this study. Additionally, Burns and Grove (2003; p.195) noted that "it is a plan for conducting research with thorough control over issues that may hinder the validity of

findings." Bhattacharjee (2012) pinpointed three methods that must be detailed in a study's research design. These are (1) the procedure for data collection, which may follow a positivist/deductive method or an interpretive/inductive method, which in this study followed the interpretive/inductive method; (2) the process of developing the instrument, that is, the parameter of measurement or articulating data and relevant information; and (3) the sampling process, which entails the strategy for selecting sources, subjects, or respondents.

Parahoo (1997; p.142) elucidates that a research design is "a blueprint that defines how data are to be collected, analysed and the collection process." Also, Polit et al., (2001; p.167) explain that a "researcher" must answer research questions or test research hypotheses comprehensively and efficiently, as done in this study with the application of qualitative methods of research that aid in deriving better meaning and comprehending the sophistication of a real-life situation (Neuman, 2013).

In this study, data are collected and analysed succinctly, paving the way for examining real-life situations concerning climate change-induced migration used as an adaptation strategy by people from the northern to the southern part of Nigeria, leading to resource contestation and conflicts. The incidence of adverse effects of climate change and the context of vulnerability that influences violent outcomes were established. In this regard, modes of engagement that enable the researcher to extract contextual and latent details from data collected aid in effectively addressing this study's research objectives.

Relevant literature on climate-induced migration, resource contestation and conflicts linkage, as well as relevant interdisciplinary concepts and theoretical constructs that provide an analytical framework for the research, was made use of in this study, which aided the researcher in solving research problems, objectives and questions that are central to the disentanglement of the hypothetical linkages concerning the position of literature on migration as an adaptation strategy to climate change, resource contestation and conflict in Nigeria. As

a result, essential concepts, the existing state of knowledge, and developing a framework for the vacuum that needs to be filled in the study were familiarised with, in corroboration with Polit et al., (2001, p.121), which explains that "a literature review provides a background for understanding current knowledge on the chosen topic," as was done in this research, focusing specifically on the nexus between climate change-induced migration-adaptation, in the northern Nigeria context, human vulnerability, and contestation for resources in host communities, leading to conflicts of which the government has no answers for, and becoming more challenging to manage, as well as the implication for national security.

This study highlights climate-related internal migration as an adaptation strategy utilised by individuals from the northern to southern region in Nigeria. This migration often results in resource contestation and conflict. The study provides important insights concerning these vital points based on existing research on historical and contemporary climate-induced migration, resource competition and conflict. Regarding causal connections, analogy suggests that climatic conditions and changes are just one set of 'push' and 'pull' factors influencing migration.

3.3.1 Justification for applying a qualitative approach to this study

A qualitative approach is known for its scientific roots (Patton, 1990). Science-based research entails investigating answers to questions step by step and adhering to scientific principles that guide evidence-collection processes and documentation of new findings that can be applied outside the scope of the study, which shares characteristics with qualitative research. In addition, it incorporates the views of experts regarding the population investigated to comprehend better the matter or topic, which is how individuals adopt out-migration from northern Nigeria as an adaptation to the adverse effects of climate change, leading to resource contestation and conflict (Patton, 1990). Patton explained that qualitative research's effectiveness lies in acquiring values that explicitly identify culture, character traits, social-

based contexts, and opinions essential for this study. Additionally, Sekaran and Bougie (2010) stated that qualitative design must be grounded in an inductive level of reasoning, which is applied in this study to understand human behaviour and the cause of that behaviour. A deeper interpretive study of such behaviour was obtained. Thus, this study moves from specific observations about different occurrences to broadening generalisations and theories. The strength of qualitative research is further demonstrated in the complexity of text-based descriptions of individuals' perceptions of a subject of study (Erickson, 1985; Robertson, 2008). It provides information on conflicting habits, convictions, personal connections, feelings, and essential human attributes explored in detail in this study. Another well-supported application of the qualitative method is that it aids in identifying factors such as economic status, social values, ethnicity, and occupational roles associated with gender and security issues in this study (Gummesson, 2000).

3.4 Research strategy

A research strategy is a step-by-step action plan directing the researcher's thought process. It enables a researcher to conduct the research systematically and on schedule. Research strategy helps a researcher choose the suitable data collection and analysis procedure. Thus, it is of utmost importance to adopt the right approach while conducting the research (Walia and Chetty, 2020).

3.4.1 Case study and case selection

A case study research strategy was applied to this research. The case study method is commonly used in context-sensitive social research, as it helps researchers understand and interpret human actions and interactions in the natural social context, capturing the dynamics of social processes from individuals, groups, communities and particular event dimensions (Tellis, 1997). This study delves into the process by outlining the potential for the case study

method. The process outlining the case study method is "a technique developed to recognise processes that link primary conditions to a specific result" (Porta and Keating, 2008; p.224). This shows the importance of the process outlining technique as an essential part of the case study approach well recognised by researchers. (See George and McKeown, 1985; George and Bennett, 2004; Berman, 2007).

The case study research strategy encompasses intensively studying a current event in its natural setting, in a single or more site, using a good deal of information-gathering methods, such as interviews, documents, observations, and secondary data, to achieve a robust, thorough investigation of the event under research (Bhattacherjee, (2012). Giddens (1984) and Yin (1994) see the case study method as an empirical investigation that examines current events in the setting of real-life expression, an approach, in particular, that is necessary where there are no distinct limitations between the recent events and the circumstances within which they are happening. Gillham (2000, p.2) validated Yin's view by describing case study research as "an investigation to answer specific research questions that seek a range of different pieces of evidence from the case settings." Similarly, as Given (2008, p.68) points out, a case study is a research approach utilised to investigate a current event in-depth.

Merriam (1998) identified four indispensable attributes of a case study that proved valuable in this study:

(1) The specifics of the context from which inferences are drawn.

(2) A descriptive style that shows the attention given to extensive detailing of facts about the event researched.

(3) An investigation with a focus on advancing knowledge of the subject matter;

(4) It is inductive that generalised concepts are derived from data obtained in the cases observed in this study.

The main reason for using the case study method is not to make comparability, but to

explain a complex phenomenon in detail using extensive analysed cases (Tellis, 1997). It is a valuable approach that helps us gain more knowledge about a relatively unexplored event or process in a broader field. As a result, Stufflebeam et al. (2000, p.283) posit that the primary aim of employing case study methods is to enhance understanding, rather than seeking validation, as was the approach adopted in this study.

A case study of Nigeria explored the links between climate change-induced migration used as an adaptation strategy by people from the northern to Nogoa-the study site, in Makurdi, Benue State, Nigeria, leading to resource contestation and conflict. With the case study application, appropriate information regarding Nigeria shows people use rural-urban migration to adapt to environmental adverse effects, particularly drought and desertification (Potts, 2006b; Lewin et al., 2012). The scrutiny of the case study helped the researcher develop a new understanding of previously unknown complex issues, such as the migration system, vulnerability to environmental adverse effects, and people's reliance on migratory adaptations to survive, leading to resource contestation and conflict.

A searchlight was beamed on internal migration in Nigeria, as well as the effects of and changes in the methods of movement to sustain livelihood as weather becomes increasingly intolerable in the Sahel-savannah grassland arid regions of which the northern Nigeria is part of. Migration aspirations of individuals and vulnerability aspects, including resource contestation leading to conflict in transit and receiving areas community of Nogoa Makurdi, Benue State, Nigeria was very useful in bringing this research to a logical conclusion, by identifying that contextual circumstances, including political, historical, cultural and institutional factors have important roles to play in climate change induced migration processes used as an adaptation, and are thus crucial to our understanding of climate change-induced migration used as an adaptation, resource contestation and conflict nexus as seen through the migration of people from the northern to Nogoa, Makurdi, Benue State, Nigeria.

3.4.2 Justification for selecting the case study

Yin (1993; 1994) and Platt (2008) identified many advantages of using a case study for a study of this magnitude. Notably, it is flexible, vital and helpful regarding data collection through interviews, the researcher's observation and literature from archival resources, which in real sense was helpful in concluding this study. It aids in achieving a healthy investigation and analysis of the event studied in Nigeria. As explained by Walsham (1995) and Andrade (2009), the sturdiness of the case study research strategy gave the researcher a clear understanding of the social event, the intricacies, the changes, and the interpretations of the social processes affecting people in this study. It plays a crucial and valuable role in research. The case study focuses on the essential topics of investigation that the researcher aims to understand in real-time, such as the migration from northern Nigeria to Nogoa, Makurdi, Benue State, Nigeria. This study site served as the location where data was collected for the research conducted by Zainal in 2007.

Why was Nigeria explicitly selected for this study? Okon et al. (2021) argue that the answer lies in identifying research gaps. These gaps highlight the lack of focus on climate change impacts and adaptation in Nigeria, as well as the absence of studies examining the effects of climate change in Nigeria. As a result, Nigeria is one of the countries with limited research on the adverse effects of climate change. The impact of climate change on Nigeria's environmental and socioeconomic systems is driving migration from the northern to the southern part of Nigeria, compounding the country's fragility risks, which are at an alarming rate (Olagunju et al., 2021). Extreme weather patterns, drought, and desertification rendering large swaths of land in northern Nigeria unproductive are the challenges confronting local communities in the sending region, resulting in a loss of livelihoods and the displacement of communities.

As a result, growing desperation over natural resources drives conflict across Nigeria

due to the massive influx of people from the north to the southern part (Nwakpa, 2022). Depleting environmental resources in the northern part of the country poses a serious food security challenge in the face of a rapidly growing population. Also, according to the 2021 Notre Dame Global Adaptation Index, Nigeria is the 53rd most vulnerable country and the 6th least-ready country in the world to adapt to climate change (Nwakpa, 2022). There is a need for knowledge-based strategies to help plan adequate mitigation and adaptation measures for the country. Regarding the range of data examined in this research, from vulnerability to climate change, migratory adaptation, resource contestation, conflict and security, and at the same time, participant interviewed experiences in handling the affairs of individuals under their care, the researcher sees the case study approach as best suited in achieving the objective of this study, most notably regarding the gathering of appropriate information, and at the same time, helpful in terms of analysis and producing valid results concerning the matter under scrutiny Reaching this conclusion is based on its relevance to the diversity of participants backgrounds and perspectives, which are crucial in understanding the studied event, and the necessity to utilise this it in gathering vital information.

3.4.3 Study site

A town in a state in the Middle Belt region of Nigeria, where migrants from the northern part of Nigeria migrated to and settled, is the study site for data collection. The name of the town is (Nogoa, Makurdi, in Benue State, Nigeria). (See Figure 3.4).

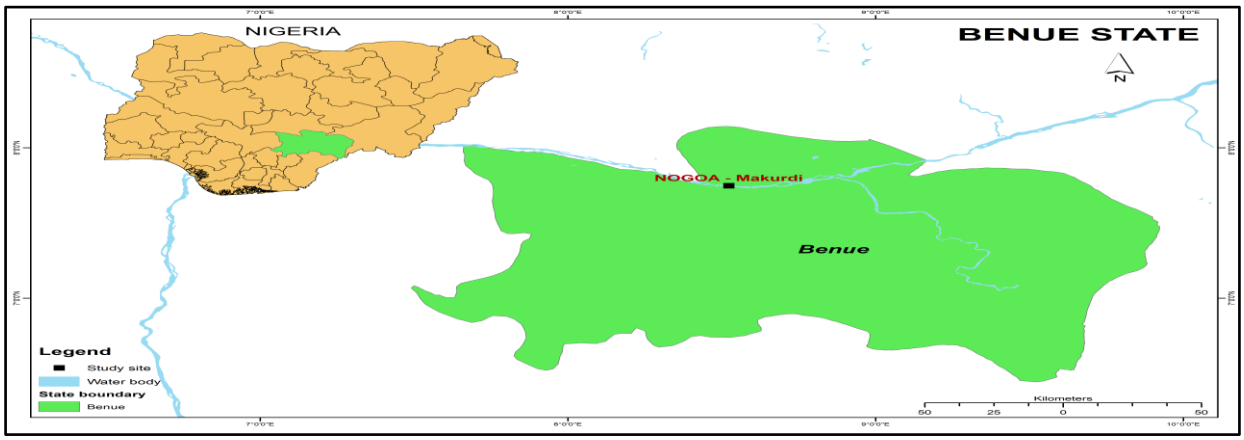

Figure 3.4: Study site: Nogoa-Makurdi, Benue state. (Source: Author, 2021)

Benue, where Nogoa is located, is a state in Nigeria in the north-central part. It is named after the river Benue, one of the two major rivers in Nigeria that flows through the state. It covers a total area of 34,059 km2 (13,150 sq. mi) and has a population of 4,253,641, according to the 2006 census. Benue is Nigeria's 9th most populous state (National Bureau of Statistics, 2011). The average population density is 98 persons per every two kilometres. The state is predominantly inhabited by the Idoma, Tiv and Igede people in the lower Benue state of Nigeria and shares boundaries with five other states: Taraba to the east, Nasarawa to the north, Enugu to the southwest, Cross-River to the south, and Kogi to the west.

Benue State is regarded as the "food basket of Nigeria" because of its abundant agricultural produce, such as cassava, rice, and sweet potato. The state accounts for approximately 70% of the production of soybeans in Nigeria. Benue state closeness to the river it was named after has led to a prosperous fishing industry. This river offers a platform for agricultural activities through irrigation during the dry season (Abah, 2012). The main reason it is the chosen destination for climate change displaced people.

Recently, there has been a significant movement of people from the northern region of Nigeria to other areas, particularly the north-central region known as the middle belt. This includes the study site Nogoa, located in Makurdi, Benue state. The primary cause of this migration is the unfavourable climate conditions experienced in the northern region. When agricultural productivity is affected by climate shocks, the people living in the northern part of Nigeria have limited alternative ways of making a living. Consequently, they migrate to the middle belt region, which is believed to have more favourable rainfall patterns (Abbass, 2014, p.331). The migration of various individuals, including pastoralists, into Benue State in Nigeria, where the study site is located, primarily starts from the northern region because of its proximity, and later expands towards the southern areas, often linked to violent conflicts. Such conflicts result from land resource scarcity, with climate change as a remote cause (2017;

UNHR, 2021). For centuries, migration patterns were seasonal, but climate change has altered what used to be seasonal to permanent in receiving areas (Mobjörk et al., 2016).

The frequency and type of environmental shock and stress that occurred in the sending villages and the situation of the massive influx of migrants (high-level of in-migration) to Nogoa, leading to resource contestation and conflict, solidify the main criteria as to why the state was chosen as the study site. Even though the data on migration into the town are not documented, data gathered at the local government level suggests that in-migration is increasing. The interview excerpts, analysis, and results are in Chapters 4, 5 and 6.

Also, this site was selected based on three essential criteria, which allowed the researcher to isolate, as much as possible, less complicated cases of climate-related migration from those in which the connections are confused by unimportant fault lines. The site can be classified into rural and urban or suburban host communities. This state serves as a destination for environmentally displaced individuals and agro-pastoralists. The socio-ecological aspects of how individuals interact with and respond to their environment and how these interactions affect society and the environment were investigated.

To streamline climate-induced migration used as adaptation, resource contestation and conflict connectivity, preferences were given to the following:

(a) identified locations with the repeated occurrence of migration, in which there is an institutional awareness of this occurrence at the political level, as well as ongoing effort processes at the political and communal level on the issue, and to establish that there is resource competition in the area.

(b) Unravel the implications of widespread vulnerabilities of people concerning rural-urban migration because of the adverse effects of climate change and its consequences, such as the conflict in destination areas and associated security risks such as impacts on food, water and energy supplies, increased competition

over natural resources and loss of livelihoods

In selecting the location for the case study, thought was given to affected places with the necessary suitable access required to gather sufficient information and background data while ensuring easy contact with a considerable number of interviewees.

These three significant methods were used for the efficient selection of the site for the research:

(1) A site with a significant congregation of internally displaced persons with a history of conflict was identified.

(2) A site that historically has a reasonably large number of farmers involved in agriculture due to the abundance of fertile land and water conducive to agro-pastoralist activities in Nigeria. It is a sought-after location for those migrating from the northern to the middle belt and southern parts of Nigeria.

(3) A site that shows north-south migratory routes, with a considerable presence of migrants and agro-pastoralist incursions, is the primary study site (for the key interviews and observation). Nogoa, Makurdi, Benue State, one of the first ports of call for migrants-displaced individuals and pastoralists migrating from thirteen of the nineteen northern frontline states, is known as one of Nigeria's most fertile landed areas for agriculture.

3.5 Research Methods

3.5.1 Representativity and significance of the sample for interviews

This study was conducted during the COVID-19 pandemic period, planned interviews were affected because of the challenges of reaching the target population, which are internal displacement people (IDP)-migrants and individuals from host communities in Nogoa, Makurdi, Benue State, Nigeria; hence, experts who are the administrative officials in Nogoa, in charge of migrants' activities and host community chiefs-key informant's views were sought

in collecting the data used for analysis. (See Section 3.7, page 166-Ethics and Positionality), for a detailed explanation). Thus, a representative sampling method was used to recruit participants' official/institutional subjects-Ministry of Environment and Local government officials and host community leaders) is purposive. Participants are chosen on purpose. It is also known as judgmental sampling or selective sampling-non-probabilistic. Parahoo (1997, p.223) describes the nonprobability sampling technique as one in which the researcher relies on personal knowledge and judgment in selecting subjects that serve as a source of data. This applies to this study since the researcher knew the specific characteristics of institutional respondents (units from a population) most suited to supply the needed information (Palinka et al., 2016). Because of the limited sample size, units were selected because they have the characteristics required for the sample to yield cases that are "information rich" to enable effective use of limited resources (Patton, 2001; Palinkas, 2016, p.2). In identifying and selecting individuals or groups that are exceptionally knowledgeable about or experienced with the phenomenon of interest (Cresswell and Plano Clark, 2011), experts and key informants' knowledge of the population is important because they provide in-depth and detailed information about the people and phenomenon investigated.

Research based on interviews often seeks to penetrate social life beyond appearance and manifest meanings, and this entails the researcher to be efficient in collecting, establishing continuing fruitful relationships with respondents, and addressing the research problem in depth, as was done in this study (Crouch and McKenzie, 2006). Kaplan, Chambers and Glasgow (2014) posit that the sample size should not be too large in research; a larger sample size becomes expensive from a statistical viewpoint, and a large sample size can augment the bias associated with errors in sampling or study design. In this circumstance, in-depth interviews involving experts, host community chiefs-key informants, focus groups, and observations were applied to advance this study's key concepts. The number of cases (12

interviewees and two focus group discussions) contributed immensely to conducting and concluding this research, and this was simplified as a result of the researcher's close association with the respondents, which enhanced the validity of the fine-grained, in-depth investigation in a naturalistic setting that yielded positive results concerning the feedback from respondents (Crouch and McKenzie (2006). (See Table 3.2) concerning how each interview phase informed the subsequent phase, helping to achieve the overall plan concerning the general idea of the procession of the interviews and time scale for all the elements covered, keeping to the expected time by not running longer than the agreed with participants.

Table 3.2: Phases of the interview procedure. (Author, 2021).

Expert Interviews

- **Purpose:** Conducted to provide background information on the chosen study site
- Ministry of Environment - Urban expert
- Local Government officials - Rural expert

Key Informant Interviews

- **Purpose:** Conducted to generate village background in areas migrated to
- Interview with Community Leader in Nogoa/Makurdi in Benue

Focus Group Interviews

- **Purpose:** Conducted to collect information on climate change, stress and shocks encountered by migrants and host community experience through focus group discussion (experts) and participatory timelines.
- Two rounds of discussion with Ministry of Environment and Local Government Officials in Nogoa/Makurdi in Benue State, Nigeria.

Participant Observation

- Throughout the research I kept a diary-notes of observations that was fused into my analysis.

Additionally, (see Appendix D and E, pages 448-451, for the experts-Ministry of Environment and local government officials interview questions; Appendix F, page 453, for the key informants-host community leaders' interview questions; Appendix G, page 454 for the ministry of environment officials Focus Group discussions questions, and Appendix H page 456 for local government officials Focus Group discussion questions) of the research project, clearly outlining the aims and objectives of the entire research process in a language accessible for the respondents. In Appendix I, J and K, on pages 458-463, are the information sheet, consent form and the debriefing note for respondents that clearly state what participation means in practice, how long participation takes, where it takes place and what it involves. (See Appendix L and M, pages 464-468) for the information sheet and checklist for gatekeepers who assisted in the recruitment of interviewees clearly explained that participating is voluntary, stressing to gatekeepers that participants should not be pressured into participating.

3.5.2 Sample size for expert and key informant interviews

As defined by Burns and Grove (2003; p.31), sampling is the process of selecting a specific group of individuals, events, or behaviours to conduct research. Similarly, Polit et al. (2001; p.234) define a sample as the percentage applied or used to characterise a whole population selected for study. Sampling aims to discover findings in a generalised fashion by investigating the selected case(s). As stated in (subsection 3.5.1, p.136**)**, the sampling process applied in this research is a purposive nonprobability sampling technique to obtain insights about the targeted population group in Nogoa, Makurdi, Benue State, Nigeria, the study site. Parahoo (1997, p.218) defines a sample as “the complete set of units from which data can be gathered”. Getting data through nonprobability sampling is easy and inexpensive because it does not necessitate a complete survey frame. These sampling methods paved the way for the smooth organisation and conduction of the interviews and group discussion aided by the

knowledge in advance of the precise characteristics of the respondents (Ministry of Environment and Local Government Officials and Host Community Leaders) by the researcher, who are mainly in a better position to furnish the information gathered for this study. This is due to the position of authority invested in them, being responsible for the demographic profiling/registration of migrants in transit and receiving areas and for taking care of the daily and necessary basic needs of these individuals in their care. (See subsection 3.5.8, page 150, for more information on experts, Ministry of Environment and Local Government Officials, and section 3.5.9, page 151, for more information on key informants and community leaders).

Burns and Grove (2003) argue that the members of the public are identified as the most valuable criterion used to generalise successfully when explaining, as done in this research. To prompt an adequate response to the interview questions precisely, the sample size comprises 12 interviewees and two focus group discussions at the study site. For the reason this limited sample size was polled (see Chapter 7, section 7.4-Challenges and limitations of the research for a full explanation). These respondents were distributed as follows:

1. Key Informant (Host Community Leader) at the study site = 4
2. Expert Interviews (Ministry of Environment Official) at the study site = 4
3. Expert Interviews (Local Government Officials) at the study site = 4
4. Focus Group Discussion (Ministry of Environment Officials) at the study site = 6
5. Focus Group Discussion (Local Government Officials) at the study site = 7

Regarding the interview questions for experts, the Ministry of Environment and Local Government officials (see Appendix D and E, p.448-451). For the key informants-host community leader's interview questions (see Appendix F, p.453). The Ministry of Environment Focus Group discussion questions are listed in (Appendix G, p.454), while those of the Local Government Focus Group discussion questions are listed in Appendix H, p.456).

Table 3.3 below provides a full breakdown of the interviews conducted to meet the purposeful sampling criteria vital for this study.

Table 3.3 Respondents' spread for the in-depth interviews

LOCATION	Ministry of Environment Officials	Host Community Leader	Local Government Officials	Total Numbers of interviewees
Nogoa, Makurdi, Benue State, Nigeria	4	4	4	**12**

Notably, the interview questions contained hypothetical questions on planned responses to stress, shocks, resource contestation, and conflicts due to the adverse effects of climate change. These were severe droughts and desertification, which led to a food crisis and affected lifestyles in the sending region. Respondents were asked how migrants made decisions concerning their well-being when they were being attended to by experts assigned to manage their welfare in Nogoa. Furthermore, these experts were asked about resource competition with migrating individuals, including pastoralists and farmers in the host community. Specifically, from all the questions prepared, respondents were asked these two key questions:

(1) What are the causes, effects and patterns of internal migration?

(2) What institutional, political or other measures in terms of policy guidelines have been taken thus far to halt the trend and prevent reoccurrence?

This is because the experts have privileged access to information that is out of reach of outsiders. They provide information on the activities concerning the sustenance of migrants' livelihoods because of the position of authority invested in them, as explained earlier. The information provided was very useful in analysing the data collected from the interviews.

3.5.3 Data collection

Data collection is a vital strategy researchers adopt to take note of behaviours and facts in a natural environment in qualitative research. According to Bernard's (1995) research, data collection strategies encompass observing a specific phenomenon and gathering factual information about the relevant context, as was carried out in this study. In doing so, the researcher is at liberty to observe extensively, conduct one-on-one interviews regarding data collection, and thoroughly scrutinise the collected data. Also, the researcher is at liberty to participate in the natural sense or become a participant in ongoing activities. The researcher diligently adhered to these guidelines in drawing the study' to a logical conclusion.

Why does a researcher need to be well organised? Gathering data about a phenomenon in research concerning developing countries such as Nigeria and analysing data collected from national events is tedious and time-consuming. This is grounded in numerous challenges bedevilling most developing countries, such as environmental challenges, epidemics, human rights violations, limited access to natural resources, inequality, and bad governance. All of these together need an adequate and efficient strategy used in this study to gather facts in a natural environment.

This brings us to the question: why do we prefer conducting social science research in developing countries over developed countries? The possible answer is that social problems are usually more severe in developing countries than in developed countries (Heaney, 1979). Therefore, financial and institutional capacity are usually more limited in developing countries, making it challenging to address such problems. The additional knowledge generated through collecting and analysing primary data concerning these problems will help formulate policies and develop institutional solutions for these problems. To conduct comprehensive research, all the research efforts were directed toward the severity of economic, social and environmental issues. Therefore, in this regard, the main question is,

why do we specifically conduct this research in a developing country such as Nigeria? This is due to the following reasons:

First, the data collected reveal new and related problems that the researcher never anticipated and was unaware of before. The majority depend on preconceived ideas of the social and scientific problems addressed during data collection (Douglas, 1976). Researchers often discover during data collection that the problem of interest for the researcher is not usually the priority for the people being polled/studied. For example, the preconceived idea for this research was that climate change in northern Nigeria is the cause of the migration of people to the middle belt and southern parts of the country. However, other underlying factors were discovered during data collection, such as the loss of economic activities and conflicts related to climate change that caused migration.

Second, the data collected was used to learn what local people are experiencing concerning the adverse effects of climate change, and for the government to understand and address the numerous problems they face because of climate change adverse effects in northern Nigeria. This will help provide possible solutions to these problems and allow the interviewees to present their opinions to the government during the formulating processes of policies (Taylor et al., 2015). For example, the conflict between migrant-displaced individuals, agro-pastoralists, and host community people can be solved when all parties understand the problem. Host communities can probably allow migrant-displaced individuals and agro-pastoralists to have access to some parts of their land and resources in a controlled manner through government intervention.

Third, the data collected can also be directed at monitoring or evaluating government policies and programs, including implementation (Alpert, 1996).

Collecting accurate information on the migration intentions of the population under study is paramount. As explained by Ajzen and Fishbein (1980), Douglas et al. (2008) and

Haggblade et al., (2010), because of a well-documented gap between intentions and behaviour, collecting information on migration intentions presents an arduous task. The main reason in this study I emphasise on the migration aspirations and capabilities of individuals instead of making predictions about migration. This is based on Potts' (2009; 2012) analysis of circular migration or repeat migration (the temporary and usually repetitive movement of a migrant between home and host areas), with the explanation that there are discrepancies between the intentions of potential migrants and actions, so one should be thoughtful and avoid overestimation of out-migration (from the sending region) (Data, 2020). For example, establishing the intention and reason an individual migrates shows that a problem has been identified, and by probing such a problem, it is possible to collect adequate information about the difficulties encountered by the migrants in the sending region.

I worked closely with gatekeepers, who assisted in the recruitment of interviewees. I stressed that participating is voluntary, so participants should not be pressured into participating. This was clearly stated in the information sheet and consent form for respondents (see Appendix I and J, pages 457-461), as well as in the information sheet and checklist for gatekeepers. (See Appendix L and M, pages 464-468).

3.5.4 Pilot study

The first line of action regarding data collection from the respondents' perspective in this research was a pilot study to perceive the intended meaning of the context or circumstances surrounding the event under investigation. Even though pilot studies are rarely incorporated into qualitative research, Holloway and Wheeler (2002) noted that they are helpful for a researcher, especially when the subject matter is new. Regarding this research, the pilot study helped the researcher develop the research from an interdisciplinary perspective involving environmental, ecological, and political aspects. This enables us to understand the key elements that must be addressed in the study's literature review. The pilot study helps the

researcher spot any ambiguities (i.e., unusual things), confusion in the questions put to participants, or problems with the task devised, identify unique research connections, ensure the security of the investigator and assistants, and establish the best environment for conducting interviews and focus group discussions. The pilot study took place online with a Ministry of Environment official in Nogoa, Makurdi, Benue State, Nigeria. The pilot study creates an opportunity to critically observe interviewees' reactions and awareness regarding the subject matter (climate change-induced migration used as an adaptation, leading to resource contestation and conflict), and the best procedure for eliciting information from the actual participants across all principal groups involved in the study was explored by the researcher using the pilot study. Information gathered through the pilot study enabled the researcher specifically to:

- Establish the prevalence of the connections between climate change, migration-adaptation, resource contestation and violent conflicts in the host communities.
- Know the situation of vulnerable groups.
- Find the best approach to collect the right information from participants.
- Know various explanations attributed to these vulnerabilities and the necessity to be neutral in studying the event.
- Fashion adequately plans for more organised research and knows the probable limits to innumerable methods essential in conducting the study.
- Finally, trust should be established with respondents, and, at the same time, a list of vital requirements that lead to all-inclusive research should be identified and created.

After conducting the pilot study and adhering to the aforementioned guiding principle, I successfully devised a plan for the study's next steps. Identifying and addressing issues in the pilot study helps reduce errors and risks in the main study. This increases the interpretation of the main study's results, as well as their correlation, reliability, and validity. As such, the pilot study provided an avenue for the researcher to familiarise himself with the essential concepts and the existing state of knowledge and develop a frame of vacuum that needs to be filled in the study. Also, it allows a specific focus on the linkage between climate change-induced migration used as an adaptive strategy and the nexus between migratory adaptation and contestation for resources and conflict, including human vulnerability in transit and receiving regions, as well as the implication of these dynamics for national security.

3.5.5 Participant selection using interviews and a focus group discussion

Participants can include a wide range of people, including individuals, community leaders, agency representatives, and local business owners. When selecting key participants for an interview and focus group discussion, one must be cautious and ensure that participants have first-hand knowledge about the community, residents and the problems and issues you are trying to investigate (Tong et al., 2007). In this case, the Ministry of Environment and Local government officials (Experts) and community leaders (Key informants) at the study site Nogoa, Makurdi, Benue State, Nigeria were selected for interviews and focus group discussions. Before conducting the interview, a selection process was adopted, which involved creating a list of potential informants and key informants or groups that were interviewed. As Reynold et al., (2013) explained, the list contains diverse representatives from two groups: government officials and host community leaders. Questions such as migrant migration aspirations were asked, and migration issues were discussed with experts and host community leaders at the study site.

Recruitment of participants is foundational to research methodology. Even though

recruitment of participants to this research is challenging (Spratling, 2013), notwithstanding, it is an important factor in the research outcomes of establishing climate change as the cause of migration used as an adaptation strategy by people from the northern to the southern part of Nigeria (Newington and Metcalfe, 2014). Furthermore, recruiting participants for this study influence the trustworthiness of qualitative research, the foundation of this study (Jessiman, 2013). Regarding some of the key questions asked. (See subsection 3.6.1, page 159, for the clarification of data analysis procedure). Questions asked shed light on the causes, effects and patterns of internal migration arising because of climate change in Nigeria; social, political and demographic aspects concerning the impacts of climate change-induced migration for sending, transit and receiving regions resource contestation conflicts were investigated, and institutional, political and other measures in terms of policy in place to tackle climate change and guidelines were explored in cognisance with the research objectives and bridging the gaps in the literature.

3.5.6 Semi-structured interviews

Pinsonneault and Kraemer (1993: p.77) identified an interview as a method of "gathering data concerning the characteristics, actions, or opinions of a significant group of individuals, signified as a populace." In addition, Frey and Oishi (1995: p1) define interviews as "purposeful conversation in which one person asks prepared questions (interviewer), and other answers them (the respondent)." Interviews can be closed (with structured questions) or open (with no set questions). They can also be semi-structured, which was used in this study, allowing the researcher to exploit the benefits of each type of interview. For example, open interviews enable the researcher to efficiently "deal with the issues of interest in any format and to phrase questions as the researcher thinks best" (Nichols, 1995: p.131). In this regard, a semi-structured interview that contained pre-planned questions was prepared and used for all respondents in this study. The semi-structured interviews are well-thought-out as the best of

both worlds (George, 2022). Combining elements of structured and unstructured interviews gives semi-structured interviews the advantages of comparable, reliable data and the flexibility to ask follow-up questions in this study. The interview was conducted in a relaxed environment, with questions flowing from preceding answers whenever possible.

Twelve semi-structured interviews were conducted with the Ministry of Environment and Local Government Officials and host community leaders, and two focus group discussions: One with six members of the Ministry of Environment Officials-experts and seven members of the Local Government Officials-experts. The feedback was integrated with the policy governance response analysis.

3.5.7 Merits and challenges of interview and focus group discussion

Online interviews help with more accurate screening in this study, capturing verbal and nonverbal aspects, including body language, such as interviewees' emotions and behaviours, which can show discomfort with the questions being asked. Additionally, it puts the interviewer in control over the interview, and at the same time keeps the interviewee focused and on track regarding the completion of the interview. Its application is grounded in qualitative approaches on the same page, with high flexibility for both the driver (researcher) and the participants involved. To this effect, interviews have open-ended ends or flexibility that do not need general wording regarding questions, in effect, leaving room for the participants to respond in their own words in a way that lends credibility to their responses compared to the closed-ended yes-or-no streak of questions (Denzin and Lincoln, 2003). Additionally, the unique arrangement of interview questions allows the researcher to ask follow-up questions relevant to the participant's responses.

As with any data collection method, online interviews also have disadvantages, including the data's quality. The interviewers may have biases over some specific responses from respondents and their analysis, especially regarding hot topics. This was avoided while

conducting the interviews. Conducting several interviews across multiple areas may be necessary, which can increase costs. Also, this was avoided because of the adequate help rendered to the researcher by relevant authorities-gatekeepers, for which I was so grateful. To this extent, the advantages of using the online interview method outweigh the disadvantages.

Regarding focus group discussion, Guerrero and Xicola (2018) define focus group discussion as one of the procedures used to understand and explore human behaviour. It is used to generate information on collective views and the connotations behind those views (Mishra, 2016). Focus group discussion is often used as a qualitative approach to gain in-depth knowledge of social issues, and to obtain data from a purposely selected group of individuals instead of a statistically representative sample of a wider population (Mishra, 2016).

In this study, focus group discussions were used to understand issues relating to climate-change-induced migration used as an adaptation by people migrating from the northern part of Nigeria to the study site of Nogoa Makurdi Benue state, Nigeria (see Longhurst, 2003). Focus group discussions were suitable for obtaining thorough information about migrants- individual and group emotional states, perceptions, and views that are the main subjects of this study. Compared to personal interviews, focus group discussions for this study provide wide-ranging information. As a general rule, when conducting focus group discussions in this study, the researcher scrutinised three stages of information: individual, group, and group interaction (Duggleby, 2005). Although these advantages are attributed to focus group discussions, there are flaws associated with disagreements and unrelated discussions that distract participants from the main focus of the discussions. Moreover, in some cases, focus group discussions can be hard to control and manage without proper planning, leading to some participants finding the focus group situation intimidating in such a way that participants may feel pressured to agree with the dominant view during discussions. These flaws were taken into consideration and addressed when conducting this study, and by

avoiding these flaws, the focus group discussion was organised and completed successfully.

3.5.8 Expert interview: Ministry of Environment and Local Government Officials

Meuser and Nagel (2010) state that an expert has access to confidential information. Experts function as privileged individuals or as individuals with a unique knowledge advantage on social issues. Expert interviews are a widely used qualitative interview method often aimed at acquiring information about or exploring a specific field of action. Experts are part of the action and have privileged access to information that is out of reach of outsiders (Meuser and Nagel, 2010). Expert interviews are among the most commonly utilised methodologies in empirical social research. The purpose of the expert interview is to unearth the unknown, a person's "insider knowledge" (Liebhold et al., 2005; Monke, 2007). Lamnek (2005, p.333) posits that an expert interview is an investigative and instructive interview used to learn about explicit information.

The role/task given to the environmental officials interviewed by the government is to profile/register migrants demographically, provide settlement camps and maintenance, monitor and enforce health and hygiene for migrants in the local community to avoid an outbreak of diseases. In contrast, the local government officials are responsible for the provision of basic amenities such as food, water, and sanitation for migrants and the management of the local government area of Nogoa, Makurdi, Benue state, Nigeria. Two administrative personnel in two different government jurisdictions were contacted by the researcher, asking to help distribute the researcher's contact details to potential participants.

Purposive sampling was used to recruit the experts. The experts interviewed for this research provided information on the individuals who live in the study area, the main problems affecting them, and the answers to these problems. This provides insight into why people migrate from the sending to the study area, providing information on cultural differences and what this means to the study site. Also, information concerning livelihood activities was

sought. Also, the experts interviewed were asked to shed light on the level of in-migration to Nogoa, and the precise locations where migrants settled. Additionally, information on the difficulties migrants faced in the sending region was sought, and the motivations behind their decision to move to the study site were explored, including resource contestation and conflicts experienced at the study site.

The level of shock and stress experienced by affected individuals was recognised. More detailed information was captured regarding the socioeconomic status of the areas migrated to, which entails information on the population demographics of people migrating to the study site. This study's expert interview was conducted using the online communication platform Zoom.

3.5.9 Key informant interview: Community leaders

As stated by Marshall (1996), a key informant is a person with profound knowledge of the running of society, as well as the problems and wants of that society. Because of their social status within the community, a key informant provides valuable insights concerning the activities of a community. Key informants comprise community leaders who have first-hand knowledge about the community. The in-depth qualitative interview with key informants was conducted to gather insights from well-informed individuals about the happenings in Nogoa, Makurdi, Benue State, Nigeria. The benefit of using key informant interviews is to collect information from a wide range of people, including professionals, community leaders, or residents who can access first-hand knowledge about the community (Kumar, 1989). Also, the key informant interviews help collect quality data in a short period (Lincoln, 1985). For this project, community leaders living in the affected community of Nogoa, Benue State, Nigeria, were involved because they are considered to be the guardians of the communities and, therefore, are more knowledgeable concerning what is happening in the community. As with experts, purposive sampling was used to recruit the community leaders. These

community leaders provide insight into the problems the community is facing because of the massive influx of migrants, resource contestation and conflicts (Gilchrist, 1992).

Having previous knowledge of the community and the chiefs interviewed enables me to avoid cultural bias-(the interpretation and judgment of phenomena by the standards of one's own culture), reframe necessary questions, and self-reflect on my point of view. As with the expert interview, the online communications platform Zoom was used to conduct the interview.

3.5.10 Justification of focus group discussion

Some benefits of FGDs, according to Parahoo (1997), include:

(1) It makes data collection less expensive and more efficient.

(2) It fosters a relaxed, socially engaging, and less formal environment where participants can express themselves as a group rather than individually with the researcher.

(3) Participants can further reflect, react, and corroborate the thoughts and opinions of others or learn about and shed light on new subjects that are likely to escape individual interview sessions (p.298). Similarly, Holloway and Wheeler (2002) noted various advantages of using FGDs. These include:

(1) The thought-stimulating dynamism of interactive information exchange among participants that invokes memory and experiences related to the issue.

(2) The option for both participants and researcher was to ask questions, thus enriching the data acquired.

(3) It allows informants to expand on responses provided by other participants.

(4) Finally, the researcher should be able to shed light on opposing viewpoints and be open to more interpretations concerning participant opinions (Holloway and Wheeler, 2002: p.117).

Dilshad et al., (2013) argue that a focus group comprises a small group of people, approximately six to ten, whom the researcher selects to examine and explore feelings,

attitudes, perceptions, and ideas about a specific topic. Therefore, the focus group discussion provided a setting for this group to answer and contribute proficiently to the questions the interviewer asked on climate change-induced migration by people from the northern to the middle belt and southern Nigeria, resource contestation and conflicts. The focus group discussion was used to collect data in a social context manner and to understand and offer solutions to a specific problem based on the participants' views. The focus group discussion in this study provides a detailed set of data regarding people's thoughts, perceptions, impressions, and feelings in their own words concerning the causes, effects and patterns of internal migration arising because of climate change, adaptability strategy resource contestation, conflicts and policy responses towards managing climate change-induced migration actions in Nigeria. The focus group discussion is beneficial to the researcher's needs in determining people's experiences, understanding of the topic discussed, and their exact pattern of thinking (Gibbs, 1997). It allows marginalised communities or segments of society, such as women, to be heard, as it exposes their feelings and concerns regarding a particular topic or problem. Morgan (1997) suggests that the simplest way to determine whether a focus group is appropriate for research is by asking yourself, the researcher, how actively your participants would discuss the topic of interest. In this study, participants willingly took part and contributed without any inducement. This makes the focus group discussion appropriate for this study.

Correspondingly, for this study, the researcher has to vigorously engage in comprehensive discussions to gather reliable information from the focus group discussion (Kitzinger (1995) and Cataldi (2017). These methods are suitable for collecting and securing a precise set of data on habits in a natural and neutral environment (Stewart and Shamdasani, 2014; Cataldi, 2017), and the suitability of an in-depth discussion comes in handy in collecting highly sensitive data, such as life histories and personalities of individuals, views and real-life

experiences about the phenomenon being investigated. Additionally, the freedom of participants to choose what words to use in reply to this study's open-ended questions is essential and beneficial (Lewis, 2015). Questions with open ends elicit replies that bear

meaning to the respondent and, at the same time, accord the researcher the freedom to investigate previous responses to establish the reasons for such responses (Geer, 1988; Creswell and Creswell, 2017). Participants were recruited for the focus groups after the individual interviews. (see Table 3.4).

Table 3.4: Provides a full breakdown of focus group discussion attendees.

LOCATION	Ministry of Environment Officials (Focus Group Discussion) Numbers	Local Government Officials (Focus Group Discussion) Numbers	Total Number of Discussions
Nogoa, Makurdi, Benue State, Nigeria	**6**	**7**	**2**

Participants experts-Ministry of Environment officials tasked with the administrative/setup of the internal migrant displaced camp and demographic profiling/registration of migrants in transit and receiving areas and experts-Local Government officials tasked with caring for these individuals daily and necessary basic needs. As with the expert and key informant interview, the online communications platform Zoom was used to conduct the focus group discussion for this study.

Recruitment was generally limited to ten people for the two sets of the focus group discussions (Barbour and Kitzinger, 1998). The first set of the focus group discussions was with the experts-Ministry of Environment officials. The migration aspirations of migrants in their jurisdiction and the natural environment of the sending region were explored. Specifically, the frequency of shocks and stresses experienced and responses to those shocks and stresses were investigated. (See Appendices D and E, pp.463-465, for an outline of the

focus group questions). The second set of focus group discussions was with experts-Local Government officials. Resource contestation and conflicts were investigated. Both discussions were conducted soon after the individual interview.

3.5.11 Participant and current events observation in the study site Nogoa

Participant observation has been the hallmark of sociological and anthropological studies for years. There has been a noticeable rise in qualitative studies in recent years that focus on participant observation as a data collection method. Jorgensen (2015) argues that compelling participant observations involve the management of impressions and the maintenance of a certain level of detachment. Marshall and Rossman (2010: p.79) define observation as "the systematic description of events, behaviours, and artefacts in the social setting chosen for a study." Participant observation involves establishing a good rapport with the people interviewed and discussed with. The researcher is more than just a participant observer; the researcher observed with keen interest concerning events in the study site, conversed naturally with the experts and key informants, and avoided being intrusive in this study. The researcher conducted the participant observation with an open and nonjudgmental attitude (Taylor et al., 2015). Being a careful observer, a good listener, and open to the unexpected helps the observer-researcher avoid mistakes when collecting data.

Furthermore, I kept a note diary of happenings in Nogoa, Makurdi, Benue state, Nigeria in a naturalistic way and the behaviours of my research subjects' migrants and host community people in real-world settings for twenty-eight days. This allows me to access the "backstage culture" (De Munck and Sobo, 1998, pp.383-384). By adopting a naturalistic approach, the researcher was able to observe the study subjects and events at the study site of Nogoa, Benue State, Nigeria effectively. This approach significantly improved the quality of data collection and interpretation (Corbin and Strauss, 1990). I followed Schatzman and Strauss' (1973) guidelines for taking field observation notes. For my observational notes (see

Appendix A, page 437).

Observational notes are statements of attitude drawn from events discussed, mainly through watching and listening in this study. Even though they contain little interpretation, they are as reliable as the researcher-observer can construct them. The majority of observational findings are in tandem with the feedback from respondents interviewed, and some were infused into the analysis presented (see Chapters 4, 5 and 6). Additionally, because of ethical concerns by the school ethics committee that prevented the researcher from conducting interviews with some target audiences classified as vulnerable, drawing inferences from some of the observational findings gathered was challenging. There is a risk of confusion with some variables and potential observer bias, which could have affected the analysis if precautions were not taken. (See Chapter 7, section 7.4 Challenges and limitations of the research).

Therefore, my observation notes enable me to identify and observe the subjects, as well as establish connections between them and their environment, and how the environment impacts their behaviours. It provides an in-depth information on the subjects because they were observed for an extended period.

3.5.12 Validity and reliability of using the qualitative research method for data collection

The primary aim of using qualitative research methods for data collection in this study is to arrive at findings that portray concrete realism and are free of bias. There must be a need for reflexivity and self-awareness on the researcher's part throughout the study phases. Validity is well defined as the "degree to which a measure-interview or survey accurately measures what the researcher aims for." Furthermore, validity refers to the "appropriacy" of the research tools, processes, data collection, sampling, and data analysis (Punch, 1998; Priest and Traynor, 2006; p.43).

Reliability is the degree to which what is being measured would produce reliable

results if applied under standard conditions. Reliability is also described as the trustworthiness of the procedures and data generated (Stiles, 1993). It is about the extent to which the results of a study or what is measured are repeatable in different settings (Bryman 2001). Therefore, to mitigate bias in data interpretation, it is crucial for a researcher to validate their findings by re-examining the data in different contexts, as demonstrated in this study.

As noted by Punch (1998) and Priest and Traynor (2006), regarding the successful outcome of a research, there must be the need for carefulness by the researcher in minimising how personal issues such as race, age, gender and relationships influence the outcomes of the research. The validity and reliability of the findings in this study helped the researcher measure the value of this study so that validity and reliability truly represent existing social realism. Concerning measuring or enhancing data reliability, analysis and findings, qualitative researchers frequently rely on various frameworks to measure trustworthiness (Punch, 1998; Priest and Traynor, 2006). These include the following:

(1) *Credibility* relates to the level at which information and its means of analysis can be reliable or adequate.

(2) *Transferability* is about how well research findings can fit into a new background apart from the actual background being studied. That is, the knowledge base is transferred. Maxwell (2002) noted that it is about the ability of a researcher to apply his account of the situation observed in other circumstances apart from the context studied.

(3) *Dependability*, which is about how reliable and consistent data are gathered, including observation of the phenomenon under study, can depend on enhancing knowledge.

(4) *Conformability* addresses the extent to which findings can be subjected to confirmation or corroboration by others, highlighting the objectives to be

achieved by the researcher and his awareness of avoiding biases in his interaction with the participant as an investigator (Seale (1999: p.45).

It is imperative to note that qualitative study prioritises the sturdiness of research by capturing subjective meanings and interpretations of realism as created within an exact situation and period, as done with this study. Foremost, I ensured that the research philosophies aligned with the research, that the underlying needs of the research were fully understood, and that the overarching guidelines and societal rules of ethical research were followed. I rely on comprehensive data primarily because it allows for continuous testing and comparison, enables efficient organisation of information through tables, and ensures the validity and reliability of the data. This study was strengthened by employing the qualitative research method. Applying the qualitative research method proved the robustness of this study's methodology, sampling process, data analysis, and research findings (Golafshani, 2003). The researcher's subjective interpretation of the data collected assured readers the credibility of the study's findings.

3.5.13 Tackling difficulties in gathering information based on the competence of individuals and addressing conjectural information

Ways of thinking and concrete strategies assisted the researcher in transitioning research practice (interviews) to online environments. In using the online platform Zoom, modalities for a clear understanding of affordances were thought through. The researcher made sure that the interviewees were familiar with the online video application being used. This made it easy and convenient to organise and conduct the interviews and focus group discussions successfully. Additionally, the successful conduct of the interviews and focus group discussions in virtual social environments that drive traditional qualitative research methods to online environments and generate new qualitative research methods that respond to the particularities of online worlds is a unique experience that aided this research. Online

methods and applications contribute significantly to this research with solid design principles and attention to ethical, technical, and social challenges.

To ensure the validity of the conjectural responses, I adopted two strategies. The first was to ensure that the study site had experienced a massive influx of migrants. I ensured respondents were conversant with the subjects in question (see Appendices; C, p.460 for the experts-Ministry of Environment and Local Government Officials interview questions, D, p.463 for the key informants-host community leader's interview questions, E, page 465 for the ministry of environment officials focus group discussions questions and F, page 466 for local government officials focus group discussion questions). The second was to explore how individuals in the destination area had responded to stress and shocks in the past before arriving at where they are now through interviews and focus group discussions on the environmental stresses, shocks and responses of individuals with experts. As explained previously, this is due to the position of authority invested in the experts, responsible for the demographic profiling/registration of migrants in transit and receiving areas, and taking care of the daily needs of these individuals in their care. As Pearce et al., (2006) explained, using this method ensured the validity of the conjectural responses from respondents.

3.6 Analysis

3.6.1 Clarification of data analysis procedure

A combination of focus group discussions, individual interviews, and observation was used for the data analysis process, because they afford access to different aspects of the phenomenon under study, providing insights into the collective construction of social and everyday knowledge. This leads to the gathering of crucial data that is necessary for thorough analysis and reliable results. The analysis goes beyond just comparing the content of individual interviews, focus group discussion and observation aspects. It also involves examining processes and drawing on the theoretical concepts adopted for this study. Using

interviews, focus group discussion and observation (triangulation of data source) does more than simply making the analysis in this study more complete; it also affords a better understanding of the phenomenon under study, in this case, climate change-induced migration, used as an adaptation strategy, resource contestation and conflicts better through analysis.

By utilising the triangulation strategy, this study presents a well-thought-out framework that allows the researcher to fully grasp the potential of each method and harness the complete benefits that arise from their combination. This approach aids in planning the research design and adaptation of tools such as the (interview guide, development of analysis strategies, and interpretation of data), as highlighted by Caillaud and Flick (2017). To analyse qualitative data effectively, it is important to engage in an active and collaborative set of measures. As Holloway and Wheeler (2002) noted, data analysis runs concurrently with data collection. In relation to data analysis, researchers have acknowledged the importance of certain intellectual activities, particularly in the qualitative research designs utilised in this study. According to Field and Morse (1996; p.82), these include the following:

(1) *Comprehension* - This method allows the researcher to comprehend events as they occur and to present the event under study in a detailed, descriptive manner.

(2) *Synthesising* - It entails sorting and coding. It is the method used to assemble striking data from current data to sift credible vital points that can be interpreted from facts relating to the event under research.

(3) *Theorising* - This entails organising information into various scopes to develop alternative viewpoints and clarifications concerning the event under study and correlate it with current information.

To ensure the reliability of interview information, it is necessary to take steps that

involve accurately recording the feedback received during the interview, as was done in this study (Parahoo, 1997). Significant statements pertaining to the experiences of individuals, groups or communities under investigation must be extracted, and meanings must be constructed from the statements of individuals interviewed. The interviewees' statements must be arranged systematically into categories, and the researcher must have the knowledge/experiences of structuring feedback into descriptive categories in a way that relates to the subjects under study.

Furthermore, it is essential that feedback categories are reviewed/compared with the primary source of data (in this instance, current literature) for authentication, and in the process, conclusions are drawn (Parahoo, 1997).

Parahoo (1997, p.355) argues that several approaches must occur to make sense of interview data. The process in this study is identified as follows:

(1) Verbatim transcription of responses obtained from the interview and focus group discussion from the Ministry of Environment and Local Government Officials and Host Community Leader.

(2) Extracting significant statements pertaining to the experience under investigation.

(3) Formulation of meanings from statements.

(4) Organisation of statements into clusters

(5) Structuring experiences into descriptive thematic categories.

(6) Reviewing or comparing categories with the original source of information (in this case, existing literature) to validate conclusions drawn.

Regarding the analysis of the data that was collected for this study, respondents' understandings, as derived from semi-structured participant interviews, focus group discussions, and observations, were grouped into categories such as pastoralists, farmers,

migrants, host community leaders (HCL), local government officials (LGO), and the ministry of environment officials (MEO). These categories were combined into groups using the computer-assisted qualitative data analysis software NVivo 12 and 14. First, the data was organised into tabulated forms to show regularities and patterns for comparison. Second, the collected data was analysed thematically, and word frequency and text queries were run to detect the main subject matter. Finally, the analysed themes, word frequency and text queries were coordinated in nodes to develop the themes, and instantaneously identify connections and organisations. In developing relevant child nodes, word and text inquiries were run to find important words; these were compared and combined for patterns and repeated trends (see Figure 3.5) for the path taken to analyse all interesting themes.

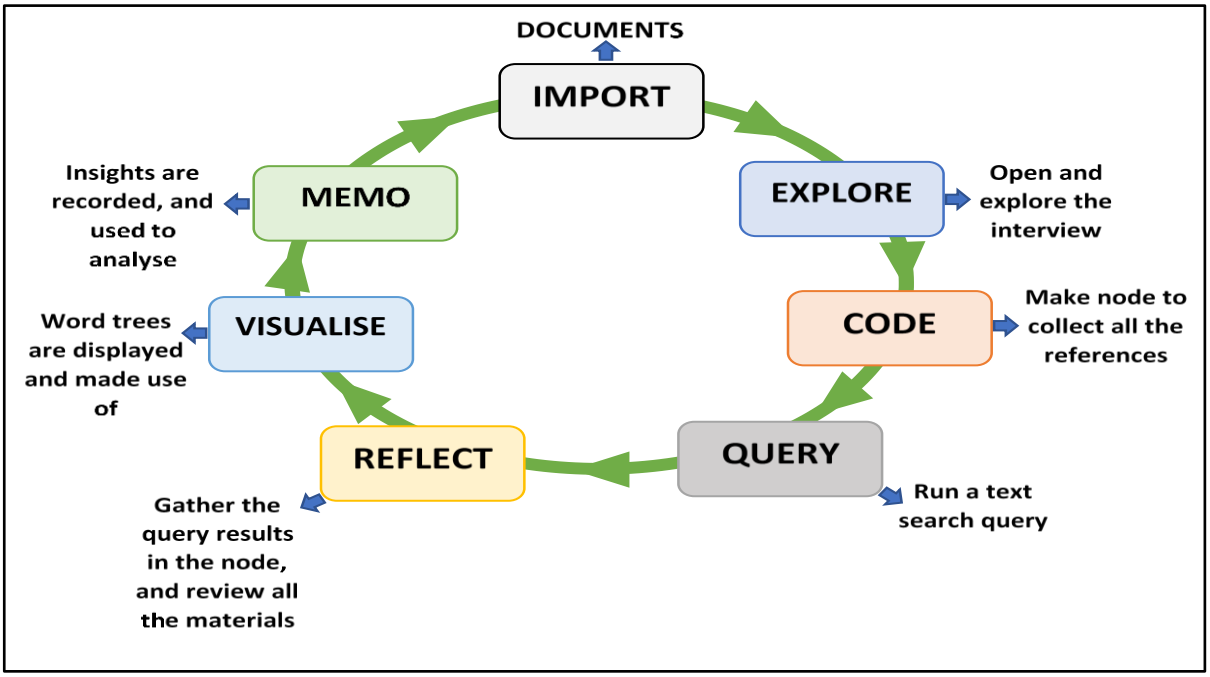

Figure 3.5: Path taken to analyse all interesting themes. (Source: Author, 2021).

Braun and Clarke (2006) argue that the thematic analysis utilised in this research offers a succinct, coherent, non-redundant, and engaging depiction of the data within and across themes. Thorne (2000) urged researchers to communicate the analytical methods used to develop their findings effectively and ensuring that they are easily understandable for readers. In this circumstance, the data set collected, analysed, and discussed in this thesis is credible

and contributes to knowledge.

The application of NVivo 12 and 14 in this study helped qualitative analysis by developing coding frames to represent the main subjects and patterns used in appraising the feedback transcripts. Feedback was represented statistically and graphically. The interpretation was descriptive. Respondent aggregated feedback was represented graphically and statistically, cross-validated and compared against noted reports from the interview, focus group discussion sessions, and current narratives in the available literature. Repeated or dominant feedback is cross-examined by comparison to identify the odd feedback. After coding, frames were integrated into NVivo nodes for comparison and contraction. Nodes help synchronise responses, construct themes and identify links and classifications. Word frequency and text searches were used to discover prominent themes. Word and text queries are performed to locate significant words for the research, and to build additional relevant child nodes in producing word tree maps. These are then compared and pooled to look for patterns and repeating tendencies. The interpretation that followed was descriptive and further enhanced by the word trees produced. The rationale behind the NVivo word tree map use is as follows:

- **Constructing**—Sort themes to build my node hierarchy. Explore alternatives for my node structure—to see what belongs in the same tree or group.
- **Analysing**—This helps develop ideas and visualise perceptions.
- **Determining**—Understand who or what is involved concerning climate-induced migration for adaptation, resource contestation, conflict or process, their relationships, and possible causal pathways.
- **Discovering**—Perceive emerging themes and connections that I might not have anticipated. Reveal any apparent problems or gaps in my data.
- **Explaining**—Express my interpretation of the data. Use evidence to show associations

between climate change and migration used as an adaptation strategy. Communicate my central understanding through analysis by building a compelling visual narrative.

Individually relevant statements were quoted and presented in coded forms to safeguard respondents' anonymity and, in essence, adhere to Harding et al., (1993) and Bos's (2020) analytical framework ethic, which accentuated the importance of respecting participants' viewpoints. From the viewpoint of Christians (2000, p.145), it is crucial to involve research participants in the decision-making aspects of the study, such as determining the research framework, formulating questions, selecting methodologies, and considering the implications and utilisation of the results. This brings about being reflexive in this sense and alert, not only to issues related to knowledge creation, but also to ethical issues in this research (Guillemin and Gillam, 2004; Bos, 2020).

Vital content investigative technique was also implemented in reviewing literature and supplementary secondary resources. The findings were then compared with respondents' dominant views in relation to climate change, migration, adaptation, resource contestation and conflict connections. Table 3.5 presents a list of essential questions used for coding. Straus (1997) suggests that researchers who want to conduct qualitative analysis effectively should focus on developing strong and efficient coding skills. The research's quality relies heavily on how well the coding is done. Additionally, Bryman and Burgess (2002) and Frampton (2020) suggest that data should be coded as soon as possible after data collection and, if possible, even during data collection. As such, data analysis often began in the field and was followed by a more intensive analysis of the transcripts in this study.

Table 3.5: Some interview questions for coding with narratives (adapted from Flick, 2009).

	What are the causes, effects and patterns of internal migration?	It was found that what was once a seasonal migration became permanent because of drought and desertification experienced in the sending region.

What to look for	What did migrants hope to gain from moving to where they are now?	Access to resources-water and fertile land conducive for agro-pastoralist practices to sustain livelihoods was identified.
	What did you observe regarding the presence of migrants and pastoralists in your community?	Overcrowding and poor sanitation concerning the camps set up for these migrants by the government.
	Can you attribute the massive influx of people to the host community to climate change? What is your perspective regarding this statement? Do you agree? Why?	The findings show that adverse effects of climate change contribute to the sudden increase in the number of people in the study site Nogoa, Makurdi, Benue State, Nigeria.
	What are the plans in place for managing climate change-induced migration actions?	This relates to the mitigating aspects established that the government was not up to the task of.
	Suppose a violent conflict ensued between migrants, what are the perceived threats recognised as causes and effects of the prevalent violent conflicts between migrants and the host communities?	A volatile atmosphere resulting from conflict emanating from resource contestation between migrants and people of the receiving area was pointed to.
	What institutional, political or other measures in terms of policy guidelines have been taken thus far to halt the trend and prevent reoccurrence?	It was identified that cogent policy responses/reflection is needed, as well as outside help, especially from countries with the wherewithal to mitigate the adverse effects of climate change-induced migration from the northern to the southern part of Nigeria currently experienced is paramount.

Necessary personal attributes for coding were employed in this study; the researcher was organised, exercised perseverance due to the challenging and time-consuming nature of coding data, dealt with ambiguity-being open to more than one interpretation, and exercised *flexibility*-there might be the need to recode, not just once but twice (and sometimes even more). The researcher demonstrated *creativity* by thinking visually and using metaphors to approach problems from multiple perspectives. Ethical principles were upheld by treating participants respectfully. Maintaining scholarly integrity and working diligently towards achieving accurate outcomes are vital aspects of my analysis. Additionally, I place great

emphasis on using an *extensive vocabulary* to ensure precision in my word choices. Specifically, this study focuses on selecting the most suitable words for codes, categories, themes, concepts, and theories, as Saldana (2016) suggests.

3.7 Ethics and Positionality

This section explained my position and ethical adherence before interviewing respondents, host community leaders, the Ministry of Environment, and local government officials. The investigation focuses more specifically on migrants who migrated from northern Nigeria to the southern region because of the adverse effects of climate change (drought and desertification) and now reside in Nogoa, Makurdi, Benue State, Nigeria. Examining interviewees' responses influenced the write-up of this research (Sultana, 2007).

3.7.1 Ethics

Before conducting the interviews for this research, approval was sought from the Ethics Committee of Keele University. It took a while before the Ethics Committee approved, mainly because of the COVID-19 pandemic that surfaced early in 2019. (See appendix C, p.446 for favourable ethical approval). This slows down the organisation/arrangement of the whole interview process. However, with the support of my very dependable supervisors, *Dr Alexandre Nobajas and Professor Simon Pemberton*, all negative obstacles were surmounted, and the interviews were conducted successfully.

Kanuha (2000) suggests that being an insider researcher provides a more comprehensive and extensive understanding of a population or group than being an outsider. Insider research refers to the practice of researchers conducting studies within a population to which they belong, highlighting the shared identity, language, and pragmatic basis between the researchers and the study participants (Asselin, 2003). My position as an individual of Nigerian descent meant that I was instantly identified as a cultural insider due to a similar

ethnic, linguistic, and social background (Pechurina, 2014), which helped immensely in my interactions with respondents. During the interviews, I successfully followed ethical guidelines and prioritised the opinions of the research subjects (interviewees) above my own, the researcher.

Analysis of the data collected then turned the gaze back on the researcher (Hewitt, 2007). Apart from answering the interview questions, each interviewee was encouraged to ask the researcher personal questions relating to national perceptions, discourses, and media coverage of climate change-induced migration from northern to transit and receiving regions in Nigeria, resource contestation and conflict or any other question deemed related and appropriate. This provided insight into building a cordial relationship during the interview process, with the primary goal of making the interview successful (Hewitt, 2007).

The facts mentioned above appear to be a set of convincing arguments for conducting extensive field interviews for this study successfully, with the principal aim of meeting the interests of the society, the researcher and the community. Hence, the field research is considered appropriate and valuable for this study (Wiles et al., 2006). However, in the real world of research, specific reasons would make one hesitate to perform field research interviews, and, at the same time, reflect deeply on whether the whole process is worth the investment. Similarly, addressing ethical issues is the main challenge in conducting constructive and accurate field research. A researcher must thoroughly know the ethical issues surrounding research and data collection, and ensure that they are addressed accurately, as was done in this research. Treating interviewees as partners is one of the most critical issues that must be considered before and during interviews and discussions. One needs to understand that groups, societies, or communities that are the subject of research are usually not able to object to or authorise the study being carried out (Wiles et al., 2006), and in most cases, the researcher never asks for permission from the villagers or town elders to conduct

the research. This is not the case concerning this research. Appropriate authorities were approached, ethical issues were duly addressed, and all ethical rules were followed before the interviews and discussions were conducted. This was explained thoroughly earlier in the second paragraph of this subsection. (Mitchell and Irvine, 2008).

Furthermore, people usually have no say concerning the research content to be performed. The reverse is the case in this study. It is vital to understand that in the 1980s, much of the social science research in developing countries was associated with protecting the forests and biodiversity. However, it was unfortunate that no attention was given to the well-being and rights of those living around or within those forests, mainly because the focus has shifted since 2006 to the role of protecting the forests and regulating the carbon cycle. Nevertheless, in this study, I ensured that (1) there was an equal balance of power between myself and the experts and host community leaders interviewed who supplied vital information that relates to the people at the centre of the research and (2) my analysis retained a balance between understanding and objectivity.

Currently, the focus has shifted to how to curb climate change. The well-being of people affected by these adverse effects is also paramount since the adverse effects of climate change are disturbing. To some extent, the purposive approach, such as using the interview to ask for people's opinions, can address these problems as was done in this study, even though it is usually not the appropriate mode of research in situations where science is not adequately served by a consultative process (Mitchell and Irvine, 2008).

The release of sensitive information during data collection also raises ethical concerns. Releasing sensitive or private information may cause embarrassment or harm to individuals and community members. As a researcher, it is essential to protect participants' privacy (Arnould, 1998). Therefore, researchers should carefully select their data collection, processing, and publication methods to avoid sensitive information falling into the wrong

hands, especially in face-to-face interviews (telephone/online, in this study). This precautionary measure is appropriate because it guarantees privacy and improves communication, especially for reluctant respondents (Walford, 2005). The researcher ensured the confidentiality of respondents' names to reduce the risk of publicly releasing sensitive information. In this circumstance, the privacy of participants was adequately respected and protected.

The ethical implications of data ownership issues are significant. The idea of relinquishing control of research data falls into the realm of ethics. However, researchers seldom think about it. Any researcher conducting an interview or survey should assume full ownership of the primary data collection (Arnould, 1998). In cases where the local people might be interested in using the primary data for non-academic purposes, such as issues that relate to traditional ecological knowledge or territorial rights, the data can be released, as guaranteed in this research.

3.7.2 Positionality

Exploratory positionality necessitates the researcher to examine how their 'position' in the field may influence their research (Sultana, 2007). Corbin Dwyer and Buckle (2009) noted that the researcher's gender, religion, class, or race and those of the population or group you are perusing are all imperative characteristics, and can identify the researcher as an insider or an outsider.

Certain types of research might stir up negative emotions concerning the topic under investigation, probably due to unexpected outcomes. The researcher might not have intended the outcome, but nothing can be done; even though devastating, it might be for the betterment of humans in the long run. Occasionally, when research findings are published, they may lead to policy changes that clash with the interests of the local community. For example, if a study uncovers widespread illegal forest use, it could result in stricter law enforcement against those

who violate regulations (Mitchell and Irvine, 2008). In most cases, the government authorities usually act against the local people who have opted to become vocal on some issues. It is important to acknowledge that all research endeavours have some relationship with politics and power; therefore, one must be mindful of the consequences when conducting field research, which was adhered to in this research. The main reason the researcher could obtain the necessary current information, and bring this research to a very positive conclusion.

Stance: recognising and understanding research bias is crucial in determining the utility of study results (Galdas, 2017). It is vital to understand that conflicts of interest were avoided when interviewing the Ministry of Environment and Local Government officials and host community leaders. I was aware of this when conducting the interviews and focus group discussions. In addition, I take a critical stance in recognising that every interview and discussion with every individual is subject to interpretation and analysis. I pay close attention to combing and going over written texts of interviews and discussions a maximum of three times for credibility, not relying only on what was said during the interview and discussions, but also on how they say it and describe events under study. Emphasis was placed on examples, evidence and word choice. My role was critically examined with the importance of not being biased and influencing during the formulation of research questions, data collection, sample recruitment, and choice of location. Therefore, the issue of influence that could distort the study results was eliminated (Polit and Beck, 2014).

In this study, the anonymity of respondents was protected in reporting and information processing using nominal encoding systems for the depiction of interviewees. The following are the code names used;

(1) HCL = host community leaders. 4 at the study site.

(2) MEO = Ministry of Environment Officials. 4 at the study site.

(3) LGO = Local government officers. 4 at the study site.

(4) FG = Focus Group. Two rounds: (FGMEO—Ministry of Environment Officials)-6 and (FGLGO = Local Government Officials)-7 at the study site.

Qualitative researchers and other researchers alike are required to be versed in ethics. Agreed conditions/approval from the Ethics Committee on research ethics aid in making the researcher focus on participants' needs and shared concerns, building participants' confidence in the researcher's conduct. In any study that involves people, their welfare is paramount, and number one on the list of what is expected of a researcher (Liamputtong and Ezzy, 2005). Next in line is the research question. Should harm arise, a decision must be made to save the study participant. The frequency of such unfortunate incidents is comparatively scarce in the qualitative approach, and this study has no such occurrence.

3.8 Summary

With this chapter comes the provision of a comprehensive, appropriate method and methodology for the research. It provided information about the theoretical framework, the literature that informs it, and the methods used to apply the framework to the study. The SLF, EV, and FA are developed and presented as three interconnected frameworks linking climate change-induced migration as an adaptation to sustain livelihoods because of lack of basic amenities (resources), leading to resource contestation and conflicts, and to understand how and why someone would leave a sending region for a receiving or destination region. Also, it deliberated on the exercise's logical and theoretic terms and aspects, including research design, the qualitative process implemented in the research, data collection procedures, pilot study, case study, and case selection. It includes the application of content investigation and literature review, respondents' interview methods and procedures, methods used for the sampling size, focus group discussion, data analysis, validity and reliability, ethical issues, and the limitations to the study.

Chapter 4: Stakeholder perspectives on rationales for climate-induced migration

4.1 Introduction

In this chapter, the results were presented and discussed in cognisance of research objective one: to develop a fuller understanding of the influences, rationales, and patterns of internal migration movement and intervening variable (adaptation) due to climate change in northern Nigeria. The provided findings encompassed the perspectives of experts and custodians of custom that are: (the Ministry of Environment Officials (MEO's), Local Government Officials (LGO's), and Host Community Leaders (HCL's) on climate-induced migration to the study site of Nogoa, Makurdi, Benue state Nigeria. Their viewpoints were analysed to identify similarities and differences before concluding. Severe climate change may result in human migration as people are forced to leave their homes because of flooding, extreme drought, and desertification. This displacement makes it challenging to find sustenance in their home regions, which is a key focus of this research.

Internal migration significantly contributes to urbanisation because many people migrate to major cities. This has led to an increase in population in urban areas in many countries worldwide (Tacoli et al., 2014). According to the World Bank (2021), climate change is a powerful driver of internal migration because of its impacts on people's livelihoods and loss of livelihoods in highly exposed locations. By 2050, Sub-Saharan Africa could see as many as 86 million internal climate migrants; East Asia and the Pacific, 49 million; South Asia, 40 million; North Africa, 19 million; Latin America, 17 million; and Eastern Europe and Central Asia, 5 million. (*Ibid*). Ionesco et al., (2015), in a report with a particular emphasis on internal climate migration, noted that all forms of climate-induced migration need to be considered and addressed comprehensively, including trends and patterns of climate-induced internal migration, especially in the least developed countries, must be addressed urgently, requiring assistance from the world's developed nations.

Identified and addressed are motivations for moving to the receiving communities because of climate change-induced resource scarcity at the place of origin. This is in continuation of the discussion in (Chapter 2, subsection 2.2.1, page 56 and Chapter 3, subsection 3.2.1, page 110) on the Sustainable Livelihood Framework entrenched in completing the analysis of feedback from respondents-experts and key informants on migrants' motivations for leaving *(place of origin)* for the host communities *(destination)*, delving deeper into the environmental and economic factors that play a significant role in migrants' actions in this section.

4.2. Climate change vulnerability (The northern Nigeria situation)

Agriculture significantly generates income for the government and small-scale farmers in Nigeria, including pastoralists. However, between 2020 and 2022, crop production declined by 47.2 per cent, aggravated by adverse climatic changes affecting Nigeria, particularly in the northern part (Preston, Jolly, and Torrey, 1993; Kareem, 2022). Persistent, prolonged droughts, desertification, temperature increases, and frequent violent storms have affected agriculture in Nigeria, affecting most people living in the rural parts of the country, who are currently the most affected by these conditions. The rural population face reduced food production, and vulnerability to a lack of food will further increase food insecurity problems, diseases, poverty, malnutrition, and the escalation of conflicts within communities over land (Commission for Sustainable Development, 2008). The rural communities of northern Nigeria face reduced agricultural yields of staple crops such as sorghum and millet, among other plants grown in these areas, leading to vulnerability. This has resulted in a rise in hunger and the practice of begging for alms, particularly among children of the Almajiris system, who are sent to Quranic schools to acquire Islamic knowledge (Fakoya, 2009). Notably, adverse weather effects have contributed to the migration of most communities from the northern region to the southern region. In the past, this phenomenon occurred during the dry season;

however, currently, migration transpires throughout the year (Meier et al., 2007; Koko and Abdullahi, 2012).

4.2.1 Drought/lack of water

Interviews were conducted with experts to gain insights into the experiences of individuals in the sending region regarding vulnerability to water scarcity. The Ministry of Environment and Local Government officials are the designated experts in this case. The expert comments presented concentrate on the susceptibility of communities to water scarcity, specifically in the northern region. Both experts underline the formidable obstacles people face in gaining access to water. These conditions include individuals travelling long distances, frequently measured in kilometres, to locate water supplies. This highlights the critical issue of water scarcity in these areas. Ibebuchi and Abu (2023) lend credence to the opinion of these experts based on the results from their studies covering the period of (1979-2022), which show that the northern part of Nigeria has an apparent rainfall anomaly. Therefore, because of the dry northeasterly wind in the northern region of Nigeria, there is a noticeable difference in the average rainfall between the northern and southern parts. The impact of climate change adverse effects drought and vulnerability to drought in the dryland areas of northern Nigeria (Borno, Jigawa, Kano, Katsina, Kebbi, Sokoto, Yobe and Zamfara States) is becoming much more pronounced (Dada, 2021).

The experts lay emphasis on certain demographic groups, such as children, older persons, and migrants with disabilities, who are vulnerable to the effects of water scarcity. These groups face heightened risks and challenges in accessing water and are more susceptible to harm while searching for water sources. The experts also discuss the constraints encountered by the government in efficiently tackling water scarcity. They acknowledge the importance of the government addressing the effects of water scarcity and helping people cope with the difficulties, and also highlight the constraints caused by limited resources. Below are

the quotes from the interviews with two Ministry of Environment officials:

> (MEO-1—Human Resource Department). "I do not know if you understand we were tasked to profile and take care of thousands of people, not hundreds. This brings with it many complex challenges. I can say categorically that lack of access to water makes these people much more vulnerable. We have had stories of how they source for water, trekking so many miles. Where they are found, we have had narrations of how they are waylaid by bandits, depriving them of it. Not only because of these resources that we can say were limited where they come from, but they were also vulnerable because of unscrupulous people raiding their abode in the middle of the night."
>
> (MEO-4—Desertification, Land Degradation and Drought Management Department) "If you want me to be honest with you, we have it on record how access to water is so difficult for various communities in the northern region, to the extent that people walk kilometres looking for water, and in the process vulnerable to harm. There have been multiple reports of migrants frequently being victims of theft and harassment, and we know that the lack of access to water in these parts is caused by drought, but the government does not have enough resources at its disposal to deal with it. We know that children, older persons, and migrants with disabilities are the most vulnerable, and we are trying our best to see to their protection. However, we can only be proactive where adequate funds are available to meet their needs."

Based on the experts' views, one can infer that drought leads to water scarcity and disrupts livelihoods in the sending region. People migrating en masse from drought and famine areas to another community can increase political tensions and conflict due to increased resource competition. For example, compelling evidence shows that drought

significantly exacerbated the violence in Syria (IRC, 2023). Also, in Somalia, the current drought has resulted in 1.4 million people being displaced because of insufficient access to water. This has made many people vulnerable and forced them to relocate (IRC, 2023).

The experts also touched upon the issue of harassment. In response to this issue, adequate care is paramount, especially for women and children who require specific and appropriate protection. They are in a state of particular vulnerability. They are in a state of situational vulnerability, which is context specific and draws attention to potential temporary harm and the actual occurrence of harm based on circumstantial evidence that includes personal, political, economic and environmental situations (Goodin, 1985; Mackenzie et al., 2014, p.9). The inadequate and often harsh conditions in which migrant populations are received at their destination further exacerbate vulnerabilities.

Climate change has significantly impacted agricultural and animal production in northern Nigeria. The erratic weather patterns, marked by drought and other climatic disruptions, have resulted in reduced output and, in certain instances, the loss of agricultural and pastoral assets. Communities that depend on these for survival are affected.

Findings show populations afflicted by the adverse effects of climate change are increasingly using migration to Nogoa as a standard method to adapt and cope with the challenges of climate change. Also, experts emphasise the immediate need for government intervention and measures to tackle climate change and its adverse effects on food security and livelihoods in northern Nigeria. Illustrated below are two experts from the Ministry of Environment quotes:

> "To date, our Ministry has profiled close to 5,000 people in this community because of the established incidence of sudden and unprecedented change in weather conditions in northern Nigeria, with the problems of abnormal rainfall and extreme sunlight during the dry season, properties and farming activities

have been seriously affected. Also, livelihoods and agriculture productivity have been badly affected due to vulnerability to these climate variabilities; thus, it is the main reason so many people we profiled stated as the cause of the movement to Nogoa, which I can translate to be an adaptive measure to survive. There is the need for" (MEO-3—Human Resource Department)

"It is now important to raise awareness that climate change is already impacting the food security and nutrition of the most vulnerable people, and if action is not taken quickly, climate change adverse effects will extend to major parts of the northern Nigeria. This is another reason for the government to take ambitious action to address climate change in Nigeria. We are at liberty to witness the adverse effects of drought in so many communities. In these communities, agricultural and livestock production is dead, leading to vulnerability and people moving to other areas." (MEO-2—Desertification, Land Degradation and Drought Management Department).

Nigeria is witnessing climate-related shocks which are triggering displacement. People are leaving their communities seeking better expanses that can sustain their livelihoods. IOM (2003) posits that 9.3 million people were displaced in Nigeria because of climate change adverse effects, with the majority in the northern parts of Nigeria seriously affected. It is the submission here that pastoralists southward migration in search of pasture is because of climate change adverse effects of drought and desertification (Mfon, 2023). Thus, findings show that households in the northern parts are highly vulnerable because of exposure to drought and desertification, which leads to the depletion of soil fertility. Climate change is a major challenge in northern Nigeria. It significantly affects people's health, homes, agro-pastoralist practices, and the natural resources many depend on to survive. The research conducted by Madu (2016) reveals that the level of vulnerability to climate change differs

between the northern and southern regions of Nigeria. Thirteen of the thirty-six Nigerian states experiencing high vulnerability were in the country's northern region and are identified in Figure 4.1 and Table 4.1 below.

Table 4.1: Vulnerability to climate change by the state in Nigeria. (Source: Adapted from Madu, 2010; 2016). N. B: A lower value shows greater vulnerability).

State	Geo-political zone	Vulnerability index NB: Lower value indicates more vulnerability
Sokoto	North west	2.11
Kebbi	North west	2.27
Bauchi	North east	2.87
Kaduna	North west	3.06
Gombe	North east	3.08
Kano	North west	3.08
Jigawa	North west	3.12
Yobe	North east	3.14
Katsina	North west	3.20
Borno	North east	3.25
Zamfara	North west	3.54
Plateau	North central	3.87
Niger	North central	4.03
Taraba	North east	4.70
Adamawa	North east	5.22
Ebonyi	South east	5.33
Nassarawa	North central	5.50
Cross river	South-south	5.54
Kwara	North central	6.76
Akwa Ibom	South south	7.16
Kogi	North central	7.34
Ekiti	South west	7.70
Bayelsa	south-south	7.79
Delta	South- south	8.21
Edo	South south	8.65
Benue	North central	8.86
Osun	South west	9.17
Ogun	South west	9.68
Ondo	South west	9.71
Abia	South east	9.79
Oyo	South west	10.29
Imo	South east	11.26
Anambra	South east	11.33
Rivers	South south	11.64
Enugu	South east	12.68
FCT	North central	16.51
Lagos	South west	24.78

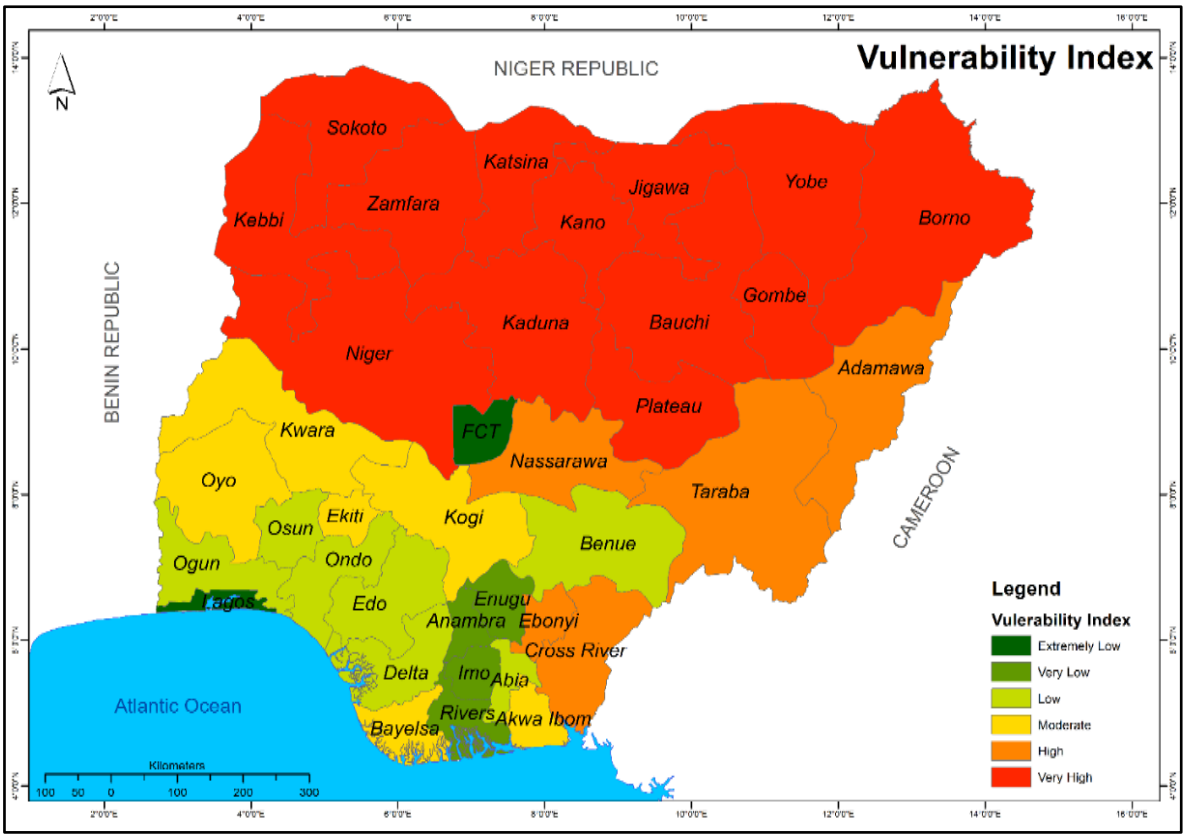

Figure 4.1: Map of Nigeria identifying patterns of climate change vulnerability in each state. (Source: Adapted from Madu, 2010; 2016).

While the southern part of the country is becoming wetter, the northern part is becoming drier, leading to mass migration from the north to the south region (Kabara, 2013; Olasupo, 2014; Sawa et al., 2015; Madu, 2010; 2016; Ikhuoso et al., 2020). UNHCR (2009) estimated that seven million vulnerable people face food insecurity in northern Nigeria because of a never-ending drought caused by climatic changes affecting the water supply. Climate change can add to and worsen the threats that force people to flee their homes. The interplay between climate, migration, resources and conflict dramatically increases the complexity of refugee emergencies. Forced displacement can lead to tension and conflict if competition for natural resources is augmented (Thomson, 2019).

In their research, Nor Diana et al., (2022) emphasise the significant contribution of agriculture to the global economy and its essential role in the lives of those who rely on it. It

is a significant contributor to GDP, accounting for 4% of the global total and up to 25% in some least-developed nations, and is also essential to economic growth (*Ibid*). Agriculture helps reduce starvation, increase income, and improve food security for people in northern Nigeria who live in rural areas, including agro-pastoralists whose primary source of income is agriculture. Farmers not only ensure that everyone has food to survive, but also contribute significantly to the economy and offer crucial employment in rural areas. Agriculture is at the core of environmental vulnerability for people in the northern region and is a significant concern of natural resource management, such as land degradation, water scarcity, deforestation, and threats to biodiversity (Adebo and Ayelari, 2009). Agriculture is a primary sector that mostly depends on climate variables (Dinar, 2009).

The findings in this chapter aligned with that of Madu (2016), who posits that the country's northern region is experiencing a heightened climatic change compared to the southern zone, which is the least vulnerable. According to Madu, of all the geo-political zones in Nigeria, the vulnerability pattern shows that the northwest zone, with an average index of 2.91, is the most susceptible, followed by the northeast (3.71) and north-central (7.55) zones. The southwest geo-political zone has an index of 11.89, followed by the southeast (10.08) and the south-south zone (8.17). The same pattern is observed in rural areas, with rural areas in the north having higher degrees than those in the southern region (Madu, 2016). In reality, climate change challenges do not stop at national borders; the main reason it requires joint action and cross-border cooperation to solve the problem. In addition, Kamta, Schilling, and Scheffran (2020) noted that the northern Nigeria region is characterised by harsh environmental conditions, drought and desertification.

4.2.2 The felling of trees and agricultural practices

The act of deforestation has immediate consequences for agricultural practices in the region. The depletion of trees has a detrimental impact on the microclimates, soil fertility, and

water retention capacity in the area, thereby undermining agricultural output. Agricultural activities such as growing crops and raising animals are negatively impacted, resulting in reduced food production and financial difficulties for communities that depend on agriculture for survival.

The reliance of the bulk of the population in northern Nigeria on agriculture and animal production exacerbates their susceptibility to the adverse effects of climate change. Deforestation leads to food poverty and livelihood activities in the region, affecting agricultural activities/food production. This made communities more vulnerable to environmental risks and economic instability.

Deforestation disrupts ecological balance, reduces carbon sequestration, and exacerbates climate change impacts, such as erratic weather patterns and increased temperatures. The issues of deforestation and unethical agricultural practices were highlighted by an expert from the Ministry of Environment, who emphasised the implications for the people of Nigeria. Below is the excerpt from the interview:

> "Felling of trees for years for cooking has contributed to the adverse effects of climate change that people are experiencing in the north of Nigeria, and this has affected agricultural practices affecting crop yield, leading to people being vulnerable to climate change because the majority of the population in northern Nigeria depends heavily on crops and livestock production for survival. Farming and crop production are the main economic activities of people in this region. The populace direly needs help." (MEO-4—Desertification, Land Degradation and Drought Management Department)

This statement shows that deforestation is a significant contributor to climate change, even though the longstanding issues of inadequate infrastructure and socioeconomic factors that affect rural areas in Nigeria, particularly the northern region should not be put aside

(Madu, 2010). The vulnerability to climate change is influenced by various factors, including the number of dependent households, rural population, farm holdings, fuelwood usage for cooking, illiteracy rates, and the total land area used for agriculture. These features are striking characteristics of rural areas in northern Nigeria, and the effect is that the more a region is connected with these variables, the higher the vulnerability to climate change (Madu, 2010). There is a pressing need for assistance and intervention to tackle the interrelated issues of deforestation and unethical agricultural practices that exacerbate climate change, which affects agricultural sustainability in the affected regions in Nigeria. This statement underscores the critical situation that local communities are dealing with and emphasises the significance of collaborative efforts to decrease deforestation, encourage sustainable land management practices, and improve resilience to climate change impacts by introducing sustainable programmes.

Therefore, with these variables, it can be argued that the adverse effect significantly affects people's livelihood in northern Nigeria. Because of climatic change, there has been a serious threat to the agricultural system. The impact has been the loss of food security in the region. Emphasis must be placed on the effects of climate change on agricultural productivity because it affects people's lifestyles and causes internal migration (Ati, Stigter and Oladipo, 2002; Morton, 2007; Abraham and Fonta, 2018). Therefore, it is essential that environmentally and agriculturally sensitive technologies and innovations are provided to improve agricultural productivity.

The IPCC emphasise on three critical elements in assessing vulnerability: The first is sensitivity, which refers to how well a system responds to changes in the climate system, including their beneficial or harmful effects. The is the system's (or population's) adaptive capacity, which refers to the extent to which changes in the processes, structures, or practices to mitigate or offset the damage caused by climate change. The third element is the scale of

physical susceptibility, which is determined by the system's exposure to climatic hazards (IPCC Fourth Assessment Report, 2007: p.89).

In their research, O'Brien et al., (2007) pinpoint two forms of vulnerability that have emerged because of climate change. They are outcome and context vulnerability. Outcome vulnerability is defined as the "linear result of the projected impacts of climate change on a specific exposure unit (which can be either biophysical or social), offset by adaptation measures. Where the result of the analysis is an outcome that can be attributed to climate change" (O'Brien et al., (2007: p.76). Contextual vulnerability on the other hand is derived from a 'processual' and multidimensional view of interactions between the climate system and society, in which climate variability and change are viewed as occurring "in the context of political, institutional, economic, and social structures and changes, which interact dynamically with contextual conditions associated with a specific exposure unit" (O'Brien et al., 2007: p.76). While the first is associated with a scientific or pedagogical framing of climate change vulnerability, the second is associated with a human security framing of climate change from the perspective of its context-defined sensitivities. These two frames lay emphasis on different knowledge systems and policy responses to addressing climate change challenges, and it is evident that there is an interdependent relationship between changing biophysical conditions and vulnerability. Climate change alters biophysical conditions, altering the context and capacity to respond to other changing processes, such as the economy or political structures. As a result, reducing vulnerability entails adjusting the context in which climate change occurs so that individuals and groups can adapt to the changing weather conditions (O'Brien et al., 2007).

Rose (2010) recognised ethnic factors that may influence climate change vulnerability, and posits that nations defined by tribal identities will probably face the most significant impacts from climate change because of several factors that disadvantage those societies

compared to non-tribal societies facing similar exposures. Long-standing close links between people, their livelihoods, and their land or other natural resources are among these factors. As a threat multiplier, climate change exacerbates vulnerabilities by negatively affecting the supply and distribution of natural resources, potentially exacerbating instability in some of the world's most volatile regions (CAN, 2007). According to Rose, such societies are also characterised by ecosystem-dependent capitals or limited non-diversified economic bases, leaving populations vulnerable to climate shocks. Furthermore, they are hampered by a lack of technological innovation and the practice of subsistence-level production activities in relation to farming or fishing at the communal level. Rose's position is supported by Obioha (2008), who accentuate on the relevance of the interpolation of environmental and cultural factors to violent conflict over land and natural environment resources in Nigeria's northeastern region and other states. Conflicts involving the Tiv/Jukuns and other groups in Benue, Taraba, and Nasarawa that resulted in over 200 civilian deaths in October 2001 were on tribal and ethnic grounds, showing that climate change adverse effects are intensifying ethnic and cultural clashes in Nigeria (Folami and Folami, 2013).

The European Climate Adaptation Platform (2014) posits that assessing vulnerability often involves analysing expected impacts, risks, and the capacity of a region or sector to adapt to climate change effects. As such, analysis of actual or potential impacts on Africa, Asia and Latin America shows that marginalised, primary resource-dependent populations are more vulnerable to the risks of adverse effects of climate change because of high reliance on climate-sensitive resources for subsistence, compounded by systemic challenges ranging from ineffective political institutional capacity to overpopulation (Leary et al., 2006; Leary and Kulkarny, 2007). In their study, Barnett and Adger (2007) highlighted the connection between natural resource dependency and vulnerability to climate change. The vulnerability (potential for loss) to climate change is influenced by the reliance on natural resources and ecosystem

services, the sensitivity of these resources and services to climate change, and the adaptability of individuals to climate changes and the use of these resources and services. In other words, the more people rely on climate-sensitive natural resources and the less they rely on economic or social capital, the more vulnerable they are to climate change (Barnett and Adger, 2007: p.641). This is true for people migrating from the north to other parts of Nigeria, searching for resources, such as water and fertile land, to cultivate crops and cattle grazing.

Barnett and Adger (2007: p.643) posit that vulnerability to climatic stress feeds into broader social, political, and social factors such as poverty, lack of social, institutional, or political support for affected communities, access to economic opportunities and the cohesiveness of various groups in the community. These added together, inform us how vulnerable migrants in Nogoa, Makurdi, Benue state, Nigeria are, according to the research findings.

Brooks (2003) contends that a meaningful vulnerability discourse must address a specific system concerning a particular hazard or range of hazards, highlighting the dynamic nature of human and ecological systems in vulnerability assessment. There are two main categories for vulnerability definitions in the climate change literature, as outlined by Brooks: one views vulnerability in terms of the amount of (potential) damage caused to a system by a specific climate-related event or hazard and the second views vulnerability as the state or condition existing in a system, which in this case can be attributed to the state not having effective policies and programmes in place to address the problems people face.

Climate change impacts cut across regions, but the degree of vulnerability to climate-related risks is shaped by distinct factors and the ability to adapt to environmental changes. These factors depend on how well one can adapt to environmental changes; consequently, underdeveloped nations with limited ability to adapt are typically more vulnerable than their developed counterparts (Leary and Kulkarni, 2007). In supporting this point of view, the

United Nations identified the least developed countries (LDCs) and small island developing states (SIDS) as particularly vulnerable to climate change. It stated that every developing country would face additional challenges, including difficulties in implementing international mandates such as the Millennium Development Goals (MDGs) (United Nations, 2008).

Leary and Kulkarni (2007) posit that vulnerability to climate change will be greater in developing countries because of social, economic, and environmental conditions that increase susceptibility to adverse effects or a lower capacity of vulnerable populations to cope with climate-related hazards. This may explain Carter and Jones' (2007) suggestion that a thorough understanding of the peculiarities of the context in which vulnerability is experienced is required to grasp its implications properly. The higher level of exposure in developing regions is exacerbated because most developing countries are located in low latitude areas, where they are expected to be more vulnerable to climatic hazards than countries at higher latitudes (Leary and Kulkarni, 2007: pp.9-25; Carter and Jones, 2007).

Olufemi and Samson (2012) stated that the degree to which socioeconomic systems in vulnerable societies are likely to be affected by adverse effects of climate change is a function of three factors: (1) the level of vulnerability assessed in terms of the extent to which societies depend on natural resources and ecosystem services; (2) the extent of sensitivity of these resources and services to changes in climate; and (3) the adaptive capacity of the society to changes in the quantity or quality of those resources and services.

These findings show that two of the hazards resulting from climate change, affecting people in the sending region imperative for this thesis, are drought and desertification in Nigeria, with the majorly affected being the northern region, fuelling migration used as an adaptation strategy to the study site and other parts in the southern region. According to Haque (1999), these hazards displace individuals by destroying houses, land, and other physical assets and goods. The International Organisation for Migration (2016) reported that families

were relocated from Maiduguri in north-eastern Nigeria to the Bakasi IDP camp in southern Nigeria because of their vulnerability to climate change adverse effects. Over 10 million people in the northern part of Nigeria have been displaced, a staggering number because of expanding desertification that has caused the disappearance of 200 villages, fuelling migration that is already affecting Nigeria's stability. Currently, enormous pressure is placed on Nigeria's middle belt (Werz and Conley, 2012).

4.3 Migration as adaptation - Who are the people migrating? and from where

As stated by the International Organisation for Migration (2023), when people decide or are forced to move due to environmental and climatic changes, whether sudden or gradual, their mobility is an adaptation strategy that allows them to minimise harm to themselves and/or improve their overall lives for the better. Migration can be planned and managed to relieve pressure on increasingly inhospitable areas where irreversible degradation occurs, and communities are repeatedly exposed to natural hazards that destroy their livelihoods, as in most parts of the northern Nigeria. The strategic implementation of this migration plan can effectively mitigate the pressures on ecosystems, while at the same time upholding the interests and rights of communities. This can also reduce the likelihood or occurrence of conflicts over diminishing natural resources, as well as tragedies associated with irregular migration, ranging from illegal smuggling across borders, which results in high death tolls, to human trafficking (IOM, 2023).

Through legal migration channel schemes, temporary and circular migration can be implemented to promote livelihood diversification in areas facing gradual environmental degradation. Mitigation and adaptation efforts can allow populations to continue to live and thrive in these areas. Voluntary and well-controlled migration can also help (IOM, 2023).

Identifying climate migrants is difficult, especially in regions rife with poverty, violence and conflicts. As a result, I explore the fundamental characteristics of migrants using

the information supplied by the experts tasked with profiling and caring for these migrants in their jurisdiction because of the COVID-19 pandemic, which made it impossible to access these migrants and conduct planned interviews. I begin by finding out about the people migrating from experts' and community leaders' feedback. Knowing why people migrate to the host community is a definitional help in applying the reason to policy governance response analysis integrated into this thesis. (See chapter 6, page 239). The key migrants identified were farmers, agro-pastoralists, and labourers, based on the feedback of experts from the Ministry of Environment and Local Government officials.

4.3.1 Gender, marital status, and age of migrants

Demographics are the classification, collection, and analysis of broad characteristics of groups of people or populations. In this section, the demographic characteristics of migrants to Nogoa, Makurdi, Benue state, Nigeria were identified according to the Ministry of Environment and Local Government Officials interviewed. Males and married people are between the ages of 50 and 70, with the number of households ranging from one to nine. The female and married are between the ages of 25 and 50 years old, ranging from one to six households.

Migrant individuals' demographic characteristics are spread as follows: Males who are married and between the ages of 50 and 65 years old, with a household size of one to seven, while females who are married and between the ages of twenty-five and fifty-five years with a household size of one to 5.

4.3.2 Sending region

Based on the information supplied by respondents from the Human Resource Department, the states in (Figure 4.2) show/constitute predominantly where migrants, including agro-pastoralists, came from. According to the experts (Ministry of Environment and Local Government Officials) interviewed, these are thirteen frontline states of the northern

Nigeria that are very close to the Sahel region or Sahelian acacia savanna where a large-scale, drought-induced famine occurred between 1970 and 1993, and February to August 2010 (Essoungou, 2013). It is one of many famines that have recently hit the region.

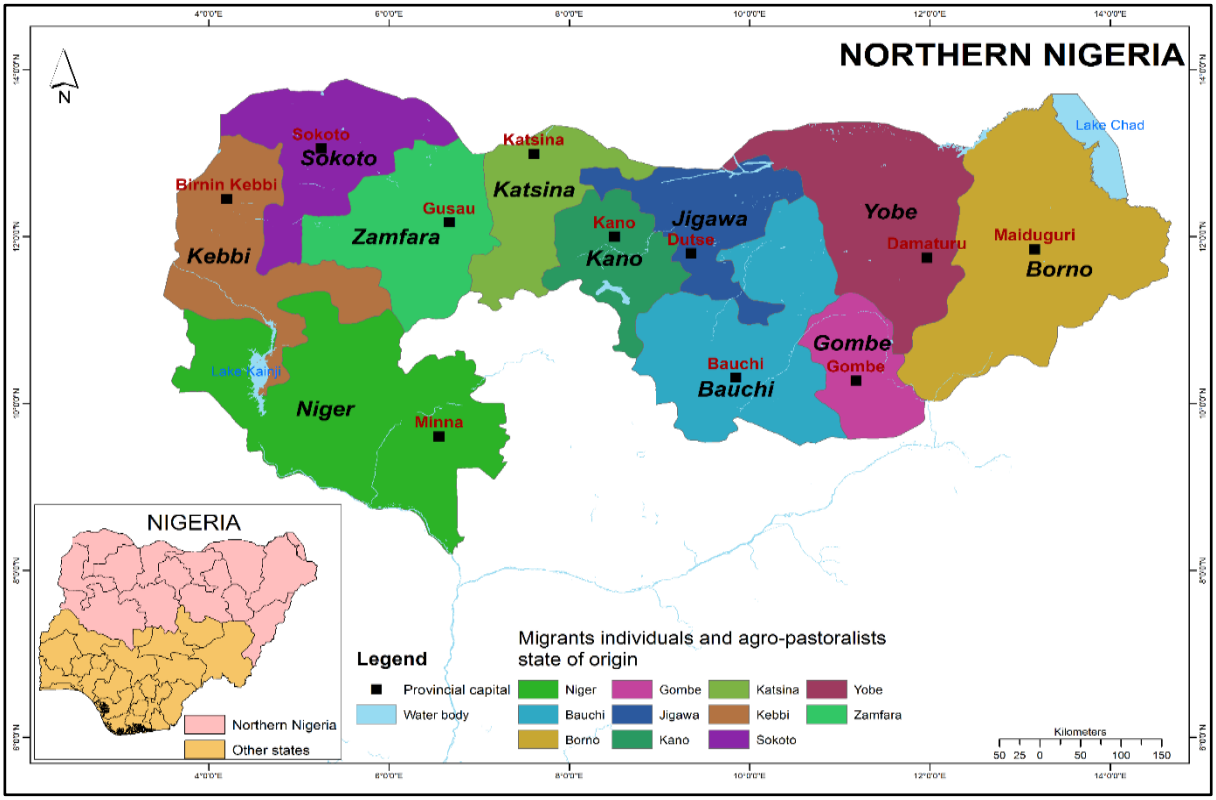

Figure 4.2: Migrants' individuals and agro-pastoralists' places of origin. (Source: Author, 2021).

These thirteen frontline states are prone to drought and desertification, hence the reason there are daily occurrences of out-migration to other regions in Nigeria. The effect of drought on the northern frontline state is devastating, with severe implications for food supply, exacerbated by shrinking water levels. For instance, in Yobe State, one of the areas severely impacted by drought and recognised as one of the thirteen drought and desertification frontline states in Nigeria, the challenge of drought has significantly reduced the productivity and attractiveness of agriculture, which serves as the primary occupation for over 80 per cent of the 2.3 million population in Yobe (Olagunju, 2015).

Waldinger (2015) noted that short-term weather events and long-term climate change

might affect people's migration decisions because they may directly affect their living standards and income, both presently and in the future. In particular, people working in the agricultural sector are expected to be involved. Thus, the established rationale for migration is centred on adaptation to sustain livelihoods.

Using migration to adapt to the adverse effects of climate change is an important theme that needs to be scrutinised in this thesis. The term "adaptation" expresses two key features since the 17th century: (a) the adaptation process and (b) adaptation as a result. Dorlöchter-Sulser (2012) explained that Darwin first introduced adaptation in (1869). According to Alland (1975, p.60), this approach was subsequently adopted by anthropologists to explain the mechanism at work for continuity and change in human societies, followed by some reference to adaptation in migration research during the 1970s (see Lewis,1982, pp.151-189), but with less theoretical influence on later academic discussions on migration.

The Ministry of Environment and Local Government Officials-stakeholders lay emphasis on migration as an adaptation strategy for communities facing adverse effects of climate change, particularly in relation to the sustainability of livelihoods. They emphasised that migrants are forced to relocate because of the limited availability of vital resources like water, food, and shelter in their home regions. The harsh environmental circumstances, such as drought and unpredictable rainfall patterns, have greatly affected the accessibility of these supplies, rendering life in their original habitats increasingly difficult.

Also, migration is identified as a reaction to the failure to fulfil fundamental needs to sustain livelihoods in the migrants' originating places. Migrants seek refuge in locations that offer greater accessibility to vital resources such as water and arable land. Individuals decide to migrate because they have lost their means of living and the need to provide for themselves and their families.

The complex interplay between environmental degradation, resource scarcity, and

migration dynamics in the sending regions contributed to out-migration. When humans are faced with these problems, living becomes a misery. These problems cause suffering and discomfort, a state of significant unhappiness and emotional distress.

In identifying these problems encountered in the sending region, people's aspects of self-esteem are affected. It is clear that climate change has caused habitat degradation and hampered access to basic necessities required to sustain livelihoods. This is where the *sustainable livelihood* approach takes effect. In line with the Sustainable Livelihood Framework, the decision to migrate is influenced by five broad categories of drivers: demographic, social, cultural, economic, political, and environmental (Foresight, 2011). In the populace's case investigated in this study, even though the primary cause was environmentally related, these categories are in tandem and valuable for concluding this study. Why? "*Migration posed geopolitical challenges*: Unplanned and uncontrol migration may become much more common in the future due to a fragmented social, political, and economic governance structure, as highlighted by Foresight (2011: p.3). Thus, the importance of laying emphasis on climate change induced-migration in Nigeria, taking into consideration adaptation, resource contestation and conflict aspects in analysing migration from the sending to transit and receiving region, especially the study site of Nogoa, Makurdi, Benue State, Nigeria.

Respondents shed light on the state of affairs in the sending region, where migrants vacated for the host community. Experts from the Ministry of Environment in Nigeria provided in-depth explanations clarifying individuals' migration decisions. This decision was driven by the urgent need to escape the harmful impacts of climate change and secure access to essential resources like water and fertile land. Below are excerpts from their responses complemented by a word tree visual of keywords from respondents concerning the adverse effects of climate change drought and desertification ravaging the sending region where

migrants came from. (see Figure 4.3).

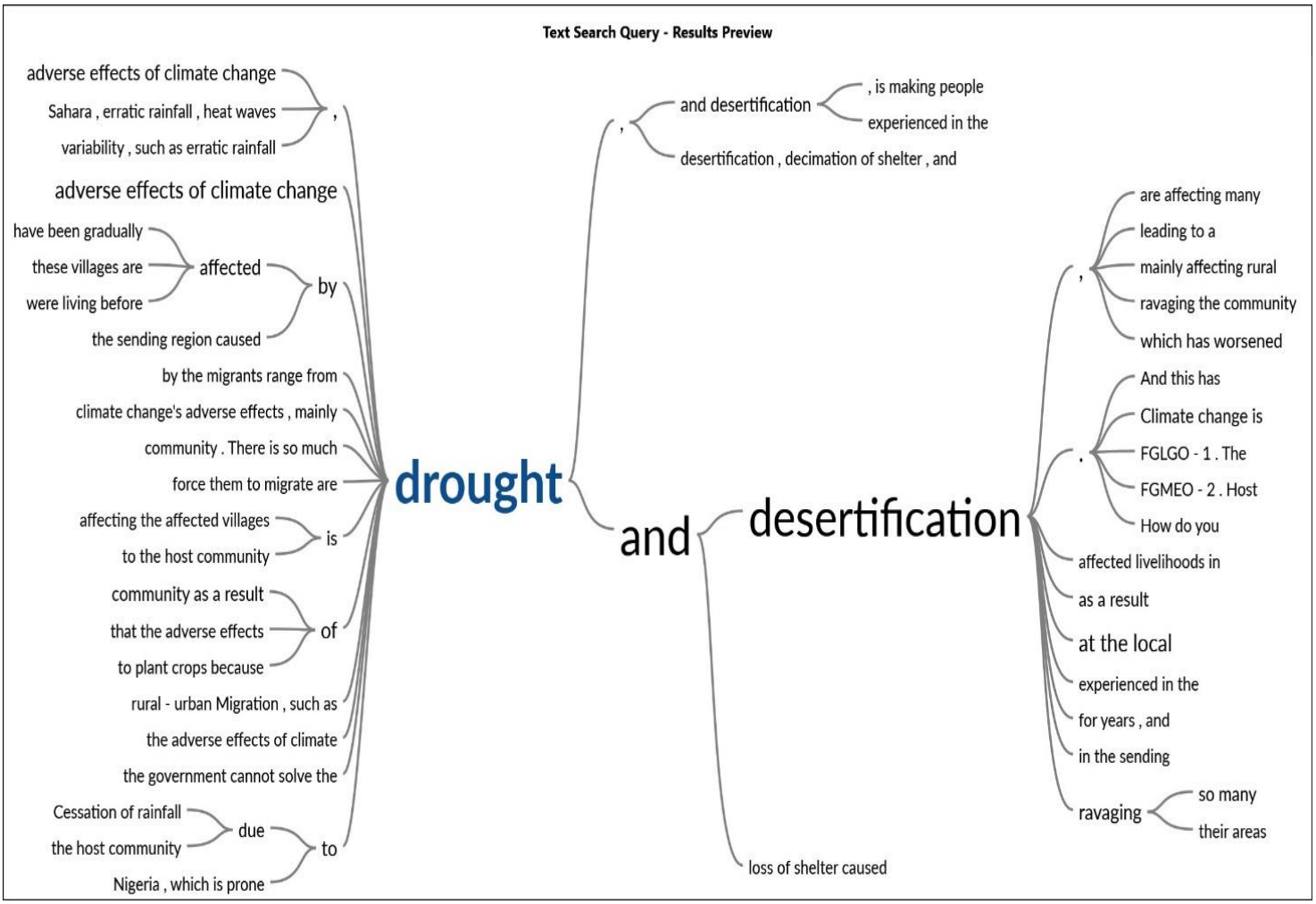

Figure 4.3: The impact of climate change in the sending region. (Source: Author, 2023).

> "According to the migrants, drought and desertification have affected their place of origin. Lands are destroyed, and shelters are affected. They informed us they had nowhere to go but to move to the country's south. For several years, migrants have narrated how they could not grow crops in their place of origin. There are drought and desertification problems in their hometown. This has been the case for years because we in the ministry, especially in our climate change department, are aware of what the people have been going through in the sending region for years" (MEO-4—Desertification, Land Degradation and Drought Management Department).

(MEO-2—Department of Desertification, Land Degradation and Drought Management) buttressed the statement of MEO-4 stating:

> "The migrants kept complaining about their communities being affected by the adverse effects of climate change. The main reason they moved to where they are now. This has been happening for several years, but they endure until the situation or condition was unbearable in the communities they vacated. People in our care stated that water is fundamental to agricultural production and livestock breeding to sustain their livelihoods. The scarcity of water in their region resulted in crop failure and the death of some animals. This had a significant impact on their ability to make a living. There was no alternative for them except to abandon their villages. A truly awful ordeal."

The responses show that the sending region has had significant impacts of drought and desertification. For several years, these adverse environmental effects have led to the devastation of lands and habitats. The dwindling availability of natural resources presents a growing obstacle for communities in preserving their livelihoods and implementing efficient farming methods. Migrants from the sending region describe the challenges they face in farming their land due to the persistent drought and desertification. Climate change has caused significant harm to the land, making it infertile and unsuitable for farming. This has led to crop failures and economic hardships for the affected communities.

Additionally, the interview answers highlight the urgent need for proactive measures to address the impact of climate change on vulnerable communities in the sending area. It is crucial to take action to minimise environmental damage, build resilience, foster sustainable living, protect the well-being and livelihoods of affected populations, and mitigate climate-related forced migration.

The impact of climate change on the sending region has been a longstanding problem

recognised by the government departments and ministries, particularly the climate change department. Over the years, the persistence of drought and desertification has exacerbated vulnerabilities and undermined the resilience of local communities. The people of the sending region are migrating to other locations, mainly to the south of the country, because of the worsening environmental conditions. They are seeking improved living conditions and better job prospects.

The findings in this chapter, as reported by the Ministry of Environment (MEO) and Local government officials (LGO), suggest that people who migrated understood the social, political and demographic impacts of climate change, because experts indicated that while registering migrants, they were made aware the reason behind their sudden migration to the host community of Nogoa, describing how their place of origin has been decimated by drought-due to the absence of rainfall and desertification, leading to water scarcity and infertile land, and this has been going on for years. To this extent, climate change adverse effects, mainly drought and desertification, are at play in the sending region, an alteration in the measurable circulation of climate patterns (Brekke and Tannehill, 1947; CCIR-NYC, 2005).

By following the tenets of the Sustainable Livelihood Framework and considering the feedback from respondents, it can be concluded that the adverse effects of climate change in northern Nigeria resulted in an outmigration used as an adaptation strategy to the study site to sustain livelihoods. In this context, "migration as a form of livelihood diversification has been shown to occur after environmental events such as drought and desertification" (Foresight, 2001: p.10). In this regard, the ability of a livelihood to cope with and recover from stresses and shocks from the adverse effects of climate change is central to the definition of sustainable livelihoods, referred to as livelihood adaptation (Davies, 1996).

The respondents offer valuable insights into the migration patterns of people affected

by climate change adverse effects, specifically the pastoralist groups. Below is the excerpt from the interview with an expert-Local Government Official:

> "From my point of view, to get to where they are now, they stated that their primary migratory route is the one they have been taking their cattle through for years, through the Benue Plateau region. It is through discrete routes that are well known to them. In addition, they confirmed that their migration for decades has always been seasonal. During the onset of the dry season in Nigeria, in the second half of October, people, especially the pastoralists, gather their livestock and start their slow migration down south, leaving the care of the village to the elders. But now, because of the adverse effects of climate change, everyone is on the move, vacating their villages in search of water and pastures for their livestock" (LGO-4—Community Development).

The findings show that historically, migrant pastoralists use seasonal migration, particularly at the beginning of the dry season, to locate water and grazing areas for their animals. The adverse effects of climate change, such as desertification and drought leading to water scarcity, have led to the movement of people and pastoralists from the northern region to Nogoa, also, forcing entire communities to abandon their settlements.

Shelter issues arose and were also discussed while enquiring about the migration pattern of migrants to the study site Nogoa. It was established that the adverse effects of climate change affected shelters in the sending region. Shelter is a basic human need crucial for survival. It provides security, personal safety, protection from the weather, and it prevents health problems and diseases. (European Commission, 2021). In this regard, respondents' opinions were sought. Below are the excerpts from the experts' responses-one from the Ministry of Environment and the other from the Local Government officials. Also, Figure 4.4 illustrates a word tree text of the respondents, highlighting key text from their feedback on

shelter problems faced by migrants.

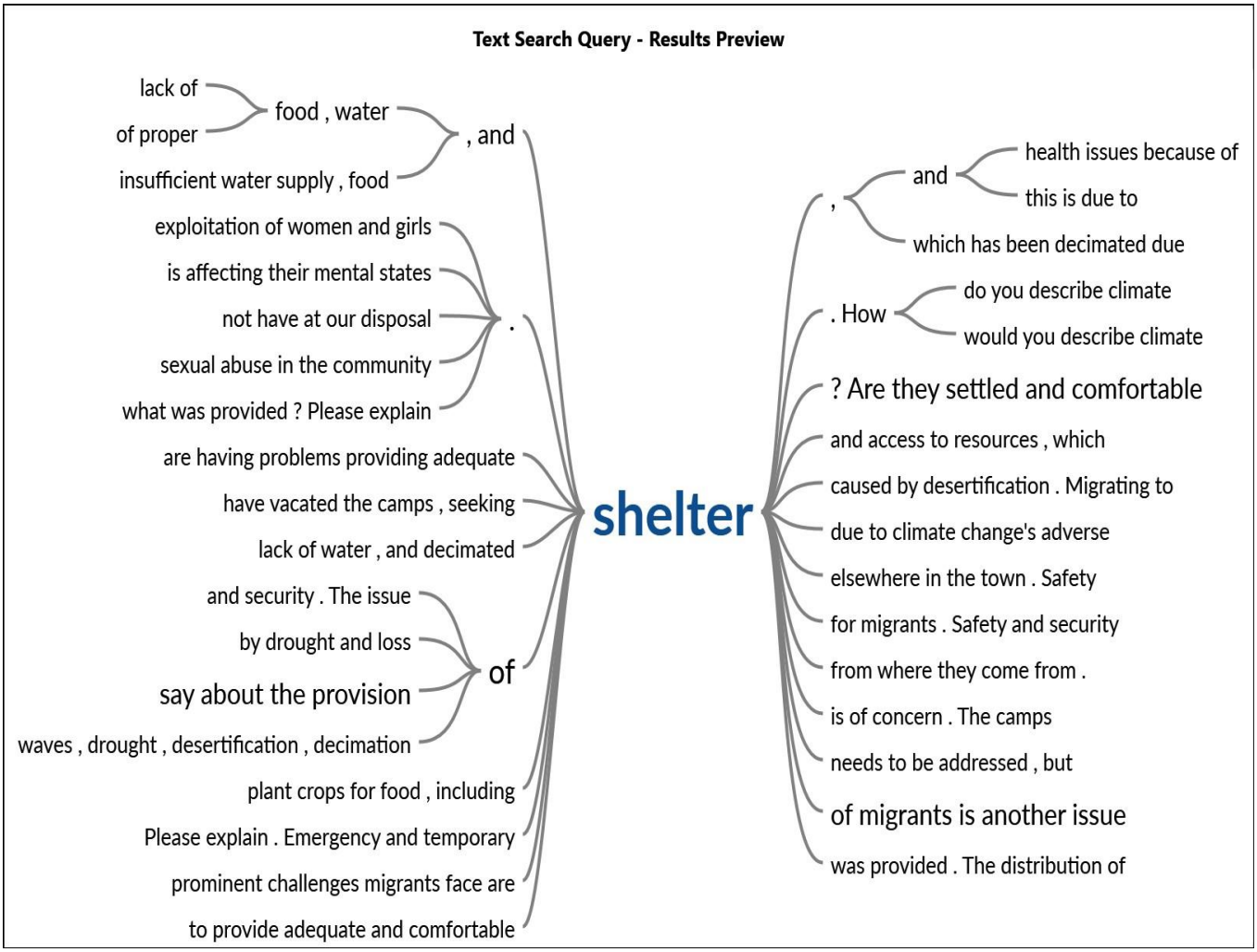

Figure 4.4: Safety-Shelter-related issues (concerning the place of origin). (Source: Author, 2021).

> "Without shelter, people are vulnerable. Having a habitable home is vital to ensuring security/safety; when lacking, people are prone to all sorts of attacks from criminal elements. These migrants categorically narrated to us they could not live in a place where there was no shelter, and they were always in the open, and attacked often by bandits robbing them of their possessions. They stated the only option is to migrate to the host community. There is a narration of how bandits will raid their communities involved in large-scale cattle theft, sexual attacks, extortion rackets, kidnapping for ransom, armed robbery, pillaging, and asking for protection funds to stop them from harassing the migrants. This is a

bad experience that people should not be going through." (LGO-3— Community Development).

"The migrants claim their villages are no longer habitable because of desert encroachment. This phenomenon is more pronounced in the northern region, particularly in the eleven frontline states of Nigeria, which shares borders with the Niger Republic. Truthfully, I agree with what these internal migrants said about the sending region environment not being safe at all for shelter. The Ministry of Environment compiled a report on this years ago and mapped a way out of the situation, but government after the other keeps dilly-dallying due to lack of funds. Also, it is acknowledged that the government has been battling bandits terrorising people in this region. In some cases, kidnapping people for ransom" (MEO-3— Human Resource Department).

Findings show that the sending villages have become uninhabitable because of the encroachment of the desert, notably in northern Nigeria. Desertification, caused by climate change, poses a significant threat to human shelter and safety. It renders shelter impossible in the affected regions, leaving residents exposed to various hazards and vulnerable to attacks from criminal organisations. The absence of secure shelter intensifies the susceptibility of communities, leading them to migrate to safer regions. Experts explained that the migrants complained and described distressing encounters with marauders, resulting in the confiscation of their belongings in the sending area. It is important to note that the safety and shelter they crave are also limited in the receiving region because of competition for resources and conflict with the people of the host community.

As noted in my observation note, the habitable place provided by the government is not conducive. I witnessed a situation whereby vulnerable women and children left the camp soliciting for alms. They face protection challenges in the receiving community. In the

position I saw them in Nogoa, Makurdi, Benue State, they were much more vulnerable to abuse, such as a physical attack, sexual assault and abduction. The concept of safety came into the global policy limelight following the publication of the United Nations Development Programmes (UNDP) Human Development Report in 1994, in which human safety was defined as safety from chronic threats such as hunger, disease, repression and protection from sudden and harmful disruptions in the patterns of daily life-whether in homes, jobs, or communities and as the totality of economic security, food security, health security, environmental security, personal security, community security and political security (UNDP, cited in Dokos, 2008). Climate change mitigation has become a top security issue because of its impact on the environment, a concept now encompassing the collective security of humans and the states. There is concern about the likely increase in hazard events in the absence of mitigation measures (Parson, 2009).

The feedback received confirmed that the pastoralists among the migrants who for years have been in the habit of embarking on seasonal migrations from the north to the south have made it a permanent affair, staying put in the host communities because of desertification and drought experienced in the sending region (Nzeh, 2015; Azuwike and Enwerem, 2010). In essence, in the host community, where there was abundant water and fertile land, they could cultivate and cater for their cattle's needs, and, at the same time, engage in small farming to sustain their livelihood. In this regard, migrating to the host community from the sending regions for survival can be classified as an adaptation to the adverse effect of climate change experienced in the sending areas, but leading to resource contestation and conflict with the people of the host community.

Nordas and Gleditsch (2007: p.529) note that climate change has worsened "the challenges of meeting key human needs such as adequate food, clean water, clean air, and adequate and affordable energy services." Heatwaves and drought can cause famine,

population displacement, disease outbreaks and a decline in the agricultural productivity of rural areas, accelerating migration to the cities. The most significant catalyst for migration in northern Nigeria is climate unpredictability, which is marked by unpredictable rainfall patterns leading to drought and desertification.

Climate change and migration incorporate these three vital intertwined components: adaptive, maladaptive, and survival migration (see Figure 4.5), which are classified as a conceptual schema of climate change migration.

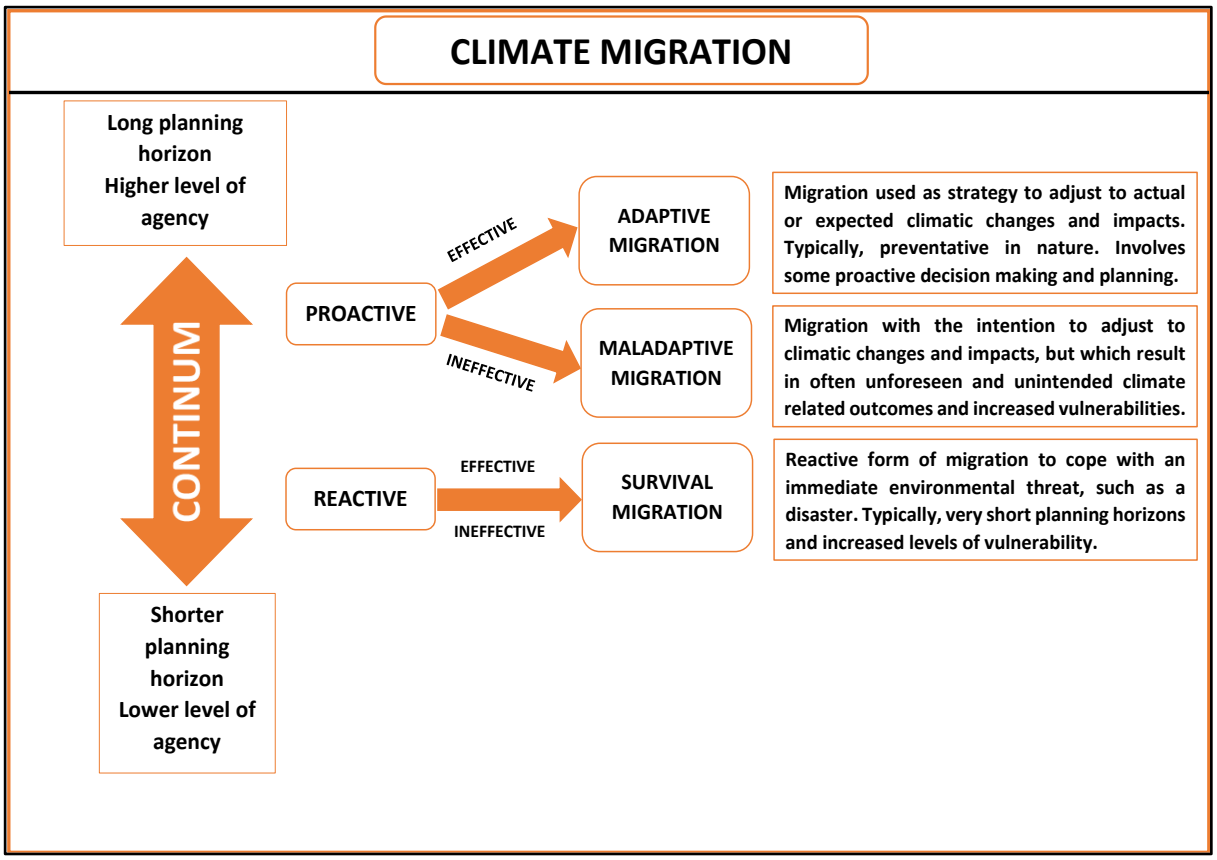

Figure 4.5: Conceptual schema of climate change migration outcomes. (Source: Vinke, 2019).

Mayans (2020) noted that when people no longer have access to necessities of life, such as water, food, shelter, or physical security critical for survival, they adapt by switching livelihood systems or migrating for greener pastures, accordingly leading to security issues that arise "when the capacity of the receiving communities are stretched to a tipping point where interactions and relations become conflictual rather than cooperative" (Adejuwon et

al., 2019). The deduction is that migration as adaptation suggests a positive relationship between migration and adaptation processes involving anticipation and planning (Vinke et al., 2020; Mayans, 2020).

The deduction is that migration as adaptation suggests a positive relationship between migration and adaptation processes involving anticipation and planning (Vinke et al., 2020). For example, in the semi-arid lands of Burkina Faso, Kenya, Pakistan, Senegal, Tajikistan and Tanzania, according to Waldinger and Fankhauser (2015), migration in all its forms is a prominent feature. Internal and seasonal migration has always been and continues to be an important response and coping mechanism to climate stress, which is an adaptation.

In line with the Sustainable Livelihood Framework doctrine employed in this study, one must agree that migration is a means of adapting, and it is paramount that it becomes a successful adaptation strategy through the proper execution of promising programmes and management.

Congregating the diverse views of these experts, individuals from the communities affected in the sending region most definitely migrate to survive and to diversified livelihoods because of the environmental conditions they find themselves. These people's decisions or being forced to move due to climatic changes – whether sudden or slow, their mobility is an adaptation strategy that allows them to minimise harm to themselves and/or improve their overall lives. Thus, the rationale for the out-migration from the climate affected northern Nigeria to the study of Nogoa, Makurdi, Benue State, Nigeria. It is paramount that the Nigerian government come up with science-based mitigation approaches to address drought and desertification issues in the sending region (Yamusa et al., 2015). Additionally, Bibi, Kaduk, and Balzter (2014) suggest that the northern Nigeria has significantly experienced temporal trends and variability in rainfall patterns, calling for effective government policies to address the problem (see Chapter 6, page 261 for policy analysis).

4.3.3 Receiving region

Migration has positive and negative effects. Migration, whereby there is resource contestation, eventually leads to conflicts among people. If care is not taken, it may destabilise a particular region. Environmental degradation leads to migration. It can be concluded that migration is used by households from the sending to the receiving regions as one of the numerous adaptation strategies and is part of a broader process of our socio-economic transformation people use to deal with or adapt to environmental changes or to optimise their "livelihoods." (Fielmua, Gordon, Mwingyine, n.d.).

Community leaders express concerns about the rapid and unregulated population growth in Nogoa due to the influx of migrants. They emphasise on the adverse outcomes, such as disproportionate population density, poverty, elevated crime levels, environmental contamination, political instability, and exhaustion of natural resources. The arrival of migrants has placed significant pressure on the infrastructure and services of the host community, resulting in many social, economic, and political difficulties. This is illustrated in the following excerpts from the interview with the host community chiefs:

> "The arrival of migrants in our community has increased the population. This rapid growth has led to overcrowding, destitution, crime, pollution, and political turmoil. And the rapid growth has affected food production in our community." (HCL-1—Community Chief).
>
> "There is rapid uncontrolled population growth in Nogoa. And the population growth is increasingly coming at a cost, particularly regarding job opportunities for our youths. It has contributed to the depletion of natural resources in our community, and there is so much litter in our community that we have not seen before." (HCL-2—Community Chief).
>
> "I think uncontrolled population growth in the Nogoa community has created chaos. The uncontrolled population growth we are witnessing in Nogoa has

brought social, economic, and political problems." (HCL-4—Community Chief).

It is evident from these quotes that the influx of migrants into the host community has resulted in a significant increase in population, leading to resource contestation and conflict. Most of the chiefs-custodians of customs stated that their presence created unhygienic conditions, crime, and pollution in their community. The chiefs stated the job prospects of host community youth had been affected by the high population growth stemming from the influx of migrants to Nogoa, Makurdi, Benue State, Nigeria. Additionally, the community chiefs who were interviewed expressed that the increase in population has led to heightened security risks in their community. In line with Ruiz and Vargas-Silva's (2017) assertion, uncontrolled high population growth may hurt the labour market, exacerbate resource competition, and damage the environment, precisely what is manifesting in Nogoa. Highlighting the importance of the environment as a human livelihood sustainability factor, Black et al., (2008) explain that push factors will inform human migration in the place of origin caused by factors such as lack of economic opportunities and access to resources on the one hand, and on the other hand, by pull factors at the destination due to the availability of better opportunities, including access to resources which was found in Nogoa. If the population growth continues without regulation, the resources that attract these migrants to the host community will diminish due to competition. This is a major concern if there are no adequate programs or plans for sustainable resource management.

It is imperative to understand that uncontrolled migration creates societal stress, humanitarian crises, and poses a threat to the peace and security of a nation because, without adequate policy and measures to address the situation, it brings with it volatile conflicts, precisely what is happening in the host community of Nogoa. Additionally, the security dimension of climate change is a recurring theme in international security discourse that needs

to be addressed. Climate change-induced migration used as an adaptation is not just an academic inquiry, but essential in the research field. von Soest (2020) posits that environmental stress prompts the decision to migrate as well as a means of adapting to changing environmental conditions, creating high population growth and intensifying competition for resources in the receiving regions. In this sense, uncontrolled high population growth can be a catalyst for resource contestation and conflict.

In terms of the living conditions of migrants, four experts from the Local Government department acknowledged that Nogoa provides a better environment compared to the sending region. As explained, this was the admission of migrants profiled. Experts explained (the migrants) stated that they have access to sufficient food and water and can engage in agricultural and pastoral activities to sustain their livelihoods. Despite encountering hostility from the local community and receiving limited assistance from the government, migrants discover that their new surroundings are far more favourable for their survival compared to the challenging living conditions they experienced in their home region. The following quotes from three experts, who are local government officials, demonstrate this.

> "He chuckled! Their current living conditions are better, compared to the villages where they came from." (LGO-2—Community Development Department).

> "They have enough food and water for themselves and their families. Their current living condition is very satisfying compared to their previous living conditions (the sending regions). Also, at least where they are now, they can plant crops and graze their cattle to sustain their livelihood. Even though the host community is hostile towards them, with little help from the government, they have been able to sustain their lives better than the villages where they came from." LGO-4—Community Development).

> "In the sending region, resources to sustain livelihoods have been decimated. The

main reason they migrated to the host community. They (migrants) must beg and fight in the host community to access water and grasslands. And the government is doing little to douse tension." (LGO-1—Community Development Department).

"As it is, things are better in the host community. The pastoralist migrants' animals are well-fed and robust in the host community compared to the villages they came from. However, they struggle and must plead to access water and pasture for their animals. Out of frustration, they resort to force to gain access to these resources here, leading to conflicts that sometimes create a volatile atmosphere in the community." (LGO-4—Community Development Department).

Judging by the interviewees' answers, it is evident that the migrants are showing a positive and joyful outlook, and are better off where they are now. The belief is that they had turned a corner with their standard of living, which is better in the host community than in their hometown. (The future is bright). Even though migrants are faring better in the host community, pockets of clashes over competition for resources still exist. The shift from a political to a response to awareness, effects, and dealing with the challenge is a significant realism of the climate change discourse (Beardsworth, 2020). Climate change entered the political agenda in 1988 with the Toronto Conference on the Changing Atmosphere and has experienced fluctuations in attention levels ever since, because of climate politics that lead to policy under- and overreactions. Now is the time to create awareness and focus on mitigating climate change adverse effects (Beardsworth, 2020).

Also, the belief is that the lukewarm attitude of the Nigerian government in tackling the problem head-on will only create more problems and instability. On the 18th of November 2021, Nigerian President Muhammadu Buhari signed the country's climate change bill into

law without considering the climate change-induced internal migration issue, which requires implementing efficient policies that address or create adaptive measures that cater to the needs of the people affected. Without up-to-date policies and adequate adaptive measures in place, many impacts of climate change will continue to trigger displacement, worsen living conditions, and cause insecurity for the state.

The respondents' opinions revealed inter-linkages between migration, agriculture, food security, conflict, poverty, hunger, environmental degradation and climate shocks. In this context, the connection between food security and migration can be direct, especially when people have no other option but to migrate to avoid hunger. Moreover, the connections between agriculture, food security and migration can also be indirect and can be used by individuals and households to cope with food insecurity risks (FAO; IFAD; IOM; WFP; 2018). This shows that, without social protection, migration could increase inequality, and inequality transpires when resources are distributed unevenly within a society, typically due to the norms of distribution or natural occurrences.

4.4 Conclusion

The push and pull effect materialised and played a significant role in the movement of migrants to the host community of Nogoa, Benue State, Nigeria. In terms of rationale, the main environmental push factor is limited resources in the sending region because of drought and desertification experienced, which makes this region unhabitable, resulting in the loss of livelihoods in the affected areas. What they lack in the sending region is in abundance in the host community they migrated to, representing the pull factors that attracted migrants to the host community. An example is the Irish potato famine of the 19th century. The Irish people's staple potato was almost completely wiped out. This led to a drastic population decrease of approximately 17%, equivalent to 1.6 million people,

because of starvation and emigration to different parts of the world to attain better living conditions, leaving the Irish government confused about how to curb the trend (Morkyr, 2021). In this case, the threat of starvation is the push factor, while the prospects of the availability of means to sustain livelihoods in countries migrated to is the pull factor. The conclusion is that migration is connected to resource scarcity and conflict.

A comprehensive understanding of the rationale and patterns of internal migration from the northern affected region (sending) to their present location, Nogoa, Makurdi, Benue state, Nigeria (the receiving area) reveals a strong correlation between climate change and migration. Thus, findings in this chapter show that climate change adverse effects, drought, and desertification substantially lead to internal migration in Nigeria. As Ginetti (2015) noted, climate change-induced migration leading to displacement was allowed to manifest because of governance screw-ups and worsened by societal inequalities. This is the case in the sending region where migrants came from.

This chapter has thoroughly and critically addressed the first objective through the lens of the Sustainable Livelihoods Framework. This leads to the establishment of climate change adverse effects-drought and desertification that has decimated the sending region-northern Nigeria, and, in the process, hampers the ability of people to sustain livelihoods, in essence, a *(PUSH FACTOR).* On the other hand, access to abundant resources-water and fertile land conducive for farming to sustain livelihoods, as well as employment opportunities, which can be argued to be the *(PULL FACTOR)* (Lee, 1966). These pull factors allowed the migrants to have access to staple foods, shelter, land, and the opportunity to cultivate compared to the sending region, even though there were few restrictions here and there. This study justifies the importance of filling this gap through the literature by identifying the relationship of migration as an adaptation strategy to climate change by people migrating from the north to the southern part of Nigeria, including the study site Nogoa. Environmental pressures on individuals in

northern Nigeria have led to the mass movement of people, including pastoralists, to the southern part of Nigeria, with severe consequences for the host community's livelihood and security in Nigeria. Water and food are the biggest threats to the sustenance of life in the sending regions. Moving to an area with water, fertile land for farming, and better suited for shelter is the utmost goal of the people in this chapter. The fact that climate change mitigation has become a top security issue shows that its impact on sustenance and security is gradually becoming visible daily for everyone to see. This serious situation requires countries to work together to address climate change and protect the affected populations. Also, this shows concerns about the likely increase in hazard events in the absence of mitigation measures (Parson, 2009).

Based on the findings, this chapter concludes that migration was indeed used as an adaptation strategy to climate change by groups moving out in droves from the northern to other places in Nigeria because their livelihoods have been affected in the sending areas. With the adverse effects of climate change, a whole community or region is destabilised, leading to chaos presently experienced at the study site Nogoa, Makurdi, Benue state, Nigeria.

Armed with this fuller and more complex understanding of migration from the northern to southern Nigeria used as an adaptation to sustain livelihoods due to climate change, I have explored stakeholder views on 'migration as adaptation strategy' to climate change in Nigeria that addressed research objective 1, highlighting and expatiating on the rationale for climate-induced migration and patterns associated. Resource contestation and conflict issues that have emerged because of climate-induced migration used as an adaptation in Nigeria are examined in Chapter 5, which addresses research objectives 2.

Chapter 5: Nigeria and climate-induced migration: resource contestation and conflict

5.1 Introduction

This chapter addresses research objective two and looks at the issues of resource contestation brought about by the demand for resources leading to conflict because of climate-induced migration from the north to the study site of Nogoa, Makurdi, Benue State, Nigeria. The provided findings encompassed the perspectives of experts: the Ministry of Environment Officials (MEO's), Local Government Officials (LGO's) and Host Community Leaders (HCL's), custodians of custom. Economic, political, social and volatile demographic trends concerning sending, transit and receiving areas were discussed. Several studies have noted the importance of socioeconomic and political factors in climate change induce-migration, resources and conflict linkages (Amobi and Onyisi, 2015; Adesina and Odekunle, 2011; Gleditsch, 1998; Ide, 2015; Raleigh and Urdal, 2007). It highlights that uncontrolled migration leads to resource contestation and conflicts in the receiving regions.

5.2 Necessities-resource contestation

Concerning the role of environmentally induced migration leading to resource contestation and violent conflict, a significant concern for policymakers in the Nigerian situation is that sectors such as agriculture, forestry, food and water resources, human activities and habitations around coastal areas, health and tourism, industry and transportation are often noted as highly vulnerable (see Adesina et al., 2010; Federal Ministry of Environment, 2010; FGN, 2009; Oladipo, 2008).

Experts from (the Ministry of Environment Officials (MEO's) and Local Government Officials (LGO's) were asked about the cause of resource contestation and conflict in the host community. The Ministry of Environment and Local Government Officials (MEO and LGO) respondents stated it was over access to resources, land and water to cultivate and sustain livelihoods, and are the main reason, according to the host community leaders, why migrants

move to their community, leading to contestation for these essential resources that are vital for existence. Below are the excerpts of similar views from the feedback from four experts- Two from the Ministry of Environment and two from the Local government. Also, (see Figure 5.1 for the word tree text query of respondents concerning what is at play at the study site in relation to the availability of resources and contestation).

Figure 5.1: Lack of resources for migrating and resource contestation at destination causing conflict. (Source: Author, 2021).

"Without a doubt, these migrants where they come from need these vital resources to survive. Access to these resources is limited, and they cannot survive without them. On a serious note, in the community they are now, there is serious competition for these resources, with the members of the host community not granting access to these resources easily, as a result, we are witnessing serious resource contestation that often turns into violent conflicts among groups. Survival in their place of origin is difficult. Dunes have covered their abode." (MEO-4—Desertification, Land Degradation and Drought Management Department).

"According to the migrant group profiled, the greatest threat to the sustenance of life in their sending village is the lack of access to resources, water and fertile land for cultivation, and where they are now, they are being denied. They narrated how the host community has always been hostile to them and refused to acknowledge their presence in their community. This makes it difficult for them to access wells and land for cultivation. There is contestation over resources in Nogoa." (MEO-2—Desertification, Land Degradation and Drought Management Department).

"Caring for the significant number of people we are assigned to look after makes our job incredibly difficult. Meeting their needs is financially challenging. Many of them, one way or the other, try to fend for themselves by trying to get into agricultural activities, but this has been made difficult by the people of the host community refusing to grant access to their wells and land. We have seen cases where force was used to gain access, leading to violence that resulted in deaths recorded on both sides." (LGO-2—Community Development Department).

"The contestation for resources leads to violent conflicts between the migrants and the host community people. The cause of this is the migrants' forceful attempts to access resources in the host community. Conflict over these

> resources has reached a boiling point. This is a matter of concern for Nigeria's security, as the forceful acquisition of crucial resources by these migrants in the host community is leading to violence. The conflict in the host community is a keg of gunpowder waiting to explode." (LGO-1—Community Development Department).

In this context, from these excerpts, it was established that the frustration of not being allowed access to resources, such as water and fertile land, that have been elusive in the sending region is causing migrants to resort to force to have access to these resources at the study site of Nogoa. This is frustration aggression at play-which suggests that frustration at not being able to achieve something leads to aggressive behaviours and violent conflicts over resources-land and water, thus leading to so many recorded deaths emanating from contestation for these resources vital for the sustenance of livelihoods, which in essence can be termed to be eco violence. An example is an incident of herders in and around Laikipia in the north of Kenya Rift Valley who believed that conservancies and commercial farms were unfairly denying them access to lands and water. They resulted to force in having access, leading to conflict. Even though the conflict is longstanding and rooted in grievances over land and political disputes, today, the adverse effects of climate change drought have exacerbated it. This conflict resulted in the deaths of over 200 people since May 2021 (ICG, 2023).

Water is a significant determinant of agricultural production. Because water rights are inextricably linked to land rights in many regions, water rights are often acquired through land ownership or long-term land leases and concessions (Chiarelli et al., 2022). A location is classified as green water scarce if rainfall is not enough to meet 90% of the crop-water requirements; this is the case with the sending region where migrants came from (the northern Nigeria), due to the adverse effects of climate change-drought and desertification ravaging the

place.

These experts interviewed assert that migration to the host community has resulted in conflict due to competition over resources between migrants and host community members. If this is left to continue, it portends danger for Nigeria. Nigeria's national security is seriously threatened by climate change, causing increased weather extremes that worsen internal migration flows and intensify conflicts over essential resources.

The frustration-aggression theory, proposed by Dollard et al., (1939), asserts that when individuals encounter obstacles that prevent them from attaining their objectives, they are frustrated, manifesting in aggressive behaviour to assuage the frustration. The response from experts acknowledges this, underscoring the obstacles that migrant populations face in obtaining essential resources in the host community of Nogoa, the study site. Also, the frustration-aggression theory suggests that migrants become frustrated when the host community restricts their access to wells and land needed for farming. Their discontent arises from being denied their fundamental human need, water and land vital for survival. Failure to meet these expectations causes the emotional well-being of migrants to reach a boiling point, leading to heightened anger and resentment towards the host community. When frustration builds up, it can result in aggressive actions to cope with the perceived injustice and regain a sense of control and power. The feedback illustrates how the use of force to gain access to resources can lead to violent conflicts and loss of life, highlighting the outcomes of frustration and hostile behaviour.

The antagonism and opposition from the host community people deepen the migrants' dissatisfaction and feelings of lack of control, contributing to a cycle of confrontation and disputes. Denying access to resources increases feelings of marginalisation and injustice among the migrants, leading to the likelihood of hostile reactions to demand their rights and basic needs.

To prevent the escalation of violence and promote peaceful coexistence between migrant and host communities, it is necessary to address the underlying causes of the violence, such as climate change, unfair resource distribution and social exclusion. Efforts to tackle systemic disparities, improve inter-community communication and understanding, and fair resource-sharing procedures/measures can reduce the likelihood of hostility and foster social cohesion.

In addressing resource contestation leading to conflicts, tackling the causes of migration from the sending region, which are the adverse effects of climate change, drought, and desertification is vital. Onuoha (2010) noted that “when people no longer have access to necessities of life, such as water, food, shelter, or physical security critical for survival, they adapt by switching livelihood systems or migrating", consequently creating security challenges that arise "when the capacity of the receiving communities is stretched to a tipping point where interactions and relations become conflictual rather than cooperative” (Onuoha, 2010: p.259). This is the case in the study site-Nogoa, Makurdi, Benue state, Nigeria. He further stressed that the outcome of an influx into host communities depends on the carrying capacity of the receiving communities in terms of their ability to accommodate influxes at any particular time.

The Africa Climate Change Environment and Security (ACCES) advances a sector-specific analysis of climate change, with a focus on assessing the vulnerability of systems during periods of extreme variability. Using the sector analysis approach, ACCES highlights five security sectors in which susceptibility to climate change poses a major challenge, especially in Africa: water security, energy security, migration, natural hazards, and food security (ACCES, 2010: pp.7-32). The report points out that these changes are already happening and can be observed in the Sahel region, which includes northern Nigeria (ACCES, 2010: p.8). As a result, there is currently a rise in conflicts and competition over resources.

5.3 Safety issue (at the destination)

Where safety has undermined coping strategies, the effects of climate change are most pronounced. Climate change has worsened safety in the sending region. As climate change adverse effects, especially drought and desertification intensify, so will more people be forced to migrate around the globe. This raises the question of how to safeguard those who are vulnerable by providing suitable safety and security measures that prevent vulnerable individuals from being exploited. In this context, respondents were asked about safety and security mechanisms in place in the host community to ensure the well-being and protection of migrant individuals. Below are the excerpts from the interviews of two experts, one from the Ministry of Environment and the second from the local government office:

> "We are having serious safety and security issues because of constant reports of migrants leaving the camps provided and venturing into town areas. We feel for the women and the children, but lack the resources to cater to their needs adequately. Their presence in the host community town areas leads to conflict with the hosts. When the structure is overwhelmed by so many people, it becomes a burden for the officials in charge; this is what we are experiencing." (LGO-2—Community Development Department).

> "The majority of migrants live in camps and often end up living in precarious and unsafe conditions in town centres where crime is prevalent. Feeling safe and secure is central to health and well-being. How safe we feel can influence our social habits and feelings of freedom. These factors hamper migrants' socialising with their hosts. The volatile atmosphere can be attributed to this. Also, the costs associated with providing housing, healthcare, education, and social services are enormous, especially when dealing with a large influx of migrants as we are. The financial resources required to ensure the safety of migrants in Nogoa are under strain." (LGO-4— Community

Development Department).

From the interviewees' responses, safety and security is about helping individuals and communities to feel safe. Feeling safe, stable, and secure is central to our health and well-being. How safe and secure we feel can influence our social habits and feelings of freedom. Being deprived of such safety hampers various aspects of these migrants' lives (e.g. social integration, social interaction, family stability and self-esteem). Climate change acts as a threat multiplier, amplifying pre-existing dangers that ultimately force people to leave their homes for safety and security (Francis, 2024). Therefore, climate migrants must have reliable and secure legal channels available to them. Being surrounded by people you trust and having supportive friends and family are strongly linked with well-being. Having healthy and respectful relationships can help you to feel safe and valued. This raises the question of providing sufficient safety and security measures to shield those vulnerable, like the migrants in Nogoa. In assessing the views of (LGO-2—Community Development Department), it is paramount that the women's and children's needs are adequately catered for. A fundamental human need, safety is essential in safeguarding people's dignity and security so that they can live a fulfilling life in the environment they find themselves. The findings show that there are safety-related problems concerning the environment migrants find themselves in because of improper government assistance (Francis, 2024).

Apap and Harju (2023) posit that since 2008, climate-related adverse effects have displaced approximately 376 million people. This means one person moving every two seconds. An estimated 36.2 million people were displaced in 2022 because of climate change; many sought safety within their nation, but some were compelled to travel elsewhere. The International Federation of Red Cross and Red Crescent Societies (IFRC) projected that the number of people affected is expected to double by 2050. The global displacement of millions of people because of climate change must be appropriately addressed (Apap and Harju, 2023).

Immediate action is required concerning safety and security threats associated with climate change-induced migration. In this context, prevention should be the primary priority, and a worldwide coalition must be formed to reduce climate change-induced migration that is connected to providing safety and security for the vulnerable. Furthermore, quick action is required to shield nations from climate change increasingly severe and frequent effects. Adopting a security philosophy that prioritises people is crucial, as safety and security threats from climate change can wreak havoc on the world population.

5.4 Employment-opportunities to sustain livelihood - (at the destination)

Focusing on sustainable employment and livelihoods requires creative, imaginative, innovative thinking and acting 'outside the box' to develop new policies and programs. Climate change is reversing the progress made in poverty reduction, and is linked to unemployment and affecting livelihoods, especially in the developing world (The World Bank, 2020). This is precisely the case with the people who migrated from the affected areas in northern Nigeria to the study site of Nogoa, Makurdi, Benue State, Nigeria. Because of the adverse effects of climate change experienced in various communities, livelihood activities have been disrupted.

Two experts-one from the Ministry of Environment and the second from the Local Government, and one host community chief opinions were sought concerning the prospects of migrants in seeking viable employment to sustain livelihoods at the destination, Nogoa, Makurdi, Benue state, Nigeria, the study site. They were of the same views. It was established that the jobs they were into in their place of origin were precisely what they are practising in the host community: farming and herding; some were into labouring. This is based on the information obtained while the government officials were processing the registration of the migrants in the government-controlled internally displaced people camps (IDP's). The excerpts of their responses are provided below:

"Migrating to the host community has allowed them to engage in farming and herding activities again because of the abundance of water and grassland. Nomadic herders among the migrants had tried to settle their herds permanently by the host community riverside from our investigation, one cause of the problems between them and the host community people that use the river for livelihood means." (MEO-2—Desertification, Land Degradation and Drought Management Department).

"Most migrants engage in farming and menial labouring jobs, except the pastoralists, who are into nomadic cattle rearing, moving from place to place all over the community. There is a restriction by the receiving community, which refuses them access to their wells and land. They are always in competition with the host community people for local jobs. In some cases, the nomadic pastoralists among them allow their cattle to stray into the farmland of the host community farmers, eating and damaging their crops and farmlands." (LGO-2—Community Development Department).

"They engage in farming and herding activities in our community. Also, migrants compete with our youths for local jobs, which are in short supply in our neighbourhood. They move their cattle around our community uncontrolled, asking for buyers. The herders in our community have destroyed several hectares of our farmlands. We invested money in farming, yet we do not see ourselves making any harvest because of their cows eating our crops and damaging our farmlands". (HCL-2—Community Chief)

According to the findings, despite the highlighted conflicts, there are indications of better living standards and economic opportunities for these migrants in the host community compared to their place of origin. Also, findings show that whether migration is accumulative

or coping, the sign is that most migrants fend for themselves, even though they are in a precarious situation. Findings show these migrants need to be supported by the government. Supporting them will curb vulnerability and exploitation. Social and psychological issues are of importance concerning these migrants in the host community. Because of the host community's reluctance to embrace them, the migrants are confronted with multiple challenges, including cultural adaptation, education, and health, all of which are crucial for enhancing their standard of living. It shows that the influx of these people increases competition for jobs, houses, school facilities, etc. A large population puts too much pressure on natural resources, amenities and services. There is a need to address the cause of migration into this community, the adverse effects of climate change, through the introduction of adaptation strategies that involve introducing and using new technologies and innovations. Also, Deshingkar and Start (2003) assert that there must be an increase in the productivity of dryland agriculture in the affected areas.

An apparent lack of employment or livelihood opportunities due to the adverse effects of climate change contributed to out-migration from the sending region to the host community of Nogoa. Research shows that individuals and households prefer to remain close to their communities of origin, Foresight (2011), which is exactly what transpired concerning migrants' movement from the sending region, northern Nigeria to the host community of Nogoa, the study site, nearer to the sending region, where they believe they can have access to the needed resources to sustain their livelihoods. To this extent, migration aspirations, including employment, decisions, and actions, are shaped mainly by knowing if and how plans can be made locally to meet needs and goals related to a person's way of life and by understanding the attraction of migration as a substitute or supplements to livelihood strategy (Foresight (2011). Thus, there is a need to highlight the importance of economic disparity between rural and urban areas (underdevelopment and poor economic conditions) as a factor.

Economic inequality is the unequal distribution of income and opportunity between different groups in Nigeria. This is due to the lack of opportunities for the people in the rural areas because of neglect (infrastructure deficit) by various governments in Nigeria. Domestic economic policies, including redistributive fiscal policies and labour, have been in shambles for years, one of the reasons why so many parts of northern Nigeria have been neglected, allowing drought and desertification, most especially to manifest, leading to out-migration from this region to other parts such as the study site of Nogoa. The situation in Nigeria is worrisome, with most people trapped in poverty, with little hope of improving their social status. Foresight (2011) emphasises the importance of policies/measures to safeguard vulnerable areas through infrastructure development or by minimising exposure to climate-related events; unfortunately, coherent policies/ measures are currently lacking in Nigeria, especially in northern Nigeria, which is mainly affected by the c adverse effects of climate change.

Regarding the disparity identified between rural and urban areas in Nigeria, the views of experts (local government officials) on rural-urban migration advantages and disadvantages were sought, and the experts interviewed were on the same page according to their responses. Below are the excerpts from their responses.

(LGO-1—Community Development Department) from the interview:

> "Rural-to-urban migration benefits most countries, but is usually characterised by high urban densities and social inequalities. However, there is a need to identify a factor that contributed to what we are witnessing now in Nogoa concerning the massive influx of people from the northern part of Nigeria, which is attributed to drought and desertification, which have been left to deteriorate for so long by various governments."

Findings show that rural-urban migration is beneficial if controlled; not controlling it

leads to overpopulation, heavy strains on public amenities and resource contestation. Identified as the bane of the problem of why people leave rural for urban areas is drought and desertification. The prognoses of climate change impacts show that some areas presently providing livelihoods to subsistence farmers and pastoralists, majorly in the northern part of Nigeria discovered in this research, are rapidly becoming uninhabitable. As a result, there is massive out-migration from unhabitable spaces to urban areas. Unbalanced rural and urban development has resulted in some areas having more tremendous economic growth and government services, which attracts rural migrants (Fan, 2022).

The most prominent advantages of rural-urban migration are education, employment opportunities, access to government services like health care, higher education, and basic infrastructure; with these, a migrant standard of living can dramatically improve. Rural-urban migration can negatively affect rural economies, such as agricultural deficiencies. Agricultural production decreases when the labour force is drastically reduced or affected in the rural areas. Natural disasters and environmental degradation reduce the profitability of rural land and push migrants to urban cities (Studysmarter, 2024). Also, rural-urban migration can be problematic when cities cannot keep up with the population growth. Migration can overwhelm a city's employment opportunities, ability to provide government services, and supply of affordable housing (*Ibid*). Thus, the disadvantages of rural-urban migration outweigh the advantages if it is not controlled; an example is what is currently transpiring at the study site of Nogoa, where in-migration is leading to resource contestation and conflicts.

> Two other respondents from the Local Government were of similar opinions:
>
> (LGO-2—Community Development Department) "Rural-urban migration is helpful to a country's economic progress; nevertheless, uncontrolled rural-urban migration leads to competition for resources, and in the process leads to conflicts that threaten the country's economic growth and security."

(LGO-3—Community Development Department) "Rural-urban migration is beneficial for the economic growth of a country, however, rapid and unmanaged rural-urban migration threatens the economic growth of a country, causing environmental pollution and social-political conflict. This can happen when the urban population growth outpaces the ability of governments to provide the necessary infrastructure."

Commoner (1991) suggests that rapid population growth, especially in developing countries such as Nigeria, congruently intensifies environmental degradation, which must be allayed by reducing the population growth rate because of pressure on available resources[7]. Mathew and Upreti (2006) argue that environmental stress and overpopulation issues have played important roles in creating fundamental situations for serious insecurity and instability. Resolving these conflicts will be difficult unless the underlying demographic and environmental problems receive more serious attention than they have to date.

5.5 Conflict and insecurity-Framing of Frustration Aggression and Eco-Violence

As noted by Salehyan and Gleditsch (2006), studies show that areas where people migrated to are more likely to experience civil conflict, as is currently the case in Nogoa, the study site. Adding tone to this research, Rüegger (2013) noted that when migrants establish a base that is in conflict with the host communities' people, leading to the upset of the demographic equilibrium of the community, there tends to be an eruption of civil strife, creating insecurity for the state. An example is the Somali migrants in adjacent Kenya and the Hutu migrants in the Democratic Republic of the Congo, whose presence led to hostility in the receiving regions. According to Malik (2018), the cause of hostility is not the presence of migrants in host communities, but resource contestation, trust and cohesion. Malik expanded

[7] As a result of the quest for resources on the increased to meet the demands of increasing human population. The environment is been depleted day by day to provide those resources needed to sustain the population growth (Oramah, 2006).

on his point, asserting that individuals, including migrants, living in countries with high levels of trust, strong institutions, low corruption rates, a stable and prosperous economy, abundant resources, and a strong sense of social unity and inclusiveness are less apprehensive about in-migration.

In contrast, in states where trust is lacking, institutions are weak, corruption rates are high, the economy is unstable and unprosperous, resources are scarce, and there is a lack of social unity and inclusiveness, people experience fear, and the idea of social cohesion and inclusiveness becomes a mere mirage. Nigeria, a developing nation with inadequate infrastructure and uneven distribution of essential services, is confronted with a problem of resource competition that demands immediate action.

5.5.1 Conflict leading to insecurity stems from competition for resources

The word "security" originates from the Latin word "securitas," which refers to "freedom from care, concern, or composure" (Arends, 2008, p.263); it is also a state of feeling safe, stable, and free from fear, threat, or anxiety, and when climate change's adverse effects are allowed to fester on and cause uncontrolled migration, what follows is insecurity.

Most of the respondents agreed that there is serious contestation over resources between migrants and the people of the host community, especially over land and water, creating insecurity and conflicts that result in people on both sides sustaining various injuries and deaths in the host community. Illustrated below are the quotes from two experts, one from the interview conducted and one from the focus group discussion:

As stated by the Human Resource Department (MEO-1):

> "We witnessed and settled at least three to four conflicts daily in Nogoa. And over what? It is over access to, control and use of natural resources, land and water, especially between migrants' pastoralists and host community farmers. In so many cases, the military were invited to maintain peace and douse tensions.

These conflicts are not good for the security of the state. If these are not carefully managed, it might spill to other parts of the country."

"The level of conflict that we are witnessing is unprecedented. Frustration and anger are the order of the day, especially from the migrants. This bogs down to being denied access to the wells of the people of Nogoa. Their frustration or anger are expressed through physical means, and this is upsetting the relative peace of the community." (FGLGO-6—Community Development Department).

The responses highlighted issues with resource sharing with the host community people. Natural resources are competed for, and without explicit agreements and/or legal status, this opens doors for conflicts, which reflect the power relations between users, leading to a situation where competition over resources increases (Helvetas, 2024). (See Figure 5.2 for the word tree text illustration of views from the discussion on insecurity due to competition for resources leading to violent deaths and destruction of properties in the study site). Additionally, there is increasing evidence that climatic conditions are associated with conflicts. The interpretation of various studies also contains considerable correlation and causation regarding the linkages between climate change and conflict (Dube and Vargas, 2013; Linke et al., 2017; Koubi et al., 2018). If we understand why conflict arises in the presence of adverse climatic conditions, appropriate policies can be designed, and institutions can be established to avoid conflict, such as the one that is manifesting in Nogoa. Thus, scholars should continue to investigate how climatic changes interact with and/or are conditioned by socioeconomic, political, and demographic settings to cause conflict. Climate-related disasters increase the risk of armed conflict onset. Scholars can help reduce climate-related disaster conflict by using multi-method evidence for when and how climate-related disasters

contribute to armed conflict risk.

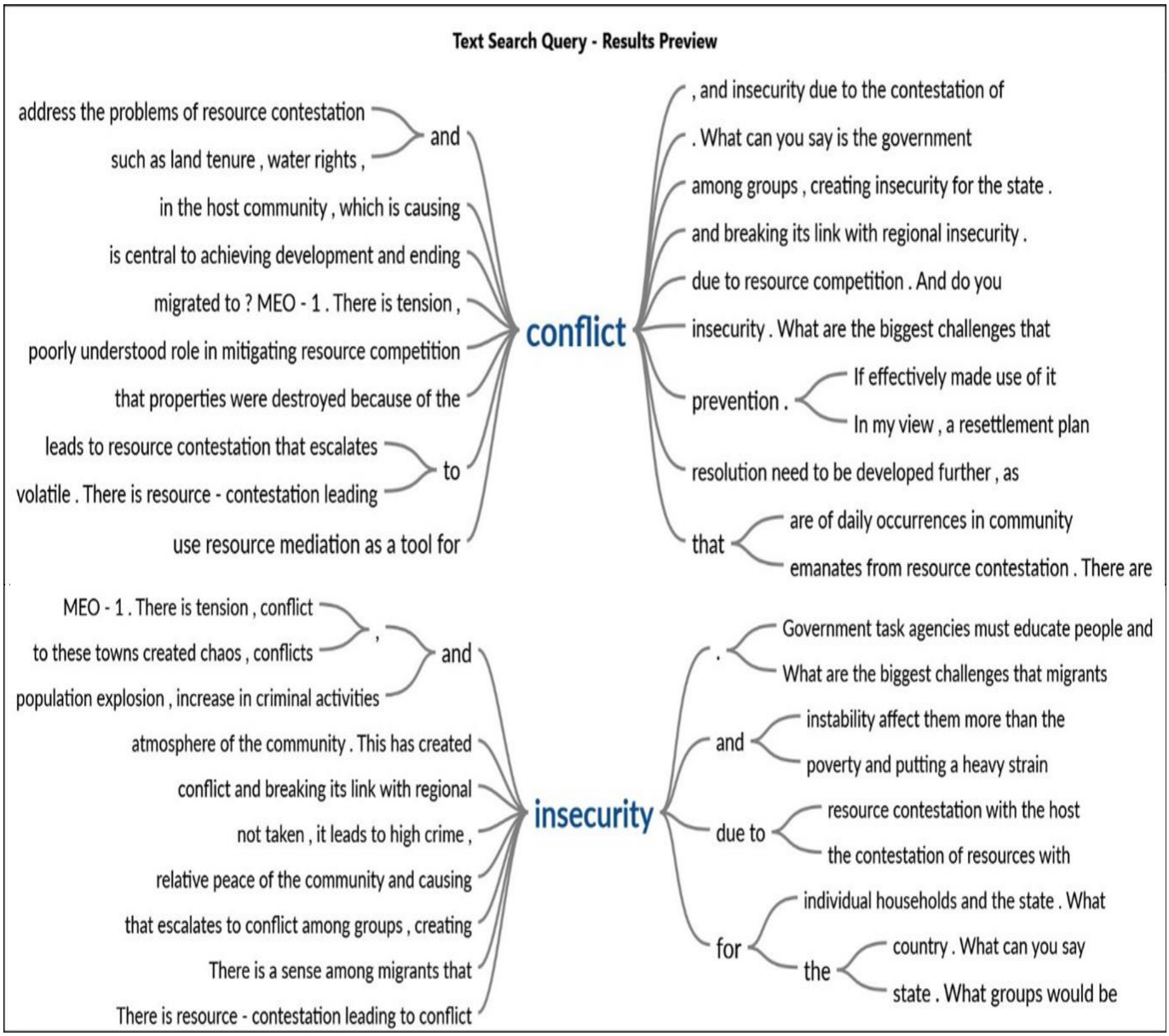

Figure 5.2: Resource contestation and conflict; the summation is insecurity for the state. (Source: Author, 2021).

An example of the current happening in Nogoa was experienced in the border regions between Kenya's Turkana and Ethiopia's Merille communities in May 2011, when at least 34 people were killed because members of Kenya's Turkana community were crossing to the Ethiopia border to seek food, often leading to clashes. The scale of the recent conflict has raised security concerns for the governments of the neighbouring countries, who met in Addis Ababa to explore the issues of which agreements were reached to address the challenges

created by the competition for scarce resources, the bane of the conflict (Tekle, 2011). Resource sharing, especially in the developing world creates conflicts.

Nickerson (2023) stated that when people are frustrated, they experience a drive to be aggressive toward the object of their frustration. Because of feeling frustrated, which occurs when the efforts of these migrants to reach their goal are blocked, the aggressive feeling surfaces. Dollard (1939) posits that frustration often leads to aggression. The migrants did not stop at this, the aggressive behaviour now turned into a violent attitude, leading to conflict with the other group because of competition over resources (Deutsch, 1949). Here, the frustration aggression theory took root in conjunction with the eco-violence theory. Therefore, an atmosphere of insecurity is triggered, which can unsettle the relative peace of a state. This is precisely what is happening in Nogoa.

The vital elements for sustaining livelihoods, such as water, energy, transportation, wildlife, agriculture, ecosystems, and human health, are being impacted by a changing climate. As a result, people's lives are being systematically destroyed, necessitating urgent action. The findings show that migration and contestation over resources leading to conflict have serious implications for receiving areas, especially when the government does not have adequate plans in place to control and see to the root cause of why people are engaging in out-migration from a particular area to the receiving regions.

As noted by Tumen (2016), regarding security risks, researchers have found evidence that a massive influx of migrants can strain the economic activities of receiving regions, such as employment losses and contestation for resources. Ryan (2019) posits that intensifying climate change would increase the future risk of violent armed conflict within countries; he went further explaining that climate change has influenced between 3% to 20% of armed conflict risk in the last century, and the influence will keep increasing if nothing is done to reduce the adverse effects of climate change. Due to the dangerous situation many countries,

Nigeria included, find themselves, the estimates have risen, as existing evidence suggests that contextual factors, such as migration and livelihood options, governance structure, and existing conflict dynamics are influencing the pathways through which climate change leads to conflict. (Kyungmee and Garcia, 2023). Climate change-related security concerns require urgent actions to address the aforementioned contextual factors, including the impact on food, water, and energy supplies and competition for natural resources.

Raleigh and Urdal (2007) posit that environmental and demographic issues are important risk factors under economic, political, or social conditions because these factors determine a country's ability to adapt to environmental change. In Nogoa, Benue State, Nigeria, the study site, through in-depth interviews, findings show that, because of drought and desertification encountered by the people in the sending regions, which led to migration into the study site, the demographics and livelihoods of the people of the host community were affected. Migration created demographic stress in the community. Suddenly, there was an increase in the number of people in the host community. As a result of this increase, there are conflicts between migrants and the host community because of resource contestation. Local government officials in charge of the host community's affairs are testaments to the ongoing daily strife.

The host community's economy was affected because pastoralist migrants' cattle were encroaching on the host community farmers' land, eating and damaging the crops planted to sustain their and their families' livelihoods. Politically, the government has no concrete plan to address the volatile situation in the host community. In this regard, environmental and demographic stress is an equally important risk factor under economic, political or social conditions that are affecting the host community, the study site Nogoa and threatening to destabilise the nation as a result of the adverse effect of climate change affecting the sending region that needs to be addressed.

Respondents commented on the lack of basic infrastructure that affects the country's social, political, and economic foundation. Below are the excerpts from three experts from the Focus Group discussion:

> (FGMEO-5—Desertification, Land Degradation and Drought Management Department) from the focus group discussion:
> "Socio-economic, cultural and political problems can occur because of uncontrolled internal migration, as is currently happening because of drought and desertification adverse effect in northern Nigeria causing the migration of people to the host community of Nogoa, Benue State, Nigeria, leading to resource contestation and conflict and the overuse of current infrastructure". "The consequences are profound. It causes the breakup of communities and social networks, forced displacement and unemployment."
>
> (FGMEO-4—Climate Change Department) from the focus group discussion:
> "From my perspective concerning the northern region, environmental, political, socio-economic, and cultural activities are, in one way or the other, if not addressed appropriately, will lead to the region being left behind concerning development, and this will be an injustice to people of this region. The government's failure to set up effective mitigating and adaptation programmes or plan in place to manage environmental challenges is a cause for worry."
>
> "Agricultural practices in the sending region are nowhere to be found. I do not know if you remember that most of these northern states affected in the 60s up to the 70s were once major producers of groundnuts, contributing to Nigeria's economy. But now, what do you see? The farming areas of these states are now affected by drought and desertification, making it difficult for farming, hence one of the major reasons for out-migration causing severe resource contestation.

The after effect is the conflict we are now seeing." (FGMEO-2—Desertification, Land Degradation and Drought Management Department). From the Focus Group discussion.

Suppose we want to go with the feedback from respondents; in this case, this out-migration from areas affected by the adverse effects of climate change is bound to unsettle Nigeria's economic, cultural, and sociopolitical settings, with resource contestation escalating into conflict in areas migrated to, exactly what is emerging in the study site of Nogoa. If there is an increase in the number of people in a particular area contesting for resources, there is tension among groups, and the end result will not augur well for the state's security; this is indeed what Nigeria is currently experiencing. As explained by Rjoub et al., (2021), the emergence of conflicts because of resource competition portends a long-term disruption of local livelihoods and insecurity for the state because of no plan in place to manage available resources sustainably. Consequently, to ensure sustainable utilisation of natural resources, it is important to implement strategies that deal with resource conservation and management efficiently. A practical approach to manage, access, extract and distribute resources involves developing a coherent national plan governing the entire process. Furthermore, it is essential to implement measures that are specifically designed to meet the needs of the population (Rjoub et al., 2021). The governance of natural resources influences a country such as Nigeria's security and economic development.

Apart from resource contestation and conflicts, the presence of migrants in Nogoa led to reports of informal settlements and untidiness by the people of the host community. Concerning the discourse on the presence of migrants and the state of the community regarding tidiness, which cannot be separated from resource contestation and conflicts, expert discussions and host community leaders' responses were integrated into this section. Figure 5.3 below depicts excerpts from respondents' feedback illustrating views on the presence of

migrants in the study site of Nogoa that has turned the community into a place of competition for resources and violence.

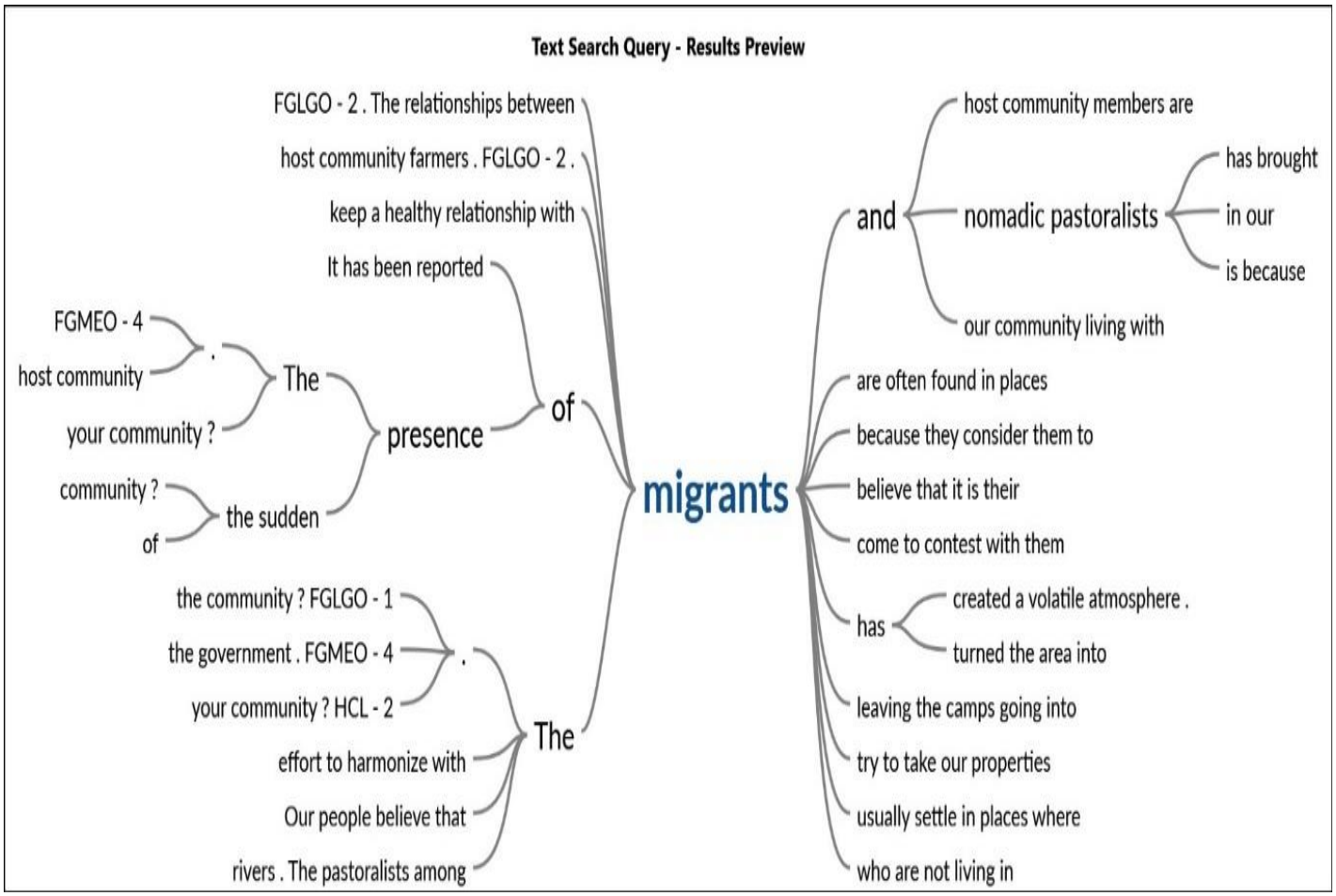

Figure 5.3: The host community leaders and experts-FGLGO and FGMEO perceptions concerning the presence of migrants in Nogoa. (Source: Author, 2022).

According to these experts, during the focus group discussion (FGLGO-1—Community Development Department):

> "The migrants are fouling the host community village. Their presence increases slums, which leads to many problems, such as unhygienic conditions, crime, and pollution. Also, in its true sense, host community farmlands are vandalised. This is especially true for the Fulani pastoralists, who allow their cattle to stray onto the farmland of host community farmers, causing damage by eating and destroying their crops."

> “The arrival of migrants has turned the host community into a slum where migrants have erected shanties". In addition, this makes their community dirty. Life in the community is dreadful. Injuries are sustained on a daily basis because of the brawls between the local community and migrants over land and water. The resource dispute has created a volatile atmosphere and insecurity, putting pressure on livelihood strategies and food production. It is a pathetic development in the neighbourhood of Nogoa. Competition over resources aggravates conflict. The government needs to bring these conflicts under control.” (FGLGO-2—Community Development Department).

Furthermore, these respondents (FGMEO-3—Human Resource Department, FGMEO-1—Desertification, Land Degradation and Drought Management Department and FGLGO-3 and FGLGO-4—Community Development Department) from the Focus Group discussion were of similar views concerning the bane of the problems between migrants and host community members with this statement:

> “The influx of migrants has turned Nogoa into a place with a public health burden because of litter. There could be the spread of diseases due to the unhealthy environments migrants are living in. Also, the constant tussle between host community people and the migrants because of two primary resources-water and land is not helping the situation.”

Correspondingly, the personal views of two host community leaders from the interview explained the presence of migrants and the negative impact created in their community. Below are the excerpts from their feedback:

> “These migrants have turned our community into a war zone. When we confront them to tell them what they are doing with their animals, they turn the discussion into brawls. They are destroying our community. They and their

cattle have messed up the farmlands we depend on for survival" (HCL-1—Community Chief).

(HCL-2—Community Chief was of a similar view) "They are aggressive. Not ready to listen to the voice of reason. In addition, they are always moving around our community with arms and ammunition. Such a thing has never been witnessed in our community before. Our community has is messy and untidy since the migrants arrived. Their cattle destroy our crops; when confronted, they turn discussions to scuffles."

This study benefited immensely from including four crucial extracts from different groups with varying viewpoints:

(1). "Those migrants have turned their community into a battlefield because of always trying to have access to resources by force";

(2) "The people of the host community are troubled by the unhygienic attitudes of migrants, including pastoralists in their community";

(3) "The host community people did not like the migrants' attitudes and were not ready to share resources such as water and land."

(4) "Their cattle destroy our crops, but when confronted, they turn discussions to fight".

Findings show that the influx of migrants into Nogoa has seriously changed the town's settings. The tranquillity and cleanliness that once existed in Nogoa have vanished. Adding to the problem is the impact of climate change in northern Nigeria, which has forced people to move to Nogoa. This has disrupted the peace in the community, leading to overpopulation, competition for resources, and conflicts. This suggests climate change is already playing a role in Nigeria's current conflicts, as in Darfur in 2003 (UNEP, 2007). For example, conflicts in Darfur are partly driven by environmental degradation induced by the changing climate (UNEP, 2007). The encounter has placed significant pressure on the availability of pastures

and water for cattle, which has compelled individuals and pastoralists to migrate to Nogoa (Issifu, Darko, and Paalo, 2022).

In assembling diverse views of different groups in this chapter, two significant vital results emanated: the first is the refusal of the host community people to share their resources with migrants, while the second is the attitude of migrants in trying to have access to the resources at the host community domain by force, borne out of frustration of being denied access to these resources needed to survive, resulting in resource contestation and conflicts. In this context, resource contestations have aggravated conflict among groups as a result of frustration on the part of one group (migrants), being prevented from accessing resources such as water and land for agro-pastoral activities, and out of this frustration emanated aggression as a matter of forcing their way into accessing these resources leading to conflict and insecurity that is spreading to other regions in Nigeria.

On this note, the Frustration Aggression (FA) theory effect is integrated into this study in investigating the social, political and demographic impacts of climate change-induced migration from the sending and transit to the receiving region, which in this study is the study site Nogoa, Makurdi, Benue state, Nigeria. In applying the (FA) concept, links between resources and forceful access to them are the key. By forcefully trying to gain access to what the host community has in abundance, namely water and fertile land to survive, borne out of frustration and aggression, one issue is bound to happen, and that is conflict. Poverty and inequality will significantly increase as people struggle to sustain their livelihoods. If climate change is not addressed, it will completely disturb the four mechanisms of food security: availability, access, utilisation, and stability (FAO, 2009; Vermeulen et al., 2012; Tacoli et al., 2013). Understanding that most food consumed in cities comes from rural areas is important. Any disruptions to this food's production, transportation, and storage will impact prices and food availability in urban areas (Ziervogel and Frayne, 2011).

Foresight (2011) posits that variations in climatic conditions will affect livestock and crop production, accessibility to water, fisheries and aquaculture harvests, and the operation of ecosystem services all over the world, in particular, areas that rely on rainfed irrigation will be affected the most, as they are currently affected in the arid and tropical regions. In general, most places in the world will be affected, and these are the countries that have contributed the least to the adverse effects of climate change. Gornall et al. (2010) suggest that increasing frequency and intensity of year-to-year climate variations, particularly in tropical countries like Nigeria, pose a significant risk to food security.

Despite continual changes and modifications, the frustration aggression theory was successfully applied in this study to explain individual and group behaviours, including systems (Breuer and Elson, 2017). According to Breuer and Elson (2017), as causes of frustration accrue during an environmental and economic crisis, frustrated groups may let go of their aggression in many forms on a social target, in most cases, a minority group. However, in Nogoa, it was unleashed on a majority group. In this circumstance, the unfavourable adverse effects of climate change resulting in droughts and desertification experienced for several years by migrants from the sending region brought out the aggression in them when the people of the host community refused to share their resources, leading to forceful acquisition that resulted in conflicts. Unpleasant environmental conditions and other events and circumstances lead to frustration, an appropriate basis for aggressive behaviour by migrants in the host community, especially Fulani pastoralists, stemming from the frustration of achieving goals to survive because of the hardship encountered in the sending region because of the adverse effects of climate change, which are mainly drought and desertification (Hokanson, 1961). A large body of research has shown that droughts and desertification are generally associated with increased rates of violence, including civil conflict and crime, as is happening in Nogoa, based on a thorough investigation through interviews and discussions conducted with experts

and the host community leaders at the study site.

The results showed that climate change-induced migration breeds violence because of the increase in population established in the study site Nogoa, Makurdi, Benue state, Nigeria, leading to contestation for the limited available resources, transpiring to conflicts. This indicates that there is a causal link between environmental degradation leading to the scarcity of renewable resources in the sending region based on the views of the people interviewed. The influx of migrants to the host community to have access to resources (pie), according to Homer Dixon (1999), which are water and fertile land to survive, has created a volatile atmosphere-outbreak of violent conflict between two groups, migrants and the people of the host community. In overpopulated developing countries, environmental pressure can lead to an outbreak of violence, as is the case in the host community of Nogoa, where the arrival of migrants puts an enormous strain on resources and population, leading to violent conflicts (Buhaug et al., 2010). Two case studies, one by a Canadian team led by (Homer-Dixon, 1994; 1999) and the other by (Bächler et al., 1996), a group based in Switzerland focussing on developing countries, through investigation, were able to trace the social processes leading to conflict on environmental scarcity. Thus, environmental scarcity triggered by population growth severely strains renewable resources. Typically, unequal access to those resources breeds conflicts.

Zhang et al., (2007, 2011) successfully conducted a research on climate-based eco-scarcity; their study specifically examined the time period from 1500 to 1800 to understand the social and political effects of climate change focusing on the events in Europe and China, using extensive time series data from the Northern Hemisphere, and came up with a sophisticated causal model that is thoroughly grounded in empirical data (see Figure 5.4). The model is based on Europe's crisis of the seventeenth century. This illustrates that a decrease in average temperature in 1560, a climate change effect, instantly reduced bio-productivity,

leading to low agricultural yields and a dwindling food supply per capita.

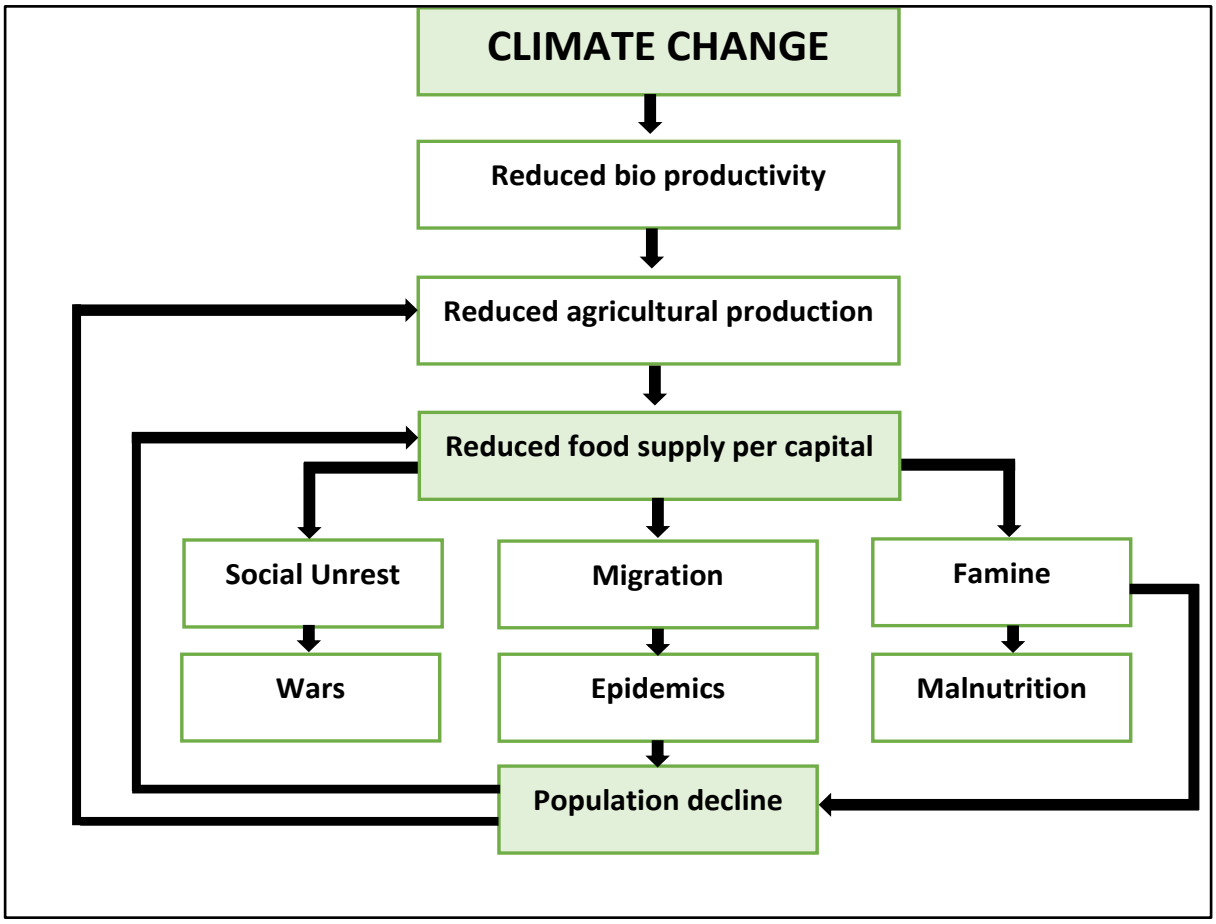

Figure 5.4: Causal pathways from climate change to large-scale humanitarian crises. (Source: Zhang et al., 2011).

There should be a major reform of the humanitarian sector focusing on the prevention of crises from climate change rather than providing relief once crises have occurred. (Marin and Naess, 2017). This is where very robust adaptation measures are needed to address climate change-induced migration and other adverse effects it brings. Consequently, there is a need for an excellent humanitarian approach developed by the UN-led Transformative Agenda that makes it necessary to address local, social, historical and political situations in a new and different ways from previous one-time efforts aimed at 'restoring order'. Humanitarianism has the potential to contribute to climate change adaptation because there is a robust conceptual alignment between the principles of humanitarianism, which prioritise vulnerable populations,

and the approaches to adaptation that aim to address underlying vulnerabilities (Marin and Naess, 2017).

In the near future, if care is not taken, we may witness social unrest, migration, famine, war, epidemics, and widespread malnutrition, especially in the developing world (Zang et al., 2011). Thus, scarcity-driven migration leads to violent clashes between the migrant population displaced by environmental pressure and the receiving population, leading to (ethnic conflicts). Economic disaster, undoubtedly exacerbated by scarcity and the state's inability to manage the crisis, can lead to rebellion among residents who feel disadvantaged by the standard of living to which they either feel entitled or are required to survive; this phenomenon is known as deprivation conflicts.

5.6 Conclusion

The findings of this study show that the involvement of multiple stakeholders is a key factor in resource conflicts, such as community-based organisations, multinational businesses and governments, who sometimes could have diverse and incompatible interests over resource ownership and control (Olanrewaju, Joshua and Olanrewaju, 2020). For example, in Ecuador, a U.S.-based NGO negotiating with an oil company on behalf of the Huaorani- an indigenous group in the Oriente region- held meetings in private without the presence of Huaorani representatives. It then concluded a deal against the Huaorani's collective wishes, leading to sabotage and conflict (Brown and Keating, 2015). Thus, the importance of resource management is that active management of resources sustains environmental services and livelihoods and reduces risks from hazards, including land use management and structural design. Effective land use and structural design complement environmental, economic, and community goals, reducing risks from hazards and resource contestation that leads to conflict.

Furthermore, socio-economic settings and situations in host communities have a significant influence and, as a result, the community's hostile attitude towards migrants.

Because most people in the studied site of Nogoa rely on farming to sustain their livelihoods, migration to their communities has significantly affected their economic foundations. Findings show that, in the host community, resource disputes and conflicts between migrants and people of the host community present substantial pressures on agricultural undertakings. In line with previous research findings, this study agrees with the feedback from field interviews and discussions that there is a direct link between migration as a way for people to adapt, competition for resources, and conflict caused by climate change in the sending region.

Furthermore, findings in this study are consistent with Homer-Dixon's postulation of eco-violence theory, which claims that resource availability, seasonal fluctuations, droughts, and desertification alter migration routes, increasing the likelihood of conflict between migrants-herders and farmers in the host community. Also, eco-violence theory asserts that climate change interactions with political, social, and environmental factors will exacerbate existing tensions and vulnerabilities (Homer-Dixon, 1999). Environmental scarcity leads to inequity, migration to potentially hostile areas, and the depreciation of political institutions, exacerbating grievances and changing the opportunities available to the aggrieved group. Also, this is consistent with the Neo-Malthusians[8'] position, as stated by Olumba (2022), that environmental degradation leads to reduced agricultural productivity, migration, and conflict between different social groups, as is currently occurring in Nogoa Makurdi, Benue State, Nigeria. The same applies to Dollard's postulation of frustration aggression. If we experience frustration, this leads to aggression. The aggression is a cathartic release of the build-up of frustration by the migrants who have been denied access to resources to sustain livelihoods in the receiving region, resulting in force to access it, transforming into violence. Based on the

[8] Posit that population control is essential for the survival of the earth's human population. It rests on the observation that resources are limited, and that growing populations could rapidly outstrip the provision of resources and/or environmental degradation will lead to ecological collapse or other hazards. This is based on the idea of Thomas Robert Malthus an English economist (Malthus, 1798; Follett, 2020).

feedback received, it is evident that migrants are experiencing frustration because of the limited access to necessary resources that initially prompted their migration from the sending region to the host community. Now that they are in the host community, they are prevented from having access to these essential resources by the host community people, which translates to aggressive behaviours as a form of force/retaliation against the agents of the frustrating events leading to the conflicts that are presently being experienced in Nogoa, Makurdi, Benue state, Nigeria, and are now systematically spreading to other parts of Nigeria, creating insecurity for the state. As a result, the frustration aggression theory posits that individuals become frustrated when goal attainment is prohibited or interrupted.

Armed with this fuller and more complex understanding of migration from the northern to Southern Nigeria used an adaptation to climate change, I have explored and analysed the social, political and demographic impacts of climate-change-induced migration for both sending and receiving areas. Additionally, a fuller and more multifaceted understanding of the impact of climate change-induced migration on state security was analysed. This chapter concludes that climate change poses the greatest threat to human and state security in Nigeria today and in the future. The effects of climate change on Nigerian society could be more destructive than analysts projected, having a broader impact radius, high vulnerability, and low adaptiveness among citizens due to the country's status as a developing nation. There is an urgent need for reaction and action.

Chapter 6: Nigeria and climate-induced migration: Policy and governance responses in sending and receiving regions of Nigeria (local and national)

6.1 Introduction

The third research objective evaluate and analyse environmental migration policy and governance structure-related responses in the sending and receiving areas because of climate change, including resettlement policies that can address community conflicts and security issues arising from climate-induced migration, using feedback from the experts-Ministry of Environment and Local Government officials. Weimer and Vining (2017) posit that policy analysis involves the identification of potential policy options that can be used to address specific problems. Policy analysis is crucial for this study, since it involves analysing the effectiveness of policies or proposing new policies to address several issues relating to climate-induced migration, resource contestation and conflicts. This involves systematically evaluating different policy options, considering their advantages and disadvantages, and selecting the best course of action based on available data and evidence (Weimer and Vining, 2017). Besides going through the systematic process, it provides a better understanding of the problem I have presented in this study, the potential benefits and drawbacks of different policy options, and the practical considerations for implementing those options to resolve the issues relating to climate-induced migration, resource contestation and conflicts across Nigeria.

According to a key paragraph 14(f)) of the Cancún adopted framework[9] that was vital for climate-change-induced migration and displacement action/policy, "states must take measures to improve understanding, coordination, and cooperation concerning climate change-induced displacement, migration, and planned resettlement, where appropriate, at the

[9] Through international cooperation, the goal is to strengthen adaptation action in developing countries, improve adaptation planning and implementation by increasing financial and technical support, as well as strengthening and/or establishing regional centres and networks. The framework will also improve adaptation research, assessments, and technology collaboration, as well as education and public awareness.

national, regional, and international levels". These measures, if applied, will help alleviate the adverse effects of climate change and safeguard people's livelihoods (UNFCCC[10], 2011; Serdeczny, 2017, pp.5-6; Bilak and Kaelin, 2022). McAdam (2014) acknowledged the adverse effects of climate change on migration, displacement, and planned resettlement, and recognised them as rudiments to be addressed within the climate change adaptation framework, and suggested a clear framework for influential actors to use as a reference when addressing climate-induced migration.

A study by Omisore et al., (2020) reveals that Nigeria's internal migrants and displaced people need dependable legal and institutional frameworks. In November 2021, Nigeria passed the Climate Change Act, which seeks to curb greenhouse gas emissions and toe the path of sustainable growth, with the aim of achieving/reaching a net zero target between 2050 and 2070, but there are no concrete policies or plans included to address the challenges faced by migrants and displaced people within its corridor.

A formal recognition of climate-induced migration and displacement has long been lacking. While it is widely recognised that climate change affects migration and displacement, the shifts in migration patterns resulting from climate change will impact Nigeria's ability to reach climate change goals and communities' capacity to adapt. At the (COP 14) Poznan 2008 United Nations Climate Change Conference, climate-induced migration and displacement were first introduced in the assembly documents; however, no further attention or discussion was given (Wilkinson et al., 2016). Migration next appeared in the UNFCCC programme in 2010, at the 16th Conference of Parties (COP16) in Cancun, when the Cancun Adaptation Framework became the first agreed upon COP text to formally recognise climate-induced migration (Warner, 2012; Wilkinson et al., 2016). To enhance action on adaptation, Nigeria

[10] The United Nations Framework Convention on Climate Change established an international environmental treaty to combat "dangerous human interference with the climate system," in part by stabilising atmospheric greenhouse gas concentrations.

and other parties were invited to the convention, where rules and regulations were drafted concerning appropriate measures to improve understanding, coordination, and cooperation in dealing with climate change-induced displacement, migration, and resettlement (UNFCCC, 2011).

Policy responses shape movement options, whether specific to migration or directly impacting it. As Geddes et al., (2012: p.1078) noted, “migration linked to environmental change is not a problem for governance but a problem of governance.” Migration is embedded within social and political systems, and when the social and political system of a country such as Nigeria is weak, it becomes a problem for governance. The issue of climate-induced migration in Nigeria can be addressed by classifying policy and institutional responses. Therefore, as McLeman (2016) suggests, having an efficient governance structure in place makes migration a crucial way to adapt to the impacts of climate change. This way, the adaptive approach is proactive (Gromilova, 2016). Tacoli (2009: p.513) states that migration is a vital response to environmental and non-environmental transformations and pressures. Therefore, it should be a central element of adaptation strategies to climate change. This requires a radical change in policy makers' perceptions of migration as a problem, and a better understanding of local and national institutions' role in supporting and accommodating climate-induced migration.

Exactly how this should be undertaken is a subject of more significant debate. Recognising that migration in the era of climate change may evolve substantially in the future, some analysts propose 'no-regrets' approaches to policymaking, arguing that approaches that “make sense [even] in the complete absence of climate change” (Luetz, 2017: p.69) are most sensible. Wilkinson et al., (2016) argue that ambiguity in international frameworks concerning national policies to address migration in relation to climate change sends out confusing messages to federal governments, such as the Nigerian government, if they try to implement

them in line with their set development objectives. Because of the constantly evolving policy landscapes on a global and national scale, there is a prime opportunity to address the issues faced by vulnerable migrating populations. This can be done by developing a timeline that incorporates local, regional, and national frameworks, as well as important milestones, to manage climate-induced migration effectively (Wilkinson et al., 2016).

To fill the policy gaps regarding climate-induced migration and displacement in Nigeria, existing international frameworks and national policies must establish a clear connection between the impact of climate change and human migration. And to address these policy gaps, it is crucial to adopt a comprehensive approach that fulfils the needs of those affected, provides protection, and offers long-lasting solutions. Additionally, support should be provided to help them adapt to the adverse effects of climate change.

6.2 Governance of Climate-Induced Migration

Climate change is increasingly acting as a driver of migration in Nigeria, pushing individuals and communities to leave their homes in search of safety, security, and better livelihoods. Managing this complex issue requires a collaborative effort from various stakeholders, each playing a crucial role in different aspects. (See Table 6.1).

Table 6.1: Stakeholders' role (Governance of climate-induced migration)

(a) Government Agencies	
National Commission for Refugees, Migrants and Internally Displaced Persons (NCFRMI)	This agency serves as the primary point of contact for displaced communities, offering humanitarian assistance, coordinating protection efforts, and advocating for their rights. They are vital in registering and profiling displaced populations, ensuring access to basic necessities like food, shelter, and healthcare, and facilitating local integration or relocation to safer areas.
Federal Ministry of Environment	This ministry is responsible for addressing climate change at the national level. They develop and implement strategies for adaptation and mitigation, focusing on areas like reducing

	greenhouse gas emissions, building resilience to climate impacts like droughts and floods, and promoting sustainable land and water management practices. These efforts aim to address the root causes of displacement and create more climate-resilient communities.
Federal Ministry of Agriculture and Rural Development	Recognising the significant impact of climate change on agricultural productivity and rural livelihoods, this ministry supports farmers affected by climate shocks like droughts and floods. They distribute drought-resistant seeds, promote climate-smart agricultural practices, and offer training and extension services to help farmers adapt their practices and ensure food security. This not only supports rural communities but also reduces the pressure on individuals to migrate because of agricultural challenges.
State and Local Government	Implementing climate change and migration policies often happens at the state and local levels. They play a crucial role in developing and implementing context-specific plans that address their communities' unique needs and vulnerabilities. They can establish early warning systems for climate risks, invest in infrastructure development in areas prone to displacement, and allocate resources for local adaptation and livelihood diversification initiatives.
(b) International Organisations	
United Nations High Commissioner for Refugees (UNHCR)	This U.N. agency provides protection and assistance to refugees and internally displaced persons (IDPs), including those displaced by climate change. They work with national authorities to ensure the rights of displaced populations are respected, set up camps and provide basic necessities, and advocate for durable solutions like local integration or resettlement.
International Organisation for Migration (IOM)	IOM supports governments in managing migration flows, including climate change-induced ones. They offer technical assistance in data collection, migration policy development, and capacity building for government officials. They also implement programs to support individuals' safe and orderly migration, provide reintegration assistance for migrants, and address the specific needs of vulnerable groups like children and women.
World Bank	Recognising climate-induced migration's economic and social costs, the World Bank provides financial and technical assistance to countries like Nigeria for climate adaptation and mitigation efforts. They invest in projects that build resilience to climate risks, support early warning systems, and promote climate-smart agriculture. These investments aim to address the root causes of displacement and create more sustainable

	development opportunities, ultimately reducing the need for migration.
(c) Civil Society Organisations (CSOs)	
Environmental NGOs	These organisations play a critical role in raising awareness about the impacts of climate change and advocating for more decisive climate action. They conduct research, document the experiences of displaced communities, and lobby governments to adopt more ambitious climate policies. They also work directly with communities to build resilience and empower them to adapt to changing climatic conditions.
Community-based organisations	These organisations operate at the grassroots level, working directly with communities affected by climate change and displacement. They provide essential services like education, healthcare, and livelihood support and empower communities to participate in decision-making processes related to climate change and migration. They also play a crucial role in collecting data and sharing local knowledge that informs broader policy and program development.

6.2.1 Distrust of the government governance response structure in tackling climate change

The distrust of the governance structure is a significant issue concerning Nigeria's government response to climate change-induced migration and its ability to adequately address issues bordering on the concerns and needs of people affected by the adverse effects of climate change at the local level. The lack of trust in the government is an emergent issue. In this context, this question was posed to respondents. What can you say about the government's response to what people are experiencing concerning the adverse effects of climate change, drought and desertification, especially in the affected regions? The excerpts from two experts-Ministry of Environment officials are as follows:

> "The government's response to addressing the adverse effects of climate change, particularly in the sending villages, is abysmal. By neglecting the regions where migrants came from, the relative peace of the neighbouring communities has been destabilised. To be honest, I cannot completely fault the government as

they cannot address the issues of drought and desertification alone, which are currently impacting the rural areas in northern Nigeria, where most migrants originated from because of lack of funds and international assistance." (MEO-1—Human Resource Department).

"Despite having had the chance to address the detrimental effects of climate change, drought, and desertification that were wreaking havoc on rural areas in northern Nigeria years back, the government failed to act in due time. Out-migration from these affected areas is what we are witnessing presently. Regrettably, it is resulting into resource contestation and conflicts in the areas migrated to, creating problems for the country. Also, there are many complaints emanating from the migrants about the government not coming to their aid in addressing/solving the problems of adverse effects of climate change in their community." (MEO-3—Human Resource Department).

These experts' responses show distrust in the government's ability to effectively address the problems of climate-induced migration (Ojo et al., 2020). This has led to a lack of cooperation and participation in government-led initiatives to address climate change's impact on migration. As the government remains unresponsive to the challenges posed by climate change, many individuals are exposed to its adverse effects and feel neglected, and this further exacerbates their vulnerability. The government's nonchalant attitude has eroded public confidence in the government's ability to address the complex issue of climate change and migration at the local level (Acey, 2016).

An example of what happened in South Kordofan in Sudan in 2005 is what is currently at play in Nigeria. Brock (2011) states that the escalating pressure on land, caused by climate change-induced factors, such as drought, resulted in widespread land grabbing and population displacement. Consequently, it resulted in the depletion of resources and placed pressure on

those left. As this pressure grew, already fragile relationships between different tribal groups led to conflicts. As a result, the Misseriyya (traditionally nomadic pastoralists) and the Dinka (settled farmers) were mutually distrustful, and it can be argued that they did not trust the governance structure of government in bringing the situation under control because of having fought on opposite sides in Sudan before. Increased competition resulting from the ongoing disputes over land use is fuelling conflicts. This stems from the lingering problems of mistrust worsened by political manipulation of ethnic identities by those in power (Brock, 2011).

A community-based approach concerning good governance structure and responses at the local level is needed, which involves empowering local government officials to implement adaptation measures (Nzegbule et al., 2019). This approach acknowledges that climate change disproportionately affects local communities, who are also best suited for identifying and implementing effective adaptation strategies. These strategies can include integrating climate risks into development plans and securing resources for adaptation with the assistance of local government officials. This will enable the government to quickly identify problems associated with climate-induced migration at the local level. 2019). However, studies show this is rarely the case, because of lack of transparency, funds, and corruption.

To address the distrust in the governance structure, there is a need for greater transparency and accountability concerning the government's response to climate change-induced migration. The government needs to engage migrants and host communities, and involve them in the decision-making process to address the migration issues and the root cause of the adverse effects of climate change wreaking havoc (Spade, 2021). This approach helps build trust and ensures that the government's response is more effective and sustainable. There is also the need for civil society organisations and other stakeholders to play a more active role in advocating for the rights of migrants and host communities. These organisations can

help to build bridges between communities and the government and ensure that the needs and concerns of both migrants and host communities are addressed. This will go a long way in addressing communal clashes.

6.2.2 Climate change mitigation/adaptation approaches responses

Climate change mitigation and adaptation approaches are vital for curbing the adverse effects. Like many other countries, Nigeria has established policies concerning adaptation and mitigation approaches to address climate change impacts, which, in effect, will reduce climate-induced migration within the country if applied. Still, according to two experts from the Ministry of Environment, there is a lack of concerted efforts. Below are the excerpts from their responses:

> "Relevant agencies should be fully coordinated and ensure that adaptation to climate change is a priority for ensuring the long-term effectiveness of our investment in poverty eradication and sustainability. However, this is not the case at present because the agencies tasked with seeing to this are under-funded. Also, because of the lukewarm attitude of the government in addressing the problem of climate change and providing adaptation means to ease the suffering of people, especially in the affected areas in northern Nigeria, people are migrating in droves to the southern part of Nigeria." (MEO-2—Desertification, Land Degradation and Drought Management Department).
>
> "Currently, there is no adequate response based on the sustainable development framework drafted by the government to mitigate and adapt to the adverse effects of climate change, such as drought and desertification. The government's response regarding these matters is not very enthusiastic. Our department is facing a lack of financial support from the federal government to deal with these

problems." (MEO-4—Desertification, Land Degradation and Drought Management Department).

"Concerning the government state-wide responses, there is nothing on the ground to show that there are adequate programmes or innovation-driven processes for mitigating and adapting individuals to the adverse effects of climate change. This is evident in the receiving communities where migrants reside. Robust management is needed to achieve set goals and objectives to curb the impact of climate change and build a resilient adaptation strategy. This must include institutional structure reorganisation, adequate public finance, and natural resource management." (MEO-1—Human Resource Department).

From their responses, it is evident that Nigeria's adaptation strategies should prioritise resilience-building against the impacts of climate change, especially in sectors like agriculture and water supply, while also addressing the needs of vulnerable individuals. A National Adaptation Strategy and Plan of Action on climate change, which outlines measures to enhance the adaptive capacity of communities and promote sustainable development must be established (Leal Filho et al., 2019).

The government national response structure is not effective and operational. A significant gap between the official structure and practice has hampered Nigeria's policy-related response in mitigating climate change and providing effective adaptation measures because of a weak national response mechanism. Despite the Nigerian government's efforts to tackle climate change and its effects through various policies and strategies, there is a lack of effective implementation and transformation into sustainable programs. According to the PWC (2019), Nigeria signed several international agreements on reducing climate change adverse effects, such as the Paris Agreement in September 2016, ratified in March 2017, aimed at reducing GHG emissions, to date, the government has implemented no programmes or fully

committed to implementing the agreement, mainly because its revenue depends on fossil fuels, and there are issues with gas flaring on its major oil rigs.

Another vital policy response is the National Adaptation Programme Plan strategy of Action on Climate Change for Nigeria, which focuses on building resilience and adaptive capacity to climate change impacts from local to the national level. Also, Concerning the disaster governance structures, Nigeria has established a National Emergency Management Agency (NEMA) to coordinate disaster risk reduction and emergency response efforts (Mashi, Oghenejabor and Inkani, 2019). NEMA coordinates disaster risk reduction and management activities, including developing early warning systems, emergency preparedness, response, and recovery efforts. However, from research findings, because of the lackadaisical attitude of the government, these programmes are not in operation, begging the need for a fit-for-purpose policy and programmes that effectively put into application these programmes which, if dutiful applied, will curb the problem of climate change-induced migration that is causing resource contestation and conflict, and will help a great deal in paving the way for smooth adaptation process.

6.3 Policies for managing climate-induced migration

6.3.1 National priorities

Even though the government of Nigeria has initiated several measures to address the challenges of climate change, there are no compelling measures or policies drawn or adopted towards addressing the challenges of climate-induced migration in Nigeria. Whether climate migration is beneficial or harmful is a matter of good policy (Warner, 2010, p.8). A United Nations University report concludes that policymakers' decisions “will influence the extent to which the migration of future generations improves welfare or speeds up a downward spiral of deteriorating human security in the long term” (Warner et al., 2013, p.8). There is a growing interest in the topic of climate-induced migration and displacement. In particular, an

understanding of the protection needs of those forced to move by intensive and extensive risk has increased over the years. However, this has not yet led to policy change or legislative reform at the national level in Nigeria (Wilkinson et al., 2016). In order to establish a unified national response to climate-related migration, it was recognised that additional consultation is necessary among different government entities in Nigeria, as well as at the sub-national and local levels. Consequently, the following areas have been identified for inclusion in the national planning process:

- **Challenges for national policy frameworks include comprehensive policies on migration, displacement and relocation -** Identification of durable solutions for displaced communities and the need for solid inter-linkages at the national level, and to foster dialogue across policy spaces. Integration of human migration and displacement strategies into national policies and planning related to climate change and disaster management, including targeting the risks and barriers for the most vulnerable by implementing a risk-informed approach in all development policies, including land use planning, social protection, disaster response and climate change adaptation (PCCM-HS, 2020). Safety nets that consider different climatic scenarios must be in place, national policies that relate to sustainable development, environment, climate change, human rights alignment, and the implementation processes must be harmonised. It is essential to develop management plans for public assets, such as infrastructure, that consider the adverse effects of climate change and long-term resilience plans/programmes against climate change (Wilkinson et al., 2016).
- **Capacity constraints and challenges for public financing -** The capacity to adequately plan for or accommodate climate migration into day-to-day development activities is lacking. There must be a need for guidance on linking climate change

adaptation and mobility, including indigenous knowledge and adaptation policies and frameworks. The cost of adaptation measures is another national challenge (Wilkinson et al., 2016). Implementing resettlement plans/programmes face obstacles of funding and coordination with service providers. These challenges arise from the absence of a comprehensive national policy or framework for relocation.

- **The need for 'evidence-based' policy**-Limited information and datasets on how climate change influences migration trends is limited (Wilkinson et al., 2016). Predicting and quantifying the impact of climate change on migration in Nigeria is challenging because of limited resources for tracking and establishing a reliable database. It is crucial to have additional evaluations, data, and information in order to identify the communities most in need of relocation because of climate change. Nigeria lacks crucial data on historical displacement numbers and populations most vulnerable to climate change-induced migration, which is necessary for effective planning. Furthermore, there is a lack of adequate monitoring and evaluation frameworks that should be expanded to effectively gauge the impact of climate change on communities and livelihoods. This includes evaluating social cohesion, housing, community structure, education, and health. This will help address the needs of vulnerable and potentially 'trapped' populations (PCCM-HS, 2020).
- **Creating safe migration pathways and managing migration-**There is a lack of support services for climate-induced migrant workers/agencies in Nigeria. If there is adequate support at the national level, there will be a reduction in the economic and social costs of migration, and potential conflicts between host communities and migrants will be minimised. This is where social protection of climate-induced migrants is vital, because it builds social cohesion.
- **Service provision-**Existing pressure on social and physical infrastructures, education

and health services, housing and provision of emergency response services that include essential life-saving services and post-emergency and recovery support, food and shelter will be minimised, which Nigeria has no plans for. These will adequately reduce climate-induced migration and urbanisation.

6.3.2 Regional

Efficient regional policy will protect individuals and communities most vulnerable to climate change impacts related to displacement/migration through targeted regional policies in conjunction with a national approach. Any regional response must be built in collaboration with existing national policy to address climate change-induced migration effectively at the regional level. The following relevant regional policy approaches presented and discussed will be needed:

- **The regional Framework -** PCCM-HS (2020) postulates that the federal government must commit to work with the regional government to ensure Nigeria's security, harmony and prosperity. This will help develop good programmes for regions, and outline steps to take to achieve this. This involves establishing a body in charge of the development of the regional areas, and tasked with seeing to the difficulties people face concerning climate change-induced migration. In this context, the following principles guide the development of a regional response or approach:

  (a) Must respect national policies, strategies and narratives.

  (b) It must be contextualised and allow for the definition of climate migration in their terms.

  (c) Must be accompanied by consultations at both the national and sub-national level (Government, local government, communities, vulnerable groups) that take the time to understand respective needs.

  (d) Must be evidence-based and focused on addressing gaps in existing policy and

legal instruments. It must link existing national, regional, and global processes (e.g. human rights conventions and United Nations Framework Convention on Climate Change processes) while not undermining existing national approaches.

(e) Must promote recognition and legal protection of migrants and displaced persons, particularly climate change, including sustainability and reintegration, and must be informed by climate science (PCCM-HS, 2020; IOM, 2021; UNHR, 2024).

The advantages of a regional approach include protecting vulnerable groups and ensuring safe migration pathways. Applying the regional approach can facilitate the creation of a robust legal and political framework to address human migration. Also, it will help promote recognition and legal protection of migrants and displaced persons, particularly in relation to climate change. Regional instruments (such as guiding principles) provide a means for strengthening the coordination of humanitarian assistance. Reinforced regional advocacy will boost the political will to address internal challenges concerning climate-induced migration (IOM, 2021; UNHR, 2024).

6.3.3 Local Level

In line with Uchenna and Onyeabor (2020) postulation, it is becoming apparent that the twin effects of climate change *viz* drought and desertification, which has continued unabated and is happening at an alarming rate in northern Nigeria, has contributed to a gradual decline in crop yield locally since agricultural sector makes up of Nigeria's biggest employer of labour, in which over 75% of people in the local communities depend for their subsistence. Given these conditions, there has been massive population migration. Locally, the northern region of Nigeria has been the hardest hit. Building a climate-resilient society that can withstand or recover quickly from difficult conditions caused by the adverse effects of climate change is most pertinent to Nigeria. It involves a set of actions that are lacking at the local level in Nigeria that require carefully designed and adroitly executed policies locally that coordinate economic-technological, political-institutional

and structural-legal or informational structures of the state in a way that it reduces vulnerability to the problem of climate-induced migration and enhances its capacity to overcome environmental challenges. Nigeria's adaptive capacity to changing climate has been a major concern, and a focus of scrutiny in recent times. Reports show that, while there may have been some adaptation policy initiatives, they are hardly developed, insufficient and inefficient, talk less of having a policy guideline for climate-induced migration. To address climate-induced migration at the local level in Nigeria, the Centre for Participatory Research and Development (CPRD) (2015) recommends the incorporation of the following policy guidelines:

- **Addressing causes of displacement and migration that are forcing people to migrate and displaced:** The requirement for addressing causes and consequences of displacement and migration locally is paramount and should be included in the 'Global Adaptation Goal' of the Paris Deal. Aligning with the spirit of the 'Global Adaptation Goal', the national action plan (e.g. National Adaptation Plan- NAP) should lay emphasis on addressing climate-induced migration by undertaking risk management and risk reduction strategies/actions, informed by local site-specific climate vulnerability analysis.
- **Ensuring economic well-being of the locally trapped and most vulnerable group**: There should be specific guidelines in the protocol on the local protection mechanism (social safety nets) and support services for the people trapped in local risky hotspots, as well as for the people who face social and economic deprivation.
- **Appropriate local relocation programmes:** The protocol should include clear guidelines for an effective relocation strategy and local programs that focus on social empowerment and economic capacity building. This will help in revitalising neglected communities across the nation. Nigeria needs to develop a set of clear principles on internal displacement and migration caused by climate change, in accordance with a

solid legal protocol. The proper implementation of the initiatives requires international support and cooperation, as highlighted by Wilkinson et al., (2016).

With these key policies highlighted, Nigeria's goal is to reduce the adverse effects of climate change and curb the internal migration that is leading to resource competition and conflicts in local communities, but the country's strategies on climate change preparedness, adaptation and mitigation across all segments of the society are abysmal. The majority of the policies initiated, according to Somoye (2023), are not operational, and this is because of lack of funds-inadequate budgetary provision, corruption, leadership crisis, poor maintenance and neglect of projects, lack of technical skills and infrastructural decay as established from the Focus Group discussion when experts were asked about policy in place to address climate-induced internal migration. Illustrated below are quotes from the expert response:

> "Nigeria lacks the technical skills to combat the adverse effects of climate change on her own. As a result of this lack of technical skills, setting up sustainable infrastructure within the country to cushion the effect of climate change on local communities is affected. Also, there are no concrete plans for climate-induced migration within the country, which is why we are facing the problem of holistically addressing the massive influx of people from the northern region to Nogoa." (FGMEO-4—Climate Change Department).
>
> "Where some projects are set up for the containment of the adverse effects of climate change in some local communities, there is poor maintenance. This can be attributed to the lack of skills because most of the government's projects concerning combating the effects of climate change are carried out by expatriates. Consequently, people in these communities often move to other areas that guarantee access to necessary resources to sustain their livelihoods. In all honesty, Nigeria does not have a concrete programme in place to address

the problems that people who migrated from the most affected northern part of Nigeria to Nogoa are facing right now, maybe due to lack of funds. Urgent action is needed" (FGMEO—Climate Change Department).

Even though there are constant discussions about adaptation, loss, and damage due to climate change, climate migration has not been on the agenda of the U.N. Climate Change Conference, known as COP (Dhingra and Ferris, 2022). This is deeply troubling, thinking that the first report of the Intergovernmental Panel on Climate Change in 1990 recognised that migration would be one of the main consequences of climate change, and this migration is already happening, with over 20 million people displaced every year by natural disasters, mainly weather-related (*Ibid*). Because of this lackadaisical attitude of the world governing body in coming up with an excellent policy to cater to the needs of climate-induced migrants, most countries in the same vein are not treating or handling climate-induced migration as a matter of utmost concern and urgency.

Nigeria is one of the countries that does not have a policy in place concerning climate-induced migration. This was expressed by the respondents, which is the main reason climate-induced migrants in Nigeria are in a vulnerable state, and their predicaments are not adequately attended to. The departments created for climate change mitigation and adaptation are not well equipped or have the technical prowess to address the problems of climate change adverse effects. Studies have shown that the degree of vulnerability will vary from one region of the country to another. According to the FMEDCC (2021), it was established that the northeast and northwest geopolitical zones that make up the arid and semi-arid areas of northern Nigeria, where most of the country's livestock are raised are the most vulnerable to climate change in Nigeria. These are the areas where people migrated from to the study site of Nogoa. This is attributed to the regions' average low adaptive capacity, low sensitivity, high exposure, and high vulnerability. Recent detailed climate vulnerability mapping of the arid

and semi-arid northern Nigeria shows that Adamawa, Bauchi, Borno, Jigawa, Kano, and Yobe State are highly vulnerable to climate change.

In contrast, other states like Kebbi, Katsina, Sokoto, and Zamfara have a medium vulnerability. Kaduna and Taraba States are areas of low vulnerability to climate change (FMEDCC, 2021). Nigeria is highly vulnerable to climate change and is classified as one of the ten most vulnerable countries in the world, as stipulated by the 2017 Climate Change Vulnerability Index (The World Bank, 2019).

There is an increasing acknowledgement of the importance of understanding the causes and effects of migration caused by climate change, as well as the need for effective policies, strategies, and capabilities to address it. If not addressed, and allowed to fester on at the local level, climate change-induced migration will create inequality, and will spill to regional and national space, creating obstacles to achieving poverty reduction and having the potential of reversing the development gains, precisely what is manifesting in Nigeria.

6.3.4 Challenges of climate change-induced migration policy responses governance structure

Nigeria still faces challenges in achieving the desired results despite its efforts to incorporate climate change adaptation into its developmental agenda and policies. The challenges encompass issues like inadequate funding, capacity-building needs, and a lack of technical expertise. There is a noticeable absence of synergy, coordination, and collaboration among the stakeholders. The paucity of target-setting, monitoring, and evaluation has also given rise to overlaps, duplication of efforts, and a more significant cost burden. Poor communication is another problem that reduces the effectiveness of adaptation efforts in the country. The exclusion of the sub-national governments (states and local governments), CSOs, indigenous people, women, youths, and people living with disabilities constitutes a major barrier to effective and inclusive NAP implementation in the country. Nigeria's response to

climate-induced migration is complex, and with multifaceted challenges. The ability to collaborate and coordinate effectively is still difficult to attain, posing significant challenges at different levels.

The smooth application of sustainable development programs is hindered by challenges in the governance structure of climate change-induced migration policy response, as highlighted by three experts. One source of information comes from the interviews conducted, while two others come from the Focus Group discussion:

> "Smooth application of climate change-induced migration policy and implementation of sustainable development programmes to address it is borne out of lack of resources, division among various departments and lack of awareness. Communication breakdown between departments in the environmental management office is the most commonly identified barrier to national adaptation policy implementation, and is affecting the smooth application of sustainable development programmes to better the lifestyles of the populace. Also, there is a belief among some communities that the political establishment, to a certain degree, favoured migrants, especially the Fulani pastoralists, allowing them to trespass on people's properties (resources-land and water), leading to violent conflict with the farming communities (Host)." (MEO-2—Department of Desertification, Land Degradation and Drought Management).
>
> "Knowing the problems and barriers concerning climate change-induced migration, the origins and influence, and how they can be overcome is very important. Without these, Nigeria will continue to face the problems of internal climate-induced migration and displacement. It stems from not recognising migrants affected by climate change adverse effects compared

> to migrants affected by war. The day this is enshrined in the national doctrine of governments across the globe will lead to the provision of adequate care for climate change-induced migrants, whether internal or international." (FGMEO-2—Desertification, Land Degradation and Drought Management Department).
>
> "Climate-induced migration is treated in isolation. This is because many of the drivers of migration are intertwined. Properly managed and supported, internal migration can often improve livelihoods, reduce poverty, meet labour force needs, bolster economies, and strengthen links between communities and countries if not treated in isolation. It is important to note that without adequate resources in place, finding solutions for the challenges faced by climate migrants will be a daunting task." (FGMEO-6—Climate Change Department)).

It is imperative to understand that the shift in the political opportunity structure offered possibilities and restraints to different groups at the same time. This shows that biased domestic policies of the government intensify violent conflicts. Communities favoured by the political opportunity structure are encouraged and pacified, whereas others are constrained based on a respondent statement. As a result, some communities are disadvantaged by the present political opportunity structure. Changes within societies due to environmental scarcity and socio-political processes devoid of whereby one group is favoured over the other regarding access to vital resources lead to political instability, thereby increasing or decreasing the likelihood of contending groups to act (Homer-Dixon, 1999; 2010). For instance, it was reported in 2022 that eighteen people, including two police officers, were killed in intercommunal violence between nomadic herders and farmers in Benue State over land, grazing and water rights borne out of the belief that the government are on the sides of local

farmers allowing them to take over reserved grazing land for farming (Nathaniel, 2022).

Responses show that capital resources, awareness, and communication are essential, with sound policy, programmes, and efficient governance structure needed for the smooth application of sustainable development programmes to address the challenges of climate change-induced migration and better the lifestyles of the people most affected. Also, it was established that policies without adequate funding will always be a handicap in implementing programmes sustainably (Odoyi and Riekkinen, 2022). Findings show that lack of funding has resulted in a lack of resources and capacity to address migration and climate change challenges, especially at the local level. Nigeria's response to climate change has been hindered by a lack of awareness and education about its effects, particularly regarding climate-induced migration problems. Many Nigerians are unaware of the causes and consequences of climate change or the link between climate change and migration (Shakeri, Vizvari and Nazerian, 2021). As a result, there is a lack of support and participation in climate change and migration-related programs and initiatives despite strong political goodwill and commitment (Agu, Onyeabor and Agu, 2020). Moreover, the corruption and mismanagement of resources in Nigeria have also impacted the country's response to climate change-induced migration. Instances of funds allocated for climate change and migration-related programs being misappropriated or redirected have hindered progress and accountability.

Despite introducing several policies to combat climate change adverse effects, several challenges still remain. Limited funding, data gaps, lack of coordination between different agencies, and political instability hinder effective policy implementation concerning climate-induced migration in Nigeria. Integrating climate-induced migration into broader development planning remains a hurdle. This is illustrated in the following quote from the experts-Ministry of Environment Focus Group discussion:

“The government's performance in helping to address the situation of sudden migration

into Nogoa has been poor. The government is not helping the situation. There is little or no intervention at all. It takes weeks for the government to respond to tense situations in the community. If something is not done about it quickly, the sudden migration might consume the nation because people are arming themselves to protect their farmlands and other natural resources from migrants." (FGMEO-1—Desertification, Land Degradation and Drought Management Department).

Despite a set constitutional framework for realising sustainability goals, activities and responsibilities at each tier (federal, state and local government) and (executive, legislator and judiciary), findings show that government agencies are uncollaborative or coordinated. In addition, the effectiveness of these institutions has been significantly hindered by insufficient funds and serious mismanagement issues (FME, 2009). Hence, the observation that the capacity of the Special Climate Change Unit (SCCU) to drive and coordinate national climate change response is weak; there are very few people with proven capabilities in the unit. Inadequate and absence of well-equipped facilities speaks volumes (Onyia, 2015).

Further, highlighted in the following quote from experts-Local Government interview:

> "The climate-induced migration and conflict in the host community would have been curtailed if there were adequate policies and programmes in place. What hampers the solution to the problems groups are facing in Nogoa is that there is no coordination between government ministries. Curtailing climate-induced migration and conflicts is possible if they exist." LGO-1—Community Development Department).

It shows that national bureaucratic inertia and "siloed" approaches within government agencies in relation to reducing the adverse effects of climate change are not helping the situation (World Bank, 2021). Conflicting mandates across ministries create confusion and inefficiency, while insufficient funding and resource allocation limit

coordinated interventions. Regionally, limited cooperation and knowledge exchange with the national agencies result in fragmented approaches and duplication of efforts. Political instability disrupts collaboration, and Nigeria's varying national capacities and priorities make unified regional strategies challenging (Teye and Nikoi, 2022). In addition, ineffective communication and information flow between national, regional and local agencies result in a poor understanding of local needs and further increase the vulnerabilities of local communities. The limited capacity and resources at the local level are an obstacle to the effective implementation of national policies. According to the World Bank's 2021 report, top-down approaches fail to engage communities meaningfully, leading to unsustainable solutions. Lack of effective communication channels leads to misunderstandings and hinders inclusivity. Rural communities frequently lack access to vital information about the impacts of climate change, risks posed, displacement and available resources to prevent resource contestation. Overly, technical jargon used by experts alienates communities and hinders effective communication of risks and solutions (Springer, 2023).

Strategies that give priority to top-down decision-making and overlook the engagement of communities are inadequate in meeting their needs or accurately reflecting the realities they experience. Disrespect for cultural norms and traditions breeds mistrust and impedes effective engagement. Gender inequality further limits the voices and participation of marginalised groups in decision-making (World Bank, 2021). Ineffective top-down approaches disempower communities and hinder sustainable solutions. Local communities often lack the resources and training to participate effectively in decision-making and managing migration challenges. Powerful actors like large corporations can prioritise the needs and interests of potentially neglected vulnerable communities affected by climate change-induced migration (Teye and Nikoi, 2022).

Data gaps on climate-induced migration patterns and vulnerabilities hinder targeted interventions. Local communities lack access to technical experts who can provide them with the knowledge needed to adapt to climate change and manage migration. The absence of efficient systems for sharing knowledge among diverse stakeholders, including communities, obstructs the exchange of best practices and inhibits progress (World Bank, 2021).

Olumba (2022) argues that political developments have escalated the challenges of climate change-induced migration policy response governance structures. Changes in Nigeria's "political opportunity structure" since 2014 have been a catalyst for the escalation of violent conflicts because of uncontrolled internal migration. Devolution of natural resources and security governance is required to prevent leaders from exploiting shifts in political opportunity structures to benefit a specific demographic group (Ajala, 2021; Olumba, 2022). The principle of devolution is that the state divides authority over local spheres of responsibility, including the environment and natural resource management, among various decentralised administrative units (*Ibid*). It is vital to understand that abundance and economic opportunities in areas migrated to rather than scarcity create the conditions for these conflicts to erupt. Structural factors such as land-use systems and contradictory regulatory frameworks are to blame for these conflicts (Olumba, 2022). Also, ethnicity and exclusionary practices and the emergence of “ungoverned spaces” have exacerbated these conflicts (Olumba, 2022, p.3).

Nwozor et al., (2021) argue that the political developments in Nigeria since 2014 have contributed to the problems of climate-induced migration and escalation of eco-violence, as these violent conflicts have evolved from intermittent flare-ups into nearly daily episodes of mass violence. Also, corruption related to the vested interests of agro investors and elites has emerged as another critical factor in the recent uptick in eco-violence; similarly, the framing, construction, and representation of people's lives have exacerbated conflicts over resources

(Nwozor et al., 2021).

Ajala (2020) posits that it is important to note that another contributing factor is the contradictory responses to environmental violence by the federal government of Nigeria and various state governments. For example, the passage of anti-open grazing legislation by some state governments and the federal government's insistence on acquiring grazing reserves for migrant Fulani herders are stirring up eco-violence. Since the colonial era, Nigeria has been characterised as a prebendal state plagued by corruption, ethnic politics, misrule, and inept leaders. The entrenchment of nepotistic domestic policies concerning managing the adverse effects of climate change in transit and sending regions has heightened resource competition, leading to conflict. As a result, the current political opportunity structure has disadvantages for some groups. These arguments are in consistent with Homer-Dixon (2010), who contends that societal changes caused by environmental scarcity and ineffective sociopolitical processes lead to political instability, altering existing opportunity structures, thereby breeding unprecedented eco-violence, as is the case at the study site Nogoa, Makurdi, Benue state, Nigeria.

To design a system of laws, rules, policies and sound organisational structure concerning the governance of climate change-induced migration, there must be a concrete set goal. There are two main options for what this goal could be. On one hand, governance may view migration as a failure to adapt to climate change and aim to prevent migration, while on the other hand, migration may be viewed as a legitimate adaptive strategy to cope with the adverse effects of climate change, and one aim of governance may be to facilitate and support migration. The availability of resources to sustain livelihoods in some areas is a crucial aspect that drives in-migration, leading to competition for limited resources. Droughts and desertification push nomadic herders southward, encroaching on farmlands traditionally used by settled communities. This competition over land and water that fuels conflicts is often

framed as ethnic or religious conflicts with underlying environmental drivers. Politicians sometimes exploit these tensions, by manipulating narratives and inciting violence for personal gains (Nwankwo et al., 2020).

Corruption and weak governance are worsening the situation. Powerful actors, including state officials and corporations, prioritise short-term profits over sustainable resource management, contributing to environmental degradation and displacement. Furthermore, corruption within government institutions hinders effective responses to climate induced-migration/displacement, resource contestation and conflict, leaving communities vulnerable (Transparency International, 2024). Local community initiatives that encourage dialogue, resource sharing, and resolving conflicts provide practical solutions tailored to the specific contexts and needs of the communities (Oxfam, 2023). Also, non-governmental organisations promote transparency, accountability, and policies that tackle the underlying reasons behind violence and displacement (Human Rights Watch, 2022). Practical implementation of the aforementioned measures can help us overcome difficulties related to climate-induced migration and conflicts caused by resource contestation.

6.3.5 The need for a unified policy approach to address climate change (local, regional and national level)

The need for a unified approach at local, regional, and national levels is paramount for enhancing livelihood opportunities and socio-economic benefits for communities in line with good ecosystem management to address climate change-induced migration that is causing resource contestation and conflicts between groups in Nigeria. In this regard, the experts' respondents' opinions were sought, and this question was posed to them. “What is your view regarding how beneficial it will be concerning the government's unification and policy coordination towards mitigating climate change's adverse effects, causing internal migration instead of splitting the task between the local government and the Federal Ministry of

Environment?" Below are the excerpts from the experts-Ministry of Environment responses:

Two are from the interviews, and one is from the focus group discussion.

"A standalone department should be created specifically to address internal climate-induced migration in Nigeria. This department should work with the climate change department; this way, addressing the problems of climate change and climate-induced migration will aid people affected, and help the rural areas of Nigeria adapt well to the adverse effects, but this will have to be aided by good governance, without it a unifying approach will be tantamount to nothing." (MEO-2—Desertification, Land Degradation and Drought Management Department).

"A unified approach is needed. This will require a fully funded ministry to address the climate change issue. This will lead to a good strategy solely for climate change solutions by combining existing scientific, technical, and economic knowledge into a clear overarching blueprint. However, what we have now, are departments split into various units that are not helping the situation. Therefore, this will need to be streamlined, for effective mitigation and adaptation processes to be effective." FGMEO-4—Climate Change Department):

"There is no unified approach to address Nigeria's climate change problems. It is time for various stakeholders to come together and start an interactive formation process through constructive dialogue. To ensure practical implementation of a good unified approach, engaging stakeholders and possibly having a catalyst or central agent to facilitate it." (MEO-1—Human Resource Department).

With these three excerpts, findings show the expert's interview underscores the

cooperation across different agencies in tackling the difficulties presented by climate change and migration. The departments established for environmental assessment and those responsible for climate change and drought management have crucial functions in monitoring and addressing the effects of climate variability on vulnerable populations. The Nigerian government needs to implement governance response policies and programmes that effectively bring together the activities of local, regional and federal government officials to address climate change-induced migration. To achieve these goals, broad-based partnerships across different thematic areas are needed at the local, regional, and national levels, as well as along the Humanitarian, Development, and Peace Nexus (HDPN), and evidence-based policymaking and action based on reliable data, rigorous research and analysis (IOM) (2019).

Approaches tailored to specific vulnerable groups and communities are also essential. This means the introduction of localised measures to prevent and reduce displacement. Addressing the root causes of forced migration helps build community resilience and promotes the introduction and effective management of climate-resilient programmes and development. Integrated approaches across various areas can strengthen the developmental benefits of communities and regions of origin of the people who move in accordance with the United Nations 2030 Agenda, which is aimed at ending poverty. It envisages "a world of universal respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination, including the long-term protection of the planet and its natural resources (IOM, 2019; Benveniste, Oppenheimer and Fleurbaey, 2022). As a result, there is a need for a unified policy approach at all levels (local, regional, and national) that includes the following guidelines, taking the views of experts from the Focus Group discussion into consideration-Ministry of Environment and Local Government officials:

(a) Standardised guidelines and procedures

"The government is aware of the issue of climate change that is troubling people

in the destination region. Experts from different fields, especially environmental, have been campaigning concerning climate change for years. But government attitudes in addressing it have been tepid. We need concrete standardised guidelines to address the problems of climate change" FGMEO-1-Climate Change Department).

"At present, there is no unifying approach to address Nigeria's climate change problems. It is time for a wide range of stakeholders to come together and begin an iterative process of narrative forming through constructive dialogue. This process should engage as many relevant stakeholders as possible, and will probably require a catalyst or central agent to ensure a link to practise" FGMEO-6-—Climate Change Department).

The government can develop standardised guidelines and procedures to ensure the resettlement process is carried out uniformly across the country. These guidelines can provide clear and concise information about climate change mitigation and adaptation plans, including the rights of the affected communities, the procedures for compensation, and the steps must include the provision of sustainable infrastructures. Standardised guidelines and methods can also help ensure that the programmes and policy process are transparent and fair and that everyone involved follows the same national guidelines (Deininger, Selod and Burns, 2012). There is a need for a strategy that focuses on alignment with the Sustainable Development Goals that support climate adaptation and every sector involved. Also, through the Action Plan, the government wide-ranging capacity building activities and tools must support local communities, regional and central government with a structured approach to curb climate change vulnerability and improve the adaptive capacity of the people in line with the national adaptation plan (Deininger, Selod and Burns, 2012).

(c) The guiding principle for migrants and internally displaced persons (IDP) incorporated into national law.

> "There is nothing to be seen to show that the government is addressing the adverse effects of climate change, drought and desertification at the local level, and how it should be handled. The set guidelines are outdated. The main reason we are seeing people vacating the affected rural areas and moving to other areas that can sustain livelihoods. We must have in place a current guiding principle to address the internally displaced persons (IDPs) problems, and it must be incorporated into national law" (FGLGO-7—Community Development Department).

A guiding principle must be incorporated into national law that deals with the predicaments of people affected by disasters, such as drought and desertification. Many governments have yet to incorporate these principles into law, and their application in vulnerable communities has been inconsistent. There is also some debate about how IDP principles impact voluntary, drought-related population movements (Roy et al., 2011).

(d) National research and data gathering concerning information on community migration and displacement patterns.

> "This required collecting climate-induced migration data on movement patterns within local communities. With this, volatile hotspots can be identified, conflicts nip in the bud, and good cultural relations with the people can be promoted" (FGMEO-4—Climate Change Department).

Environmental impact indicators are needed for data gathering concerning information on community migration and displacement patterns and for measuring vulnerability (Roy et al., (2011). These indicators can help identify the communities most vulnerable to disaster-related extreme climate events and identify their needs. Data gathering concerning community migration and displacement patterns will be most effective in that the vulnerability of

individuals affected by the adverse effects of climate change that differ across communities, particularly regarding gender and sociological factors, can be quickly addressed.

6.4 Environmental migration governance in practice: addressing vulnerability and providing social and environmental justice

Environmental migration governance requires a focus on addressing the problems migrants who are vulnerable face, and adequate responsibility by the Nigerian government towards alleviating these problems is vital. Thus, there is a need for a coherent social and environmental justice plan. Social justice must give individuals and groups fair treatment and an impartial share of social, environmental and economic benefits. The concept promotes the equitable distribution of advantages and disadvantages within a society, regardless of background and status. At the same time, environmental justice must deal explicitly with the distribution of environmental benefits and the burdens people experience (Lucas et al., 2004). Both social and environmental justice work are sensitive to power issues and should focus on communities or groups rather than individuals; adopt a holistic approach to analysing and addressing problems and reforms (*Ibid)*.

Thomas et al., (2019) suggest that vulnerability makes people more susceptible to displacement because of exposure to environmental hazards. Poor people are more vulnerable because of their high dependence on natural resources and limited capacity to cope with climate variability and extremes. Experience suggests that the best way to address climate change impacts on the poor is by integrating adaptation responses into development planning (*Ibid*).

Responsibilities are the ethical and legal obligations of governments and other stakeholders to protect and assist those affected by environmental migration (Jubilut and de Oliveira Lopes, 2017). Effective environmental migration governance requires addressing the

underlying factors contributing to vulnerability and unequal distribution of natural resources. In consonant with this, the opinion of experts was sought concerning the handling of environmental migration in relation to offering better *opportunities* to people who are vulnerable responsibly, thereby easing their predicaments and improving their livelihoods. Illustrated below are the experts' excerpts, two from the Focus Group discussion and one from the interview:

> "Climate change migration governance response structure can be handled and better applied to offer opportunities to vulnerable people by providing good environmental migration governance in collaboration with other sectors capable of alleviating the predicaments of the vulnerable and addressing environmental migration's complex issues faced by the vulnerable." FGMEO-1— Desertification, Land Degradation and Drought Management Department).
>
> "Climate change-induced migration can be handled in a way that it offers opportunities to people who are vulnerable by developing policies and programs to support people displaced by environmental factors, such as providing access to education, healthcare, and livelihoods and ensuring that those displaced have legal protections. However, I believe adequate funding is necessary for all these to manifest. Our department is not adequately funded, so putting this into practice is challenging." (FGMEO-3—Human Resource Department).
>
> "First, it is necessary to understand environmental conditions and how they affect these people's lives. Second, adequate funding will have to play a significant role in this process. Third, once there is adequate funding, climate change migration governance practices can be handled better, offering opportunities to vulnerable people by recognising the rights of those displaced

by environmental factors and the responsibilities of governments and other stakeholders to provide protection and assistance. In doing this, individuals, communities or groups will have a sense of belonging in the community." MEO-2—Desertification, Land Degradation and Drought Management Department)

It is evident from findings that the responsibilities of governments and other stakeholders to provide protection and assistance must centre on vibrant environmental justice, or environmental equality, which is now more widely accepted as a fundamental concept and goal of many environmental policies, including improving quality of life and addressing inequalities that are more commonly found in deprived communities and socially excluded groups in most rural areas in Nigeria through access to environmental goods, provision of infrastructure and preserving resources for future generations. This needs to be appropriately enshrined in Nigeria governance response guidelines. This perspective emphasises well-being and an efficient sustainable development strategy for addressing climate change-induced migration.

Furthermore, based on the perspectives of these respondents, it was established that funding is necessary, and a significant factor for climate change migration governance practice to be better handled and applied to offer opportunities to vulnerable people. The cost of loss and damage caused by climate change is estimated to be between 290 to 580 billion USD by 2030 (Nakat, 2023). Regrettably, developing and least-developed countries like Nigeria are expected to shoulder much of this. Polluting corporations and countries should be held accountable and asked to pay for the damage they have caused and continue to cause (UNSDG, 2022; Nakat, 2023).

Funding remains a crucial challenge in land restoration work regarding affected areas. A country like Nigeria needs to be aided in achieving both climate and social justice, and it

requires addressing the historical and ongoing injustices that have contributed to the current existential climate crisis, drought and desertification, decimating various communities in northern Nigeria. With adequate funding and provision of adequate measures and climate resilient infrastructures, displaced people and host communities can adapt, thereby promoting good cohabitation. Also, seeking solutions to the root cause of climate change in the sending region is vital to curbing internal migration, resource contestation and conflict. This will lead to the empowerment of local communities who contributed the least to the problem they are now suffering.

To this extent, as witnessed by the researcher through observation in the community of Nogoa, Makurdi, Benue State, Nigeria, the study site, it was also established that the responsibility of the government and other stakeholders concerning the provision of adequate protection and assistance to those affected by environmental migration is insufficient. There are protection gaps. The responsibility of the government and other stakeholders in providing adequate protection and assistance to those affected by environmental migration is vital in addressing problems faced by vulnerable people, be it in the sending or receiving regions (Gibb and Ford, 2012). It includes developing policies and programs to support people displaced by climate change adverse effects, such as providing access to education, healthcare, livelihood mechanisms and ensuring that those displaced have legal protections, which was lacking in the study site.

Environmental migration governance requires addressing the legal and ethical issues surrounding environmental migration (Nash, 2015). This includes recognising the rights of those displaced by climate change adverse effects, and the responsibilities of governments and other stakeholders by providing protection and assistance. In Nogoa, adequate security was not provided by the government, especially for the women and children, leaving room for abuse.

Environmental migration governance also requires a holistic approach that considers the interconnectedness of environmental, social, justice, and economic factors. This includes recognising the intersectionality of vulnerability, such as how gender, race, and other social factors can exacerbate the impacts of environmental factors on displacement. To ensure that the needs and perspectives of the affected communities are considered, it is important to actively engage and involve them in the decision-making process. In Nogoa, this was not the case. Effective environmental migration governance requires collaboration across sectors and borders to address environmental migration's complex and transnational nature. By taking a holistic and collaborative approach, environmental migration governance can be more effective at addressing the challenges posed by environmental migration. According to findings in the study site, there is no effective collaboration between the two departments tasked with protecting and attending to the activities of people in their care.

6.4.1 Government intervention capability scrutiny in dealing with internal climate-induced migration

Participants were questioned about the government's approach to resolving the conflicts in the communities they migrated to. They stated that because of a lack of funds, the government's hands are tied in dealing with the volatile situation in the host community. Below are the excerpts from the experts' responses. Two from the Local Government-(FGLGO-1, FGLGO-2) and three from the Ministry of Environment-FGMEO-2, FGMEO-4, and FGMEO-6), of similar views.

> According to (FGLGO-1—Community Development Department) "The government is powerless and not helping the situation. Therefore, there are no concrete plans in place to douse tension. This might be because of financial constraints. Only the government can address the financial constraints part."
>
> (FGLGO-2—Community Development Department) explains, "Seeking a

solution to the problem the country is experiencing will need a very robust plan and implementation. The government is making efforts, but the lack of funds is a significant hindrance. Urgent measures are needed to solve the problem people are facing in the community by coming up with compelling plans and programmes."

"We all know that through assessment, climate-induced migration and competition over resources is the bane of the conflict in this community, and it poses a big challenge to peace and development. There is a need for the government to establish robust mechanisms to prevent the resource crisis in Nogoa from spiralling out of control. The arrival of migrants in this community has put pressure on resources because of the increase in population. If this problem is not addressed, it is possible that what led to water scarcity and stopped people from cultivating where the migrants came from can repeat itself in this community. The government is not doing much to solve the problems. More financial resources are needed." (FGMEO-2— Desertification, Land Degradation and Drought Management Department)

Additionally, two respondents, Ministry of Environment officials, were of the following views:

"There seems to be a lack of high-level government plans for climate change adaptation actions, including assessment, because of lack of funds." (FGMEO-4— Climate Change Department).

"The government has been dragging its feet in doing the necessary things to curb the menace of climate change in the sending region. When the environmental ministry reported several years back the problems, some communities were facing in the northern part of the country regarding drought and desertification,

nothing was done by the government. The after-effect is what is happening today, which is in-migration/displacement, resource contestation and conflict in Nogoa." (FGMEO-6—Climate Change Department).

Help for individuals, agro-pastoralists and farmers in fragile and conflict-affected areas is lacking. Conflict and environmental vulnerability affect an increasing number of people, particularly those living in poverty. Protracted crises undermine rural livelihoods and damage agricultural systems. And because of the lack of "political will"-the reluctance or failure of the government to establish policies/programmes to address the problems of climate change and its adverse effects that people are facing in Nigeria. Thus, it is imperative to adopt effective climate change policies that specifically address environmental laws, regulations, and standards. This necessitates the active participation of local, regional, and federal departments, as well as cooperation with global actors who possess the technical knowledge required to mitigate the negative impacts of climate change (Leiserowitz, 2020).

6.4.2 The need for an effective resettlement policy that encourages peaceful coexistence among communities

Providing opportunities to the most vulnerable climate-affected communities by developing a wide-ranging programme with a fit-for-purpose structure is paramount**.** Funding is needed to support pre-disaster mitigation and adaptation concerning climate-induced migration. For vulnerable communities-sending regions, solutions can become challenges when they do not reflect what communities genuinely need, leading to mistrust. The government must understand and prioritise the specific needs of communities to enhance the quality of life and ensure people's comfort. The welfare of the society must be considered. This allows the state to devise and customise relevant programs for affected populations. This is where peaceful coexistence should be encouraged, and a resettlement action plan for those displaced migrants is central to

building harmonious communities, especially in a country such as Nigeria that is ethnically diverse.

Two Ministry of Environment experts made an important contribution with their views on effective resettlement policy and plan that promote cohesive and peaceful communities, while also providing opportunities. Below are excerpts from their interviews:

> MEO-1—Human Resource Department stated, "To build a good peaceful coexistence relationship among people, existing ethnic or religious divides within societies must be addressed by the government through dialogue. When asked about his views on resettling migrants/displaced individuals, he replied, yes! The government needs excellent and effective resettlement policies and programmes to address the problems of climate-induced migration/displacement that have increased the population of Nogoa. This will go a long way in dousing tension and reducing insecurity."
>
> Similarly, (MEO-4—Desertification, Land Degradation and Drought Management Department) "stated that government agencies must educate people and unite groups through town hall meetings to encourage peaceful coexistence. Good governance structure is central to achieving peaceful coexistence and ending conflict caused by resource competition. He went further, stating I believed a resettlement plan should be considered. The government should work with the affected groups to identify their needs and ensure that the resettlement plan meets their needs."

Foresight (2011) asserts that resettlement or relocation is an adaptation in the face of environmental change, such as drought, desertification and other consequences of climate change. It may be an option for governments to resettle or relocate large populations. This was obvious from the expert responses. However, mistrust among communities can often

hinder the success of resettlement/relocation programmes. Notwithstanding the distrust, there is an instance where resettlement brings succour to people. Thus, resettlement as an adaptation must be considered in the context of broader socio-economic and political narratives in which people operate, especially in national settings where complex displacement and resettlement processes have helped define state-rural relations over many years (*Ibid*).

From the findings, resettlement will help to integrate migrants who were identified during observation at the study site Nogoa, begging for alms. Thus, governmentality is needed to help manage resettlement. It revolves around how power is exercised to govern individuals and populations and how people are regulated and controlled through various forms of knowledge, institutions, and practices (Rojo and Del Percio, 2019). Governmentality is understood as the "art or practise of government", which in the broad sense refers not only to political structure or the management of the state, but also to how the conduct of individuals or groups might be directed, that is, the government of children, souls, communities and the vulnerable (Foucault, 2007: p.129).

In resettlement governance, governmentality can help people understand how power is exercised to manage the resettlement of displaced populations (Wiegink, 2020). Governmentality helps shape policies and practices governing the resettlement of displaced people through adequate adherence to listed guidelines (Murray Li, (2007). According to Nosál (2009: p.117) summary, governmentality comprises a wide range of control techniques that apply to a wide range of subjects, from one control of self to "bio-political control of populations"-in order words, the control of customs, habits, health, reproduction and many aspects of society including resettlement of migrants/displaced individuals.

Moreover, applying governmentality in resettlement governance highlights the importance of considering the perspectives and agencies of those affected by displacement and resettlement (MacDonald, 2018). This approach recognises that those affected by

resettlement are not passive recipients of government actions, but active agents in negotiating their resettlement. Therefore, resettlement governance needs to recognise the agency of displaced populations and involve them in resettlement decision-making, bearing in mind their experiences to shape resettlement policies that address their needs effectively (Mortreux et al., 2018). Governmentality can contribute to a more participatory, inclusive, and rights-based approach to resettlement governance. According to the experts, with the following approaches, resettled communities must not be left behind or forgotten once the resettlement process is complete. Below are the excerpts from the experts-Ministry of Environment. Two were from the Focus Group discussion, and four were from the interviews:

(a) Establishment of a coordinated resettlement agency and professionalised resettlement personnel.

> "Resettlement is a good plan. However, the government should work with resettled communities to identify their specific needs and develop programs to help them achieve their goals through coordinated efforts by well-established agencies and personnel" (MEO-3—Human Resource Department).

Thus, findings show that the government can establish a coordinated resettlement agency to provide a unified approach for resettlement. The benefit of establishing a coordinated resettlement agency is that it can help to coordinate the resettlement process, ensuring that all stakeholders are involved and working towards common goals. The agency can also provide training and support to resettlement workers, ensuring they have the necessary skills and knowledge to execute the resettlement process effectively (Brown and Scribner, 2014). This approach can help improve the quality of the resettlement process and ensure that affected communities receive the support they need. Professional and standardised training programmes for disaster response and resettlement personnel should also be implemented. These should be based on internationally accepted best practices. Resettlement,

adaptation and other disaster preparedness funding should be provided to support resettlement programmes (Roy et al., 2011).

(b) Prioritising the welfare of people affected through good resettlement programmes

> "I believe good resettlement programmes and plans should be provided. The government should work with the affected groups to identify their needs and ensure that the resettlement plan meets their needs. With efficient programmes that see to needs of people affected by climate change, conflicts among groups will be minimised" (MEO-1—Human Resource Department).
>
> "The government needs excellent and effective resettlement policy and programmes to address the problems of resource contestation and conflict that are of daily occurrences in community areas migrated to by people affected by the adverse effects of climate change. This will go a long way in dousing tension and reducing the security issues." (MEO-4— Desertification, Land Degradation and Drought Management Department).

Findings show that the Nigerian government should prioritise the welfare of people affected by resettlement. This can be achieved by providing adequate compensation for losing their homes, property and livelihoods (Usang, Ikpeme and Amimi, 2014). Compensation should be based on the value of the properties that have been lost, as well as any emotional or psychological trauma that may have been suffered. Also, healthy environments and lifestyles should be promoted, using changes in health behaviours and health impact assessments to influence policy and decision-making. Also, the government should develop a comprehensive resettlement plan to ensure that resettled communities have access to basic infrastructure, such as water supplies, electricity, healthcare facilities, schools, and marketplaces. The government should work with the affected communities to identify their specific needs and ensure that resettlement plans meet their needs.

(c) Consulting with affected communities and ensuring a transparent, fair, and just resettlement process that brings about excellent coexistence

Based on the feedback from these individuals:

> "There is a need to build good coexistence relationships among groups by applying resource mediation tools. If effectively used, it will help address resource contestation and conflict and lead to a good resettlement and cohabitation process that encourages people to coexist in a friendly and mutual way. And this should be done in consultation with aggrieved parties" (MEO-2— Desertification, Land Degradation and Drought Management Department).

> "A transparent and fair resettlement plan or programmes will help to douse tension and reduce security risks by moving people and resettling them in a less volatile environment" (FGMEO-4—Human Resource Department).

Based on the feedback received, the resettlement process should be carried out in consultation with the affected communities. This will ensure that people's views and opinions are considered when making decisions about the resettlement process. It is essential to consult with communities to identify their needs, concerns, and priorities and to build trust and goodwill between them and the government. Also, the resettlement process should be transparent and fair, so the government should ensure that the process is transparent, and people affected by resettlement are not marginalised or discriminated against. The government should work to ensure that everyone in relation to resettlement is treated equally and that their rights are protected throughout the process.

(f) Provision of adequate infrastructures

> "Government task force/agencies must educate people and unite groups through town hall meetings to douse tension related to resource sharing. Also, providing adequate infrastructures is central to achieving development and

ending conflict because of resource competition" (FGMEO-1—Human Resource Department).

The government should provide adequate infrastructure, which is an important point from the feedback. Providing adequate infrastructure is vital for sustainable economic growth that will ensure that individuals thrive in the resettled communities. This means providing access to essential services such as healthcare and education and opportunities for economic development. The government should work with resettled communities to identify their specific needs and develop programs to help them achieve their goals. This may involve how resettlement policies are developed and implemented and how resettlement processes are designed and enforced. For example, governmentality can help people understand how knowledge is constructed around resettlement, including how the risks and benefits of resettlement are assessed and how resettlement programs are evaluated.

Also, it is evident from this response that government-planned resettlement programmes will play a significant part in dousing tension in Nogoa, and if resettlement is found necessary, rebuilding the livelihoods of resettled people and communities should be the central aim of resettlement programs. Resettlement should be voluntary, and other aims (such as the political motive of weakening opposition to parties in power) should not influence the planning and implementation of the programs. Crucially, the physical resettlement and measures to facilitate it are only one part of a resettlement process, and only partially determine its success. In addition, the host communities need to be included in the process and efforts made to secure their support for the resettlement and people who will be part of their communities, this way, the issue of conflict can be avoided as it is happening Nogoa (Kolstad et al., 2019, Lujala et al., 2020). Place-based resettlement capacity assessments to identify potential resettlement places for climate migrants are needed to guide resettlement programs related to climate change. Equally important, any resettlement program should

consider the cultural and emotional aspects, and seek to provide avenues that help the resettled people feel attached to their new homeplace (Bonaiuto et al., 2016; Brown et al., 2019).

6.5 Conclusion

The findings presented in this chapter shed light on the challenges of climate change-induced migration policy response governance, which can be attributed to the breakdown of Nigeria's political structure that has failed to address the issue of drought and desertification, adverse effects of climate change that have decimated and continue to decimate some parts of the northern Nigeria, resulting in mass migration to the study site, leading to resource contestation and widespread conflict. Thus, the findings presented in this chapter offer a detailed perspective of respondents on climate-induced migration, resource contestation, and conflicts. They contribute to a better understanding of the "root causes or manifestations" of these issues. Specifically, this chapter highlights the importance of an efficient policy governance response structure in addressing these challenges.

Furthermore, the findings in this chapter make a theoretical contribution to the study of eco-violence and conflicts, allowing for a more profound exploration and understanding of climate change-induced migration as an adaptation strategy whereby efficient policy and governance response structure is vital to ease the burden of climate change adverse effects affecting people in a way that resource contestation and conflicts are avoided.

The political developments in Nigeria, as well as the subsequent shift in political opportunity structures and their connection to the ongoing influx of migrants to the study site, causing resource contestation and conflicts, have contributed to our understanding of eco-violence by providing a unique lens through which to view these conflicts and a deeper understanding of the factors that have fuelled their recent escalation in public discourse (Ajala, 2020: Olumba, 2022). Addressing climate-induced migration, resource scarcity/contestation and conflicts through well-organised policies and a robust governance response structure can

promote socio-political stability, create opportunities, and prevent violence. Also, if adequately addressed, migration will be viewed as a factor that boosts innovation, leading to economic prosperity.

An efficient policy and governance response structure is vital and aids in shaping the best policy option for a particular situation. The case of environmental migration governance in Nigeria highlights the importance of effective policy development and implementation in addressing climate change-induced migration, resource scarcity/contestation and conflicts. While progress has been made in recent years, there are still lapses concerning effective environmental migration governance structure administration, including the lack of policies and programs and political obstacles. In addition, to address these challenges, an influential environmental migration governance structure requires a focus on vulnerability and responsibility, taking a holistic and collaborative approach that considers the interconnection of environmental, social, and economic factors. By investing in sustainable development programmes, improving access to education and healthcare, reducing greenhouse gas emissions, and developing policies and programs to support those displaced by environmental factors, an excellent environmental migration governance structure can offer protection and render assistance to those affected and vulnerable.

Climate change-induced migration requires a coordinated and holistic response. Like many other countries, Nigeria faces significant challenges in addressing the effects of climate change on migration, including a lack of trust in its governance structure and limited resources for mitigation and adaptation. It is vital to highlight the importance of decentralising power away from the federal government and involving other actors in the process of governing, such as NGO's. This will help immensely in terms of funding housing development for resettlement, and help the Nigerian government respond to the challenges of climate change-induced migration in tandem with building a robust resilience mechanism against climate

change impacts (Nakat, 2023). According to PreventionWeb (2007), the government has established the National Emergency Management Agency (NEMA), an important agency with the purpose of safeguarding the lives of people affected by climate change and strengthening disaster governance structures in the country, but the problem with this agency is that, what needs to be addressed/done are not been address.

Abass (2014) suggests that policies must be cogently drawn up to enlighten and educate parties on conflicting subjects. The government must enact policies that are not one-sided to warring parties to curb the spate of conflicts emanating from resources, reduce insecurity, and promote harmonious coexistence between communities. This will, among other things, bring about nonviolent cohabitation between people of different religions/ethnicities (Kwaja et al., 2018).

Notwithstanding the measures taken, conflict is bound to arise when there is a lack of control over internal and international migration, as is currently happening in Nogoa, Makurdi, Benue state, Nigeria. (Sayne, 2011; Werz and Conley, 2012; Onyia, 2015), explain that the adverse effects of climatic change resulting in drought and desertification, for example, in Nigeria, will only worsen if they are not addressed holistically before they are out of hand and, in the process, will continue to exacerbate conflict because of resource contestation, which in all honesty is already happening.

The government should incorporate climate change-induced migration into policies and long-term planning. This includes assisting people affected staying put in their communities by providing resilient infrastructure against climate change, providing job opportunities, education, and providing social safety nets.

Armed with this fuller and more complex understanding of climate change-induced migration, I have examined policy and governance response structure in sending and receiving areas either missing or needed towards managing climate change-induced migration in

Nigeria, which addresses research objective 3.

Chapter 7: Conclusion

7.1 Introduction

This chapter summarises the issues covered thus far concerning the study objectives. The main goal and objectives of determining the factors that influence migration and determining how it was used as an adaptation strategy to climate change adverse effects-droughts and desertification by people affected in northern Nigeria, migrating to other parts of Nigeria, resulting in resource contestation and conflict with security implications for the state were met. Also, this chapter presents each chapter's summary, highlighting vital causal factors concerning climate-induced migration, resource contestation, and conflict in the community studied, as well as their broader national implications. It includes climate-induced migration policy governance responses to identify gaps that need to be filled in handling adaptation interventions for the state and other stakeholders' benefit.

Hitherto, this study captivates our attention by investigating and explaining the relevance of climate change as the driving factor of migration by individuals, including farmers and pastoralists, from the northern to other parts of Nigeria, leading to resource contestation that escalated into conflict. In understanding the vulnerability transformation dynamics widely suggested in the climate change-migration-resource contestation-conflict linkage, this study utilised a combination of theoretical, which are Eco-violence (EV), Frustration-aggression (FA) and Sustainable Livelihood Framework (SLF), which help significantly in data analysis. Managing the relationship between humans and the natural environment in a mutually beneficial manner is based on the idea that "nature has a functional value in addition to its economic, aesthetic and moral values" (Ehrlich and Ehrlich, 1981: p.6; Berghöfer et al., 2022). The chapter concludes by providing policymakers with recommendations and discusses future related research that contributes to knowledge, methods, and viewpoints distinct from those of already established fields.

7.2 Revisiting the study objectives

7.2.1 Exploring stakeholder views on 'migration as adaptation strategy' to climate change in Nigeria.

Findings show that drought and desertification, offshoots of climate change, exacerbated out-migration from the sending region-(northern to the transit and destination areas in the southern part of Nigeria). Food and water shortages caused by desertification and drought have sent people, including nomadic pastoralists, mostly ethnic Hausa and Fulani people, from the sending region to the south. Simultaneously, weather-related factors have pushed farmers to reserve land for grazing, leaving pastoralists with fewer options for watering and grazing their livestock. Climate change (apart from a few rebuttals) is now recognised across policy and academic circles as a significant problem for human security (Akinyemi, 2016). It is described as the foremost among the most formidable challenges facing the world in the 21st century. Because of the danger it posed to the world, it was designated as the security risk of the twenty-first century. Some argue that it is a global challenge that knows no borders and thus requires an international response (Akinyemi, 2016).

Stakeholder views on climate-induced migration from northern to southern Nigeria show it was used as an adaptation strategy to sustain livelihoods. Migration as an adaptation and coping strategy for climate change was identified, and some of the risks involved in such strategies were highlighted. Apart from viewing migration as a last resort, the researcher identified that migration could become a new way for people to diversify agricultural livelihoods in response to climate change impacts in Nigeria. Such migration strategies allow individuals to diversify their income and minimise risk for the household. Climate-induced migration as adaptation is a policy area that must be given more consideration. Randall (2017) suggests that by not addressing climate-induced migration, development organisations could be devaluing a prominent and important adaptation strategy, creating imbalance, and preventing attending to the needs of the most vulnerable in the society. In this context, the

discourse has shifted from highlighting the forced nature of environmental migration and related security threats to emphasising on migration as one possible, proactive adaptation solution that should be governed and facilitated (Piguet 2013). Also, migration as an adaptation argument in this thesis indicates that households assess all available options to adjust to hazards and choose the ones best suited to their situation, which can include a conscious decision to migrate if needed resources are accessible elsewhere (Bilsborrow, 1992; McLeman and Smit 2006; Black et al., 2011; McLeman 2016).

The concept of migration as an adaptation strategy and pattern was established, and it involves anticipation and planning by individuals, households and agro-pastoralists affected by the adverse effects of climate change that migrated from the sending to transit and receiving regions based on the feedback from the stakeholders interviewed in this study. Moreover, we must recognise that while migration improves an individual's and household's situation, it may obscure national governments or the international community's lack of action on climate change adaptation, as is currently the case in Nigeria. Regardless of long-term planning, migration can result in greater vulnerability and decreased capacity to adapt if it does not adequately address the livelihoods and vulnerability of migrants and their families. This type of ineffective migration is known as erosive or maladaptive migration (Warner et al., 2012; Warner and Afifi, 2014).

Droughts and desertification in several northern states, caused by rapidly receding grassland vegetation, have prompted the migration of individuals, households, and agro-pastoralists from semi-arid agro-ecological zones down south seeking lush green vegetation for their herds.

The first objective of this study concludes that adverse effects of climate change-drought and desertification lead to out-migration from northern Nigeria to the study site of Nogoa. In line with the feedback of experts interviewed, it was discovered that the adaptive

migratory pattern of migrant individuals and farmers-pastoralists was discovered to be seasonal at the initial stage before becoming permanent, taking refuge in transit and destination areas. Whether sudden or slow, environmental migration is an adaptation strategy that minimises harm to migrants and improves their living standards. It was established that migrants affected by the adverse effects of climate change plan their journey in advance to transit and destination areas before migrating, and this journey is embarked on when all hope is lost for survival in the sending regions. The amount of investment required to respond to and mitigate climate drivers of migration and displacement exceeds the resources of a single country. It will take the entire world's convening and leveraging power to address the social, political, and demographic issues associated with the effects of climate change in sending, transit, and receiving regions.

7.2.2 Exploring issues of resource contestation and conflict that have emerged due to climate-induced migration in Nigeria.

The research indicates that migration caused by climate change will adversely affect Nigeria's political, economic, and demographic systems in regions where people leave, pass through, and settle. This will cause conflicts and competition over resources. Climate change-induced migration is more than an environmental crisis; it is a social crisis that requires immediate attention and compels us to address issues of inequality on multiple levels: between wealthy and disadvantaged countries, within countries, between men and women, and between generations (Moore et al., 2022; The World Bank, 2023). The Intergovernmental Panel on Climate Change (IPCC) has emphasised the need for climate solutions that adhere to procedural and equal rights and justice principles to achieve more effective development outcomes in sending, transit, and receiving regions (Moore et al., 2022). Poor and marginalised people's predicaments require ambitious climate change mitigation and adaptation plans and actions. Politics and society largely dictate climate policy ambitions.

Climate change models and projections rarely include political and social drivers that are efficient at solving the problems associated with climate change-induced migration impacts, resource contestation and conflicts in a well-framed social and political aspects that address the challenges faced in sending, transit, and receiving regions, as well as the demographic shifts that accompany them in Nigeria. Addressing climate-related migration, resource contestation and conflict effectively will necessitate action from all stakeholders, including ensuring that those most affected can make informed decisions in response to the adverse effects of climate change.

Furthermore, the study's findings show that migration used as an adaptation strategy by individuals and households from the northern to southern Nigeria is linked to resource contestation leading to conflict, which is influenced by the adverse effects of climate change, namely drought and desertification. The truth is that the resources competed for, due to pressure and overuse, are becoming finite, leading to conflict among groups. The shrinking resource pie' exacerbates violent civil conflicts and strained social relationships among groups. The core postulation of eco-violence is that resource depletion reduces the total [resources] available, while population growth divides what remains [of such natural resources] into smaller portions. Migration and resource depletion due to the adverse effects of climate change are two decisive factors that have converged to produce the conflict that Nigeria is currently experiencing. An upsurge in the farmer-herder conflict in host communities has been linked to climate change-induced ecological declines, particularly in the country's arid northern region, which is experiencing Sahelian drought and desertification. It has been identified as a significant factor in resource scarcity and migratory adaptation. Disputes over limited natural resources accounted for 40% of all intrastate conflicts over the last six decades, with a dozen occurring since 1990. (See Sayne, 2011, p.6). The increasing occurrence of pastoralist encroachment on farmland of the host community people not only

fuels suspicion and hostility between herders and local communities, but also exacerbates other security challenges with significant implications. This is particularly problematic in a country where inter-ethnic/group relations are already fragile, as groups view one another with suspicion, fearing domination (Kilani, 2021).

The second objective concludes by providing an overview of climate change and its social, political, and demographic impacts on migration for sending, transit, and receiving regions, with the conclusion that climate change adverse effects have led to the diminution of resources in the sending region, leading to out-migration to receiving areas resulting in resource contestation escalating to conflict informs how better governance approach can better address the effects of climate change on displacement and migration.

Additionally, from 1975, when the population was 63 million, to 2013, when it was 171 million, and 2021, when it was 211.4 million, Nigeria has seen an increase in agricultural land use decreasing and degraded forests (cleared for fuel wood and agriculture), and desertification (Sciubba, 2021; PRB, 2021). Nigeria northern states-sending region has one of the world's highest fertility rates and is experiencing the fastest natural population growth. These states have suffered enormous climate-induced degradation, with water scarcity, the inability to graze cattle on increasingly environmentally degraded land, and outbreaks of violent conflicts borne out of the son of the soil syndrome are driving individuals and households southward. Sciubba (2021, p.3) explained, "sons of the soil conflicts occur when members of the local or indigenous group who claim some tie to the territory (the sons of the soil) clash with ethnically distinct migrants from other parts of the country or neighbouring ones over competition for land, jobs, housing, and other political influence". Precisely what is transpiring in Nogoa, Makurdi, Benue state, Nigeria. To halt this visible trend in Nogoa, there is an urgent need for social, political, and demographic action that addresses the impacts of climate change-induced migration. Thus, the causal chain between environmental

degradation and socio-political and population pressures, on the one hand, and resource contestation and violence, on the other hand, is much more pronounced and fully established (Sciubba, 2021).

7.2.3 Assessment of governance and policy responses to climate-induced migration in sending and receiving areas of Nigeria.

Because of climate change, individuals using migration as an adaptation means from sending to receiving location have advantages and disadvantages. Migrating from the place of origin creates a vacuum. Thus, there is a need for a better way of laying a foundation for the efficient delivery of a coherent policy that will make it possible to solve climate-induced migration, resource contestation and conflict problems through viable infrastructural development, good policy frameworks, and ways to relieve individuals' concerning the stress and shocks encountered (Craig, 2010), if not, people at risk will still face the problem of *migration-maladaptation* (Schipper, 2020; Chu, Buckling, and Zhang, 2022). That is, failure to adjust adequately or appropriately to the new environment or situation migrants find themselves in. It denotes that when climate change adaptation actions blowback and have the opposite of the envisioned effect, it increases vulnerability rather than decreases it (IPCC, 2022). The primary objective of individuals escaping from an environmentally decimated area is the sustainability of livelihoods, which is an adaptation in the real sense to enhance or maintain social and economic benefits available at the destination area. Using migration as an adaptation for the betterment of livelihoods should not be beneficial or solve problems of a particular group while worsening those of another, most notably in the destination areas (Craig, 2010). Thus, using migration as a survival mechanism could have multiple benefits for some regions, people, and sectors, as well as harmful effects for other places, people, or sectors, as is the case in the study site Nogoa. It is vital to consider and address wide-ranging environmental consequences associated with climate change; otherwise, there is the risk of

developing a false confidence level regarding a solution (Salehyan, 2008).

Research findings indicate that the discourse on climate change and migration needs to undergo a transformation. Instead of just classifying migration as a consequence of climate impacts, it should be recognised as a form of human adaptation. The successful execution of this shift necessitates the implementation of impactful policies and programs that adequately tackle the present circumstances. The expected level of exposure to climate change adverse effects means that people will be unable to maintain a basic standard of living, making permanent habitation in Nigeria technically or morally impossible. In the cases of extreme events like drought and desertification in northern Nigeria, the sole feasible approach for survival is migration. Thus, according to the findings of this study, it is paramount that the governance structure's response concerning climate-induced migration is fit for purpose. It is then that adequate policies will be implemented to address climate-induced in-migration established at the study site of Nogoa, Makurdi, and Benue state, Nigeria. The forced nature of environmental migration was highlighted in this study as one possible proactive adaptation solution that should be governed responsibly. Policy experts' input is needed (See Hall, 2015; Sakdapolrak et al., 2016; Honarmand, Ebrahimi and Ossewaarde, 2019).

Because of resource contestation and conflict caused by in-migration to the study site leading to the loss of lives and property established, through policy analysis using feedback from respondents and an in-depth desk review of existing literature and policy documents which deals with policy and regulatory responses in Nigeria in relation to climate change-induced migration and adaptation measures, resource contestation and conflict, the recommendation given will play a significant part if make use of, in solving some problems highlighted in this study. The actual and potential connections between the environment, climate change-induced migration, resource contestation and conflict are due to the absence of a good governance response structure. The links between climate change, human migration,

resource contestation and social conflict identified in this study currently add to Nigeria developmental problem. These linkages are important to policymakers, donors, non-governmental organisations, parastatals, governments, and scientists because they will undoubtedly lead to the solutions and realisation of viable sustainable development goals if efficient policies and programmes are in place devoid of corrupt practices by government officials.

In examining and analysing the study objective on policy response and governance, it comes to the fore that the government does not have an adequate policy in place to address the problem of climate change-induced migration in Nigeria. In light of this, the study suggests that more research concerning climate change-induced migration, resource contestation and conflicts is needed in Nigeria. The main reason in this study governance response structure and policy implementation issues were analysed, giving adequate attention to climate-induced migration, resource contestation, and conflicts. Nigeria's poor climate change adaptive response to these climatic shifts leads to severe resource shortages, which cause people to migrate from the northern to southern Nigeria. There are concerns about Nigeria's ability to adapt to climate change, and this is under scrutiny.

While some adaptation policy initiatives exist, they are underdeveloped, insufficient, and inefficient (Agu, Onyeabor and Agu, 2020; p.6). Adaptation policies, such as the "National Policy on Drought and Desertification; Drought Preparedness Plan, 2007; National Policy on Erosion, Flood Control, and Coastal Zone Management, 2005; and National Biodiversity Strategy and Action Plan, 2004," have remained well articulated on paper at best. Their activities have barely progressed beyond mere rhetoric due to a lack of both the technicalities and political will to establish and support the necessary institutional framework to carry out these policies (Agu, Onyeabor and Agu, 2020). Existing data identified two resource shortages, these are fertile land for cultivation and water. In this regard, most of

Nigeria's northern states are already experiencing widespread drought and desertification because of increasing sand dunes. The northern region of Nigeria has been the hardest hit by the adverse effects of climate change; unfortunately, there is insufficient national specific policy and analysis of climate change. Without government intervention, the fate of the people living in this region is bleak.

Beyond discursive debates, human subjects' research on migration should lead to better human development and the protection of those most vulnerable when migrating from the northern to southern Nigeria. As the climate crisis worsens, institutions should direct research funds toward finding solutions to enable migration that can support effective adaptation while addressing often overlooked noneconomic losses and pressures on well-being, aided by effective policies in place. Adequate research, backed up by sound policies, could achieve three major objectives: improving the ability to plan and anticipate, expanding the range of options available to individuals affected, and identifying pathways to successful outcomes for migrants in sending, transit, and receiving communities.

The Nigerian government active participation is critical to achieving the best results. To date, official responses have been inadequate. Along with improved data gathering on climate-induced migration within the country, Nigeria requires a central federal oversight body to coordinate research and policy, expanded roles for sister agencies, and sound implementation of adequate and adaptive programmes. The government also needs help from the developed countries through adaptation funding and technical know-how.

The third objective concludes that there should be a focus on good policy and governance response structures, and the establishment of an empirical link between climate change stress and shocks, including population movement within Nigeria, grounded in the establishment of baseline data that will guide future policy direction and strategic planning. And given that migration is a form of local-level adaptation (or a survival strategy) and

conflict is a directional reaction to these adaptation manifestations (or a defence strategy), the suggestion is that laws and policy-making can only thrive when there is an informed appreciation of the policies and legislation's letters and intents (House of Common, (2013).

7.3 Summary of the empirical and theoretical contributions of the research

This research makes a general contribution to the environment, migration, resources and conflict literature by using an empirical case study to conclude that climate change is likely to lead to rural-urban migration, and is expected to contribute significantly to resource contestation and conflicts. Environmental stresses and shocks lead to migration from the affected region to a more conducive environment for the sustainability of livelihood.

This thesis also contributes to the literature on circulation and permanence (e.g. Potts, 2010, 2012) by presenting evidence of permanent rural-urban migration from an environmentally affected northern to the southern part of Nigeria. Also, it shows that circular migration exists between rural and urban areas in Nigeria, and the physical movement of people between rural and urban regions defines it. The research identifies with the 'empirical regularity' that people affected by drought and desertification, an offshoot of climate change in affected areas, are most likely to migrate. This suggests that migration from the northern to the southern part of Nigeria is directly connected to resource scarcity and conflict, and is a strategy that individuals and households use to adapt to the adverse effects of climate change. As such, an empirical contribution to understanding the link between migration used as an adaptation, resource contestation, conflicts and the adverse effects of climate change is made (see Coniglio and Pesce, 2015; McMichael, 2020).

Knowledge was contributed by identifying some research gaps in climate change induced-migration used as an adaptation strategy and resource contestation leading to conflict in Nigeria. Even though some research has investigated climate change induced-migration in Nigeria, none has yet to go into details of researching climate change induced-migration used

as an adaptation in conjunction with resource contestation and conflict fully, the way this study investigated the scale and magnitude of future impacts. This is critical in providing better insights into effective environmental plans, resource management, use, and adequate security for the state.

Nigeria has not been adequately researched concerning climate change and its adverse effects, especially drought and desertification ravaging the northern Nigeria, fuelling migration used an adaptation strategy to the study site Nogoa, Makurdi, Benue state, Nigeria, leading to resource contestation and conflicts. Although there is a substantial amount of existing data in certain fields conducted in the South, such data may not be transferable to the northern part of Nigeria, the most drought and desertification decimated part because of the differences in weather patterns. In addition, there is a lack of research in Nigeria that investigates the effects of multiple variables of climate change in the same way it was done in this study. Such experimental research is required to provide more explicit evidence of the impacts of these changes in the coming decades. Based on the current situation in Nigeria, a combination of scientific and local knowledge would aid in real-world understanding of experiences, risks, and adaptation strategies. This specific combination can be used with methodologies and approaches that complement each other. The overall effects of climate change across sectors may limit sustainable development in various ways. This is because climate change and sustainable development are becoming increasingly intertwined. Climate change influences the prospects for sustainable development, which in turn influences not only future climate change, but also adaptive capacities and mitigation outcomes.

Additionally, this thesis contributes to the small body of literature on climate-induced migration in Nigeria used as an adaptation strategy leading to resource contestation and conflicts, where knowledge and assumptions are so paper-thin that it is difficult to formulate a realistic understanding. Thus, this thesis suggests that migration represents an adaptation

space for survival for migrants from the northern to the southern part of Nigeria. Also, a contribution is made to the literature on adaptation and coping strategy with stress and shocks of adverse effects of climate change by arguing that most people in rural northern Nigeria move away from sending to transit and destination areas that can sustain livelihoods, which in effect leads to resource contestation and conflicts. Nigeria's volatile political climate, because of violent clashes between migrants, pastoralists, and farmers in transit and destination areas, primarily in the country's southern region, has affected inter-group/ethnicity relations. This has left Nigeria facing a serious security challenge, resulting in the deaths of thousands of people, the displacement of over two million people, and the massive destruction of infrastructure and facilities in the southern region.

7.3.1 Outline of climate change-induced migration as an adaptation, resource contestation and conflict connection

Climate change-induced migration-adaptation from the northern to southern Nigeria leads to resource contestation and conflicts in the study area-Nogoa, Benue State, Nigeria. With these established links, these goals were identified and essential:

- The role of socio-contextual variables such as culture, institutions, economics, and systems in transforming climate-related migration, resource contestations, and adaptation was investigated.
- Climate change-induced migration and insecurity were linked in the research region of Nogoa, Benue State, Nigeria.
- The transformation, dispersion, and broader security consequences of climate-induced migration were investigated, resulting in resource competition and conflict in the host communities.
- Policy suggestions concerning how Nigeria can reduce climate-related migration, community conflicts, and associated security problems were provided.

This research emphasised on the effects of climate change on the natural resource base, which impacts people's livelihoods in resource-dependent regions, by establishing a connection between climate change and migration as an adaptation strategy in the studied area. As noted by the Committee on Abrupt Climate Change (2002) and UNEP (1996), considering the significance of natural renewable resources as a significant ecological capital in the research region, theoretical connections for the climate change-livelihood interactions were developed in a series of studies.

In capturing the social-demographic dimension of the problem, the study also brought to the fore the role of these factors: climate-related migration, resource contestation, conflicts and insecurity in Nigeria, especially in Nogoa, Makurdi, Benue state, in studying the dynamics of vulnerability concerning the population affected by the adverse effects of climate change. The nature and contribution of cultural, institutional, economic, and systemic factors were also highlighted. Through a detailed theoretical background, this study clarifies the importance of the theoretical convergence of Eco-violence, Frustration-aggression, and Sustainable Livelihood theories.

Furthermore, we can understand how migration is used as an adaptation strategy by people facing adverse environmental effects, resulting in resource competition in the host communities, and how the struggle for access to these natural resources leads to frustration among migrants, leading to the force of obtaining the essential resources needed to survive, based on the responses of respondents from the interviews conducted and focus group discussions. This significant input to this research shows how population vulnerability to climate change manifests from environmental deterioration to resource limitations, resulting in demographic issues via human migration and resource contestation, the bane of the conflicts Nogoa is experiencing (Akande, 2014; Emeh, 2012; Osakwe, 2013).

More than ever, the adverse effects of climate change are being witnessed and

experienced globally. Almost every country in the world can attest to experiencing some aspect of the fierce backlash the environment is giving in retaliation to decades of unfriendly industrial, scientific, and agricultural practices at the detriment of the environment. For example, in July 2021, countries such as Germany, Belgium, and the Netherlands experienced extreme flooding (Berardelli, 2021, p.1). Furthermore, there have been a series of destructive wildfires in Greece, Turkey, Russia, the USA, and Algeria, which experts are referring to as the most severe in almost a decade (The Guardian, 2021).

People move around the world due to their integral role in the environment and the earth's ecosystem. Migration has become an effect of climate change (Larr and Neidell, 2016). This effect translates into long-term or indirect consequences that affect the environment (Khan, 2019). This direct effect adversely affects human beings, who are sometimes forced to move to other locations that are much more habitable than their current habitual residence to survive. In reality, migration is highly contentious in most countries, whether internally or across borders. The International Organisation for Migration (IOM) highlights key elements concerning environmental migrants as follows: persons or groups of persons; sudden or compelling change(s) in the environment; and taking leave of a habitual home to go to another location within or outside the country (Chazalnoel and Ionesco, 2018). Therefore, environmental migrants are internally displaced or have to move to another country for their safety and/or that of their families (Nicholson and Kumin, 2017). The term ‘environmental refugee’ is being used to refer to this group of people (Myers, 1997). The scope of this phrase is that some environments become so harsh and unfavourable because of climate change, such as desertification, extreme drought, or flooding, that the land can no longer be relied on for sustenance. Therefore, the occupants are compelled to move to another area within or outside of a country to seek a better life.

The conversation surrounding climate-induced migrants is growing, mainly because

of the opposing sides. On the one hand, there are proponents with the idea of extending refugee protection to this group of individuals. The current criteria for who qualifies for refugee protection are outlined in the Convention Relating to the Status of Refugees, established in 1951. The United Nations Refugee Convention of 1951 states that individuals who are being persecuted or face the threat of persecution are eligible. It does not refer to individuals whose livelihoods and health are threatened or destroyed by the adverse effects of climate change. Proponents argue that migration is a good adaptation strategy when applied to many geographical locations suffering climatic changes (Borderon et al., 2019). Several other researchers undertook a study that determined that environmental changes influence migration patterns, but are not the only reason for migration. It is worth noting that the Refugee Convention was negotiated in 1951, during a period when the international order's primary focus was on addressing the refugee crisis resulting from colonialism, the Second World War, and the Holocaust (Krause, 2021). It is crucial to uphold the principles in order to safeguard refugees. However, given the emerging issues like climate change and its impact on migration patterns, it may be necessary to review and update the treaty accordingly.

On the other hand, critics argue that there is insufficient evidence to justify amending the international treaty-Refugee Convention to include protection for migrants displaced by climate change. Critics postulate that scientific evidence has always been influential in establishing laws and creating policies, and must be applicable to the issue of climate-induced migrants (Schneider, 1989; Percival et al., 2017). Critics believe it is rash to add climate-environmental changes as grounds for refugee protection when there is insufficient evidence (Tacoli, 2011). They argue against affixing the word refugee to climate change-induced migrants because it takes away the intended protection aspects.

This argument flops considering the preceding circumstances concerning climate change. The evidence can be derived from all corners of the world, showing the dire situation.

Research conducted by scientists has highlighted the dire consequences of inaction on climate change. For example, a drought severity analysis of Somalia shows that mild-to-moderate drought conditions will persist beyond 2022 (Food and Agriculture Organisation of the United Nations, 2021). Wildfires in areas such as Siberia have forced people to leave their homes and go to other regions (Dixon, 2021). The floods in Europe have been attributed to long and slow jet streams that are likely to grow longer, and are influenced by continuous heavy rainfall (Lombrana, Warren, and Sullivan, 2021). The carbon emissions (CO_2) that contribute to global warming are still circulating, and at an all-time high in highly industrialised and developed countries such as China (Xu et al., 2021). These incidents embody climate change's immediate and long-term effects, hence their relation to environmental migration.

Scholars are increasingly agreeing that migration is a component of beneficial adaptation methods used due to climatic change. Proper control measures should be implemented when people are forced to migrate because of climate change, to ensure that overpopulation does not exist, and to avoid conflicts between groups (Bardsley and Hugo, 2010; Black et al., 2013; McLeman and Smit, 2006). It can help to lessen population pressures in areas prone to climate risks (Lonergan 1998; McLeman and Hunter 2010). The argument holds when migration is identified as an adaptation strategy. In this instance, migration only helps the affected individuals find a safer temporary place, but does not address climate change adverse effects, which, if not addressed to alleviate what the vulnerable are going through, will turn out to be maladaptation. Potentially effective adaptation strategies must be aimed at three main stakeholders: individuals, organisations, and the government (International Federation of Red Cross and Red Crescent Societies et al., 2009). These three stakeholders are ideally meant to collaborate to enhance the adaptation of the ecosystem to climate change, and hopefully reduce the harsh effects of climate change.

The adaptation strategies propounded have yet to be implemented by stakeholders.

They revolve around reducing carbon emissions through better waste disposal strategies, carbon dioxide (CO_2) emission reduction, reforestation, and afforestation methods (NASA, 2021). Because adaptation is categorised into two levels: broad application and implementation (Butler et al., 2012), the strategies mentioned above fall within the level of broad application. So many countries are still struggling with the implementation phase. Some governments have reinforced their commitment to adaptation by pledging to achieve and reduce their carbon emissions footprints from 2023 to 2025 (Newburger, 2021; United Nations Climate Change, 2021). International organisations are contributing to this commitment by financing scientific research and projects that seek alternative, environmentally friendly, and sustainable sources of energy (Timilsina, 2021).

There is still an ongoing discussion on environmental migration, particularly that of people affected by climate change adverse effects. This relates to adaptation to climate change because migrants may further upset the ecosystem or contribute positively to its restoration. Governments, organisations, and individuals all have critical roles in converting the broad application of adaptation strategies into implementing good programmes toward salvaging the ecosystem that has served humanity for decades. This will go a long way in addressing the ugly situation.

7.3.2 Climate change-induced migration governance

We live in a constantly evolving society and ever-changing world. The governance structures[11] that we have in place in our societies must incorporate traditional unchanging values and principles. However, to remain legitimate and relevant, these structures must be updated to address the natural societal changes. Climate change is one such change hinted at. Climate change-induced migration is one change that translates into a significant societal issue

[11] The system of governance, particularly the rules, procedures and roles of responsibility that influence decisions. A strong governance framework helps organisations to set direction and priorities, establish accountability and manage risks effectively (CGIUI, 2023).

requiring government regulation. It is a natural result of how societies have managed the environment, a development that is not environmentally sustainable or friendly.

The International Organisation for Migration (IOM) oversees migration issues globally. IOM defines environmental migrants as a person or group of persons who, owing to sudden or compelling environmental changes, leave their habitual home to go to another location inside their country or another country (Chazalnoel and Ionesco, 2018). Consequently, we can argue that migration embodies voluntary and involuntary movement to another location because of adverse environmental changes.

Human migration concerning climate change is categorised into three aspects. The three categories are displacement, migration and location (Wilkinson et al., 2011, p. 3). Migration can be a voluntary or forced movement from one location to another owing to unfavourable environmental circumstances, - which can be translated to cause displacement as well. Given the recent adverse climate change events (Berardelli, 2021), it is unlikely that an individual will stay in a location where there is no chance of survival due to the adverse effects of drought, desertification, flooding, or intense fires, and when people are displaced, governments, and organisations such as NGOs aid in resettling displaced individuals. This is where a good governance response structure is needed to oversee a smooth resettlement process when climate-induced displacement/migration transpires. When it comes to the issue of the governance structure for climate change-induced migration, three elements stand out, and can be used to develop governance policies on climate-induced migration;

The *first* element postulates that migrants are persons or groups of persons. It is recommended that these people or groups be treated from a human security perspective (Elliot, 2012). The idea is that climate change's adverse effects pose an existential threat to these people. It emphasises the high risk that climate change poses to people's lives and health. This is evident in the Global Climate Risk Index of 2021, which states that approximately 475,000

people died from 11,000 extreme weather events between 2000 and 2019 (Eckstein, Künzel, and Schäfer, 2021). These changes, in turn, lead to migration (Martin, 2010). Scholars argue that for government protection to be invoked, it must be shown that there is a causal link between the sudden or compelling environmental change and the temporary or permanent relocation of the person or group of persons (Mayer, 2012). This would qualify a person or group of persons as climate or environmental migrants and invoke the government's duty to respect and protect their rights.

Accordingly, it invokes the state's duty to protect and promote the rights of the people affected by the adverse effects of climate change (Arbor, 2008). Promoting human rights involves empowering people (Baysal and Karakas, 2017), and this is where empowerment comes in. Empowerment must entail sensitising people on how environmental degradation occurs, at what level it happens, and how to apply better environmentally friendly and sustainable methods in relation to daily activities.

The *second* element is the abrupt or compelling changes in the environment. This points toward an immediate effect of climate change (Larr and Neidell, 2016), such as the wildfires witnessed in August 2021 in Greece, Turkey, and Siberia (Sommerlad, 2021). These changes, in turn, raise issues such as whether migration will be temporary or permanent (Martin, 2010). Geological record shows that abrupt changes in the Earth's system can occur on timescales short enough to challenge the capacity of human societies to adapt to climate change adverse effects. In many cases, abrupt changes arise from slow changes in one component of the Earth system that eventually pass a critical threshold, or tipping point, after which impacts cascade through coupled climate–ecological–social systems. The chance of detecting abrupt changes and tipping points increases with the length of observations. If the change is so immense as to require permanent relocation, there will be a need for resettlement programs, which are often mandated by the government (Jayawardhan, 2017).

Promoting awareness about environmental changes and educating the public on adopting eco-friendly and sustainable practices in their daily lives is a crucial responsibility of the government, and the government should also prioritise enforcing ethical compliance practices among industries.

The *third* element is about where the environmental migrants relocate to. Usually, they move to another region within the country but may relocate to another country (Cattaneo and Massetti, 2015). When climate or environmental migrants move within or outside of a country, they are subject to the country's governing laws and protection, there are no laws that safeguard the rights of climate-induced migrants (De San et al., 2021). Thus, there is a need for international governance structures that see to the need of climate change-induced migrants and regulate the movement of people, whether within or across borders, because there is no explicit international law that governs within or cross-border climate or environmental migrants, and this is possible if governments around the world work together (Warren, 2016). (Francis, 2020). However, it is a resounding argument that the law about refugee protection should be applied, considering that the government bears responsibility for granting refugee status (Nicholson and Kumin, 2017). Most governments do not fully support this argument, preferring a new, explicit law in relation to climate or environmental migrants' rights and status.

By examining the intersectionality of these factors and the interplay of the related issues, their significance becomes apparent. The topic of climate change-induced migration brings together various aspects such as environmental law, international law, conflict laws, democracy, and the different organisations and entities that are engaged in these fields (Kaijser and Konsell, 2014). This justifies the discourse linking climate change and its effects to social and environmental justice, gender, democracy, critical feminist theory, etc. The government is involved as either perpetrators of injustices or protectors and alleviators of people's

suffering, hence the need for an awareness campaign, as well as community orientation and participation. Proper public participation initiated by the government in conjunction with the scientists and awareness can make these communities aware of climate change. For instance, one significant aspect of democracy is public participation. In this regard, creating awareness and encouraging public participation is a deliberative democracy of sensitising people about the adverse effects of climate change, and this could lead to the development of plans/programmes (specific solutions) for dealing with the environmental issues in various communities through feedback from the population.

Fiskio (2012) posits that rural communities often hold particular beliefs and myths surrounding the adverse effects of climate change on the environment, and may take up culturally based methods to combat these changes, in the absence of up-to-date plans or programmes to sensitise people about the adverse effects of climate. Proper public participation initiated by the government in conjunction with the scientists and awareness can make these communities aware of climate change. This is a form of deliberative democracy that could create specific solutions for dealing with the environmental issues in these locations.

Another essential matter of note is the plight of minorities and marginalised groups. The government must always respect, promote, and protect their rights, especially in relation to climate change-induced migration (Roschmann, 2013). In the climate change context, and particularly regarding the environment and geographical location, the plight of minorities and marginalised groups is likely to worsen. Disadvantaged communities often encounter disparities in housing or their habitual living arrangements (El-Geneidy et al., 2016). An example are indigenous groups that live in the rural areas or areas generally inaccessible to the rest of the population because of mountains or forests (Leahy, 2015). Their homes and livelihoods are tied to features of the environment that are highly affected by climate change

(Alberti, 2019). This makes them more susceptible than the rest of the population to the adverse effects of climate change. Their safety should be a priority when establishing governance structures.

It is increasingly becoming difficult to ignore the fact that migration will persist because of the adverse environmental effects that are being witnessed worldwide. The governance structures for enforcement of these laws will have to cater to issues such as sovereignty and problems such as corruption and state inequality, which often hinder social and environmental justice (Marchiori and Schumacher, 2011). The intersectional nature of climate change-induced migration calls for unity and cooperation concerning governance structures to combat and mitigate climate change-induced internal migration leading to resource contestation and conflict as expeditiously as possible.

7.4 Challenges and limitations of the research

The volatility of the studied events represents a fundamental limitation anticipated through this study's progression, leading to the risks of information gathering and focus group assemblage and interviews. Linked to this, as stated earlier[12], is the emergence of the *COVID-19* pandemic, which made it impossible to interview certain groups, especially migrants affected by climate change adverse effects. Social distancing rules and regulations aimed at curbing movements by governments worldwide make it impossible to conduct these interviews. Also, because of security and vulnerability issues, the school research ethics committee, a valuable resource for advice and guidance, advises against contact with these migrants. As a result, experts and host community leaders' opinions were sought: the Ministry of Environment officials tasked with the state's environmental issues, local government officials assigned with the administrative governance of the community where migrants are

[12] See Chapter 3, subsection 3.5.1, page 136 for Representativity and significance of the sample for interviews.

located, and community chiefs' who are custodians of cultural practices. This approach made it possible to gather valuable vital data, a significant factor in gaining insights about the study population to conclude this thesis successfully. In seeking experts' and host community leaders' opinions, live video interviews that provide many of the same benefits as in-person interviews were applied, using a user-friendly video platform (Zoom) that helps consolidate communications, connect people, and creates a seamless research experience through intuitive application, thanks to the excellent interface the platform developers have put together.

As a result, concerning the above statements, Chapter 6 findings on policy and governance that address research objective 3 compensated for the shortcomings of the limited interviews and focus group discussions in this study.

7.5 Future directions and new research areas

The key findings synthesised with literature are drawn out to provide recommendations for future directions and new research areas concerning some actions the Federal government of Nigeria may adopt to halt the migration transformation caused by climate change induce-migration, resource contestation escalating to conflict:

7.5.1 Government approach to the climate change migration problem: The importance of policy review

Understanding the institutional context is paramount in solving the climate change migration problem that is rearing its ugly head in Nigeria. The 1978 legislation that allowed the Federal Government of Nigeria to redraw the borders between farms, livestock routes, and land areas to improve the mutual cohabitation of different groups in the country is not serving the purpose that it was drawn for (Rasak (2011; Nzeh, 2015). In response to the need to provide pastoralists with access to grazing grounds, encourage decentralisation as a means of integrating the population while improving production, and create social amenities in pastoral regions, the Grazing Reserve Act of 1964 was enacted (Ibrahim, 2012; Nzeh, 2015;

Awogbade, 1978). Also, the 1988 National Agricultural Policy aimed to increase local production by allocating a minimum of 10% of the national territory-9.8 million acres as grazing reserves to minimise the country's high reliance on foreign livestock markets of approximately 23%, mainly from the Sahel region, was enacted. Ibrahim (2012) stated that a similar implementation had kept functional grazing reserves at only 2.82%.

The 2011 draft allowed the National Grazing Route and Reserve Commission to allot pasture routes and reserves in the 36 states that make up Nigeria, including Abuja (the capita) has been delayed by differences and resistance between lawmakers and some regional governments in the country (Nzeh, 2015). Even though these laws were promulgated to move the country away from the perils of communal conflicts, instead, what we have is chaotic execution, and the will to move from legislation to action is lacking. The primary reason some migrant pastoralists take laws into their own hands and allow their cattle to stray unchecked into the lands of local farmers, eating and damaging crops, of which conflicts are the end result. The government's priorities regarding the farmer-pastoralist conflict are not up to scratch. This is because of the government failure to pass and implement reasonable laws to address the problems of grazing reserves that have been encroached on.

7.5.2 The need for effective collaboration between the government and non-governmental organisations (NGOs)

The effort to mitigate climate change in Nigeria and, most importantly, in the northern region is not entirely the sole responsibility of the government. Jumbe et al. (2008) stressed that non-governmental organisations (NGOs) should contribute/play an important role in climate change mitigation by collecting and disseminating information on issues relating to the impact of climate change in Nigeria. NGOs should conduct workshops and seminars on climate change to help bridge the gap regarding disseminating information about climate change, as the public lacks knowledge about it.

Critical roles by the government and non-governmental organisations (NGOs) regarding climate change adaptation strategies to improve the livelihood of the people in northern parts of Nigeria and the entire nation are of utmost importance. The involvement of NGOs in activities that support resilient agricultural infrastructure is crucial for effective climate change adaptation strategies. Such activities should entail the construction of large-scale water-saving irrigation systems and water storage ponds, building water harvesting schemes, and improving drainage systems to halt flooding. Expediting the construction of water collection points to ensure a sufficient water supply for agriculture and livestock (Onu and Ikehi, 2016).

Erudite studies on climate change impacts must advance knowledge on migration-sensitive climate change adaptation that lay emphasises on the following:

- The government in collaboration with non-governmental organisations (NGOs) must support adaptive decision-making and risk management through flexible and adaptive methods during periods of unavoidable events, including securing adaptation funds to enhance Nigeria's ability to respond to climate change, which is vital for meeting the country's immediate, medium, and long-term climate goals. (Oladipo 2019; Olajide 2023). Also, the government must assess and update its policies on adverse environmental effects on a regular basis.
- In collaboration with non-governmental organisations (NGOs), the government must focus on improving the understanding of climate change and address climate change problems at the local, regional, and national levels.
- The government in collaboration with non-governmental organisations (NGOs) must create an all-inclusive framework for assessing the effects of climate change. The development of conflict-sensitive adaptation strategies and assistance in resolving local problems caused by climate change should be implemented. With the assistance

of the NGOs, the Nigerian government should also actively participate in global climate change mitigation agenda plans and actions in collaboration with the United Nations Climate Change Department (Oladipo, 2019).

- The Nigerian government in collaboration with non-governmental organisations (NGOs) has to reconsider its climate change strategy by developing and employing decision-support resources and tools that make scientific knowledge valuable and accessible to decision-makers, whereby the focus is placed on the appropriate decision-making in specific locations or regions since the dynamics of human and environmental systems play out in diverse ways in different areas and decisions must be situation-specific (Oladipo 2019).
- The Nigerian government in collaboration with non-governmental organisations (NGOs) must transform the present environmental security regime by mobilising other highly vulnerable nations, mainly in Africa, where the most impacted countries remain on the periphery of global environmental security (Oladipo, 2019; DCCMEN, 2021). This may be accomplished by establishing problem-solving action platforms for humanising conflict-sensitive climate change impact assessment instead of commercialising the environmental security agenda. Providing localised solutions to problems resulting from the impacts of climate change will assist the government in developing mechanisms for adaptive intervention against socio-economic and demographic concerns.
- In collaboration with non-governmental organisations (NGOs), addressing the country's long-overdue economic diversification, industrialisation, and rural development would be vital to curbing climate change-related migration, leading to resource contestation and conflict in Nigeria. This would allow the state to actively engage youths through employment generation in both skilled and semiskilled

cadres, decreasing the pervasive emotions of neglect, deprivation, and dissatisfaction that fuel Nigeria's embers of violence (Muhammed, Ismaila and Bibi, 2015; Olajide, 2023).

Nigeria land use legislation must be addressed to resolve conflicts caused by climate change adverse effects and poor policy implementation. For example, according to Muhammed, Ismaila and Bibi (2015), the decline of pasture land because of farmers taking over of reserved areas for livestock production sets the stage for land use conflicts. Traditional institutions in Nigeria need to be strengthened by laws to help solve conflicts arising from resource contestation because of the adverse effects of climate change. This is where non-governmental organisations (NGOs) contribution is needed, since it is noted that NGOs have been playing a significant role in the formation and implementation of policies (Pandey, 2015). The incremental participation of non-governmental organisations in climate change negotiations is significant for two reasons: 1) they provide governments with expertise and information, and 2) their role is vital in bridging the gap in relation to global environmental governance where there is a lack of democracy and legitimacy. Establishing an efficient regulatory framework in collaboration with NGOs input will be an added advantage in preventing conflicts among groups.

Scientific work on climate change impacts must enhance our understanding of migration-sensitive climate change adaptation to complement government efforts. This way, future studies can use these metrics to improve migration-sensitive climate change adaptation programmes (IPCC, 1996; Smit et al., 2001). And this can be achieved in collaboration with the NGOs. Environmental NGOs have done much in their roles as providers of scientific information and expertise, as well as in seeking to bridge the democratic deficit in the international climate change negotiations. Academic research, particularly in developing countries such as Nigeria, must fully extend research on climate change-induced migration

discourse in line with Nigeria socio-economic, cultural, and other aspects. The study conducted in Nogoa, Makurdi, Benue state, Nigeria highlights the challenges in understanding the relationship between climate change and migration. It emphasises the need for a thorough investigation and deeper scrutiny to unravel the complexities of this issue.

To mitigate the consequences of climate change in Nigeria, it is necessary to focus on implementing targeted programs that reduce the vulnerability of individuals. Moreover, climate-mitigation related initiatives at the community level, such as the introduction of adaptive early warning systems and carbon storage programs, can bring diverse groups together, build trust and will go a long way in easing any pre-existing conflicts (Oladipo, 2019). Therefore, the government, with the assistance of NGOs, and by including the community, can adopt a bottom-up approaches often presented as a remedy to environmental governance problems caused by poorly aligned social institutions and fragmented ecosystems. With the bottom-up approaches, international organisations can be invited or encouraged to invest in or support innovative projects that can help mitigate the negative impacts of climate change. Worthwhile environmental adaptation projects hold the key to unlocking opportunities aimed at peacebuilding and conflict resolution. Furthermore, non-governmental organisations (NGOs) can play a vital role in fostering trust between local and national governments, especially where relationships have been strained in the past (Gaer, 1995).

7.5.3 The obligations of the Nigerian Government concerning climate change migration

Drought and desertification are not new things in the northern region of Nigeria, and in this context, climatic changes will continue to be a key factor contributing to the migration of people from the northern region to other sustainable parts of Nigeria; at the same time threatening the socio-economic growth of the country (Brekke and Tannehill, 1947; Van Weezel, 2016). In the northern part of Nigeria, profoundly affected by drought and increasing desertification, natural resources will continue to be exploited by the growing population.

There is a need for the government to develop sustainable solutions to the problems of drought and desertification. The response of the government to hazards has been a mere ad hoc reaction, in that there is a weak coordination of policies, which has led to many projects being duplicated and few implemented (Oladipo, 1993). The result is that people continue to suffer in this region. Some are forced to flee to other areas because of the impacts of climatic changes, which have brought long-lasting droughts and desertification to the region. The government lack of transparent and efficient policies to deal with the adverse effects of climate change in this area has led to increased drought and desertification. The government must deal with the adverse climatic conditions to curb climate change migration, which has led to resource contestation and conflicts in some parts, and curtailed the rising cases of insecurity and overcrowding in some towns in the middle belt and southern part of Nigeria.

Although there have been cases of bureaucratic stagnation, the situation should not be an obstacle to creating an institutional way of reducing the effects of desertification and drought. Morgan (1988) and Hubbard (1988) found that the implementation of administrative systems in Botswana and Gujarat, respectively, has effectively decreased the susceptibility to drought in these regions. Because of rampant corruption, wastefulness, and inefficiency in Nigeria, there is a high likelihood that the proposed administrative machinery will not function effectively. Ensuring that ideological and bureaucratic factors do not undermine the entire planning process requires diligent efforts.

Houghton et al., (2012) suggest that fashioning a national policy to address the increased severity of drought, desertification, and other adverse climatic conditions is inevitable. Emphasis should be placed on creating land policies that enhance the regeneration of vegetation cover, provide water catchment, ensure the rehabilitation of soil quality, maintain biological diversity and biomass stability. These factors, therefore, make it essential for the government of Nigeria to launch programmes such as dune stabilisation, reforestation,

limiting the use of fossil fuel products, felling of trees for cooking, and educating the communities on different methods of producing charcoal and the usage of alternative renewable sources of energy. The government should also aim to start programmes that aim to control and reduce grazing pressure that is affecting the soil, rehabilitate and conserve grasslands, provide animal health centres, improve the efficiency of production, and ensure that pastoralists and farmers within these regions access training and education programmes (Oladipo, 1993, p.34.; Oladipo, 1993, pp.235-261).

The government of Nigeria is also obligated to organise an integrated approach to river basin development, develop efficient and manageable irrigation schemes, design rationalised water points, and create small reservoirs and wells that are socially appropriate and acceptable to people. In accordance with Nanjira (1991) suggestion, the Nigerian government needs to provide assistance to the relevant authority/department in addressing the challenges of desertification and drought by implementing a well-designed plan to develop the affected regions. Policymakers must understand and implement traditional coping strategies to complement current development strategies. The ability of the government to mitigate the effects of desertification and drought is critical to reducing recent climate change-induced migration from the north to other parts of Nigeria. As a result, formulating a coherent, comprehensive, coordinated, systematic, sustainable, and information-intensive strategy that considers the adverse effects of climate change, people's perceptions and aspirations, and the fragile state of the ecosystems must be considered. These policies must be able to provide solutions to the problems of the environment and development, since they are all connected to climatic migration from the northern to the southern parts of Nigeria.

7.6 Conclusion

Based on previous research, two frames emerged: environmental migration as an opportunity or a challenge to the state (Schiller and Faist, 2009). This thesis's main finding is

that environmental migration is a challenge to Nigeria. Most of the present policies of the Nigerian government are aimed at lowering the vulnerabilities of the people in northern Nigeria rather than controlling environmental migration, which is causing conflict and, in the process, destabilising the country (Amelina and Faist, 2012). The research has also identified some gaps regarding policy formulation and framework. More research is required to draw a conclusive relationship between environmental changes and the drivers of migration (Bartram et al., 2014). The multidimensionality and complexity of environmental migration should be considered. This will not only be beneficial when formulating policy concerning environmental migrants, but the implication of climate change must also be studied in depth to allow evidence-based policy formulation applicable to solving the problem.

At the concluded 2021 Conference of the Parties to the United Nations Framework Convention on Climate Change, also known as COP26, organised in Glasgow, Scotland, the United Kingdom, from the 31st of October to the 12th of November 2021, attended by the Nigerian president, Muhammadu Buhari, in his speech directed to the heads of state of various countries in attendance and the world at large, he promised Nigeria is committed to net-zero carbons emissions by 2060 (DCCMEN, 2021). However, while the president's statement and commitments at the United Nations Climate Conference 2021, also known as COP26, have attracted commendation from different quarters, heaping praise on the president for his leadership role in pledging to restore desertification and drought-ravaged lands in the country. Some questions need to be asked about how realistic Nigeria's government commitment is to achieve this set objective because Nigeria's main source of income is still from fossil fuels. The country's economy is closely tied to oil and gas exports. Petroleum exports currently account for 86% of Nigeria's total export revenue. Oil and gas collectively provide 70% of Nigeria's revenue (Dunne, 2020). As a developing economy, Nigeria relies heavily on the production of non-renewable resources. The economy of Nigeria needs all the support it can

get, so it is highly doubtful that Nigeria will slow down its oil production. Realistically, it will be difficult for the country to become carbon neutral by 2060. The commitment of the Nigerian government is what the people and the outside world want to hear. Still, it requires strategic shifts from the status quo system and the collaboration of developed countries with the technical knowledge to make the commitment a reality.

As a result, this study contributes to the development of a research agenda for future climate migration studies. It revealed a critical need for a universally agreed-upon definition of 'climate-induced migrants' and 'climate-induced migration,' resource contestation and conflicts which remain ambiguous today. Lack of clarity only serves to obscure issues related to climate-induced migration, resource contestation and conflicts. There is an urgent need to strengthen the evidence base for climate-induced migration leading to resource contestation and conflicts by improving current global datasets to inform local, regional, and global policy development. Policies must be forward-thinking in curbing rapid and significant increases in global climate change-induced migration within and across national borders.

This chapter concludes the study by highlighting the efficacy of policies regarding future situations and how adverse climate change effects can be addressed. It discovered policies that build on individuals' adaptation strategies, including facilitating migration-that make the process of internal migration tranquil without resource contestation and conflict, are more future-resilient than policies that give the state more control over people's movements, such as relocation, with the interpretation that once an area is discovered to be affected by the adverse effects of climate change, the next line of action by the government is to move people to another area conducive for sustenance without considering the diversity issue. This leads to communal conflicts because of cultural clashes, which does nothing but exacerbate the situation. Also, the recommendation will help address the adverse effects of drought and desertification affecting Nigeria, especially in the northern part, which has turned out to add

another adverse effect: internal migration-resource contestation leading to conflict that is currently seriously rearing its ugly head in Nigeria.

Final Words

Admission of climate migrants is one way in which states should meet their obligations, pursued alongside support for coherent adaptation efforts that address resource contestation and conflict. Therefore, the way states perform their duties, either on their own or in coordination with other states, must achieve a balance between admission and support for local adaptation.

This thesis resides at the intersection of four subject areas to which it contributes to knowledge: climate change-induced migration used as adaptation, resource contestation and conflict. The argument is primarily about the meeting point of the four, offering an account of how climate change adverse effects-drought and desertification affect livelihood and the responsibility and obligations of states concerning the importance of good policy and adequate governance response. It broadens the conversation in socio-political philosophy on climate change-induced migration used as an adaptation, resource contestation and conflict, and brings to attention an overlooked topic, governance response. The discussion has also shed new light on risk and climate change, which changes how we comprehend the nature of responsibility and the obligations of states. It also provides an additional resource for understanding the role that outcome responsibility can play in other arguments on the duty of states concerning people affected by climate change. We are in a world where more people are moving as part of an unprecedented effort on the part of humanity to strive for a safer and better future (livelihood) due to climate change. Still, the growing evidence of links between climate change, migration, resource contestation and conflict are of concern. There is a need to develop rural areas (providing adequate infrastructure) to curb environmental migration, which is an adaptation opportunity (Escobar, 2003). There are no borders in a climate crisis,

greenhouse gases will sail right across the biggest most beautiful wall (Mckibben, 2021). It is time to start thinking about new and comprehensive answers to multifaceted crisis scenarios brought on or worsened by global climate change. Therefore, I would like to end with the uplifting words of Achim Steiner, executive director of the U.N. Environment Program in 2006 (Werz and Conley, 2012: p.1):

> "The question we must continuously ask ourselves in the face of scientific complexity and uncertainty concerning growing evidence of climate change, is at what point is precaution, common sense or prudent risk management demands action?"

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Appendices

Appendix A: My data collection observation diary records. (Adapted from Schatzman and Strauss, 1973).

Observation Site: Nogoa, **Location: Markurdi, Benue State, Nigeria.**	**Observation Date: 16/12/2020-22/12/2020** **Type of Observation: Non-participant**	**Start Time: 10:00 AM** **End time: 15:00 PM. The first day. The rest of the days vary.**
Description	**Reflexivity**	**Analysis**
Migrants' ways of life in the host community in a natural setting.	A running account of what happens. The complete picture of what is happening within the host community. In addition, a complete picture of what is happening to migrants within the host community must be developed. Conducting this observation was seamless. From my perspective, being known as a member of the community was advantageous. I could see and hear enough of the way migrants live in Nogoa, Makurdi, Benue State, Nigeria.	The onset of migration of individuals to the host community created a massive problem. During a visit to the study site pre, the interview process that was seriously impacted by the COVID-19 pandemic, while having a friendly conversation with a community member, my attention was drawn to a host community member's land, where a pastoralist cow strayed and was being dragged off (***see the Figure below).*** This has been a daily occurrence. In trying to make a living, so many migrants resulted in planting and rearing livestock, but there are limited means to do this. Why? I discovered that most lands to engage in this belong to the host community farmers. Some engage in labouring work with the assistance of some host communities' farmers who are willing to offer them jobs for a meagre amount.
Observation Site: Nogoa **Location: Makurdi, Benue State, Nigeria.**	**Observation Date: 11/01/2021-15/01/2021** **Type of Observation: Non-participant**	**Start Time: 10:00 AM** **End time: 14:36 PM.**
Description	**Reflexivity**	**Analysis**
Resource Contestation-Access to water and land for farming leads to conflict. And camps are not big enough to accommodate migrants.	Active observation is important to the observation process of witnessing in real life, setting the level of resource contestation in the study site. The volatile atmosphere did not enable me to cover entirely what I intended to. Notwithstanding my affiliation with this community, I am still always mindful of areas of observation. I discovered areas much more volatile	Natural and Government-provided resources were overwhelmed. I could witness the frustration of not being able to have access to resources- water land for cultivation, and where there is access, there is the issue of conflict between migrants and host community people. As stated earlier, concerning the pastoralists among migrants, on many occasions, their

	regarding resource contestation, but I could not go to observe for security reasons.	cattle were seen straying on the host community farmers' farmland, eating crops and damaging the farmland setting. I witnessed conflict related to these issues (group against group) on two or more occasions. Areas provided for the migrants are not enough for the large numbers of people in this community. I could see many wandering around the neighbourhood of Nogoa Markurdi Benue State, Nigeria, including open fields or areas belonging to the host community members. So many host community members are of the opinion that the migrants are forcefully gaining access to their wells that they used for farming, allowing their cattle access to their water, thereby contaminating it.
Observation Site: Nogoa **Location: Makurdi, Benue State, Nigeria.**	**Observation Date: 18/01/2021-22/01/2021** **Type of Observation: Non-participant**	**Start Time: 10:00 AM** **End time: 14:00 PM.**
Description	**Reflexivity**	**Analysis**
Expression of identity – integration and belonging	In hindsight, my ability to converse in the local language is paramount in getting more information concerning the issues of identity, integration and belonging. This helps a great deal. No other method offers quite the same kind of closeup lens on everyday life such as this. I was able to obtain very detailed data about the study subjects. Based on the changes in society due to migration and conceptualisations of observed processes, including social interaction, adaptation, conflicts, and their outcomes, questions of identity and belonging represent central and underlying, respectively, features of conceptualisations of integration, acculturation, and race relations which I found not to exist in the study site of Nogoa.	Belonging and self-identification can be heavily influenced by the perception of how the mainstream society perceives, receives, and refers to otherness. I discovered that most migrants find it difficult to associate, even if they want to, the host community members are not in a position to offer a handshake of friendship. From my observation, these migrants' sense of identity and belonging is impacted by factors such as their experiences and relationships, and the environment they are, that is hostile and not welcoming. Migrant's journey to find identity and belonging is a struggle in the community of Nogoa. Identity and belonging are central to the migrant's integration into the receiving area. Migrants are not comfortable in the receiving region. I noticed acts of not willing to mix/interact with the people of the

		host community, and this bogs down to the attitude of you are not welcome here by the people of the host community towards the migrants because of ethnicity and cultural differences.
Observation Site: Nogoa, **Location: Markurdi, Benue State, Nigeria.**	**Observation Date: 25/01/2021-29/01/2021** **Type of Observation: Non-participant**	**Start Time: 11:29 AM** **End time: 14:32 PM.**
Description	**Reflexivity**	**Analysis**
Vulnerability	This observation method offers me a close-up look at everyday life in this community. This enabled me to obtain detailed data about how vulnerable women and children are in this community. Elements of people's experiences of which I was not previously aware of were seen. I witnessed the struggle that vulnerable people (migrants-women and children) go through. Understanding that historical, political, cultural, institutional and natural resource processes shape people's social and environmental conditions is important. These processes produce a range of immediate unsafe conditions, such as living in dangerous locations or poor housing, ill health, political tensions or a lack of local institutions or preparedness measures.	The conditions determined by physical, social, economic and environmental factors or processes that increase the susceptibility of migrants concerning the situations they find themselves in need to be appropriately managed to their advantage. It dawns on me the need to protect the most vulnerable in the receiving area by the government, especially the children and the women in camps. Some left the camps, and you will find them all alone in this community, begging for alms in areas where they can be abused. This indicates that the physical environment where people lack access to resources to sustain livelihoods influences vulnerability.
Observation Site: Nogoa, **Location: Markurdi, Benue State, Nigeria.**	**Observation Date: 01/02/2021-04/02/2021** **Type of Observation: Non-participant**	**Start Time: 10:00 AM** **End time: 16/02/2021**
Description	**Reflexivity**	**Analysis**
Sanitation	There is an issue in which I could not gather information the way I wanted regarding the sanitation of the environment in which these migrants found themselves, provided by the government the way I wanted to. I gained access to that of the men, but because of gender, I am not allowed to areas of the women. Notwithstanding, what I saw is enough to analyse on.	Settlements for migrants) are often overcrowded with limited sanitation facilities. Diseases are known to spread quickly, especially malaria. Lack of access to water and knowledge of proper hygiene practices like faecal waste handling and appropriate use of toilets. It is not adequately managed. The environment is muddy without adequate officials attending to these people. It is not unusual to see

		tuberculosis, cholera, and malaria rife at the camp, and all these are because of the compromised environment, no adequate facilities, and there is overcrowding. People live in an enclosed environment.
Observation Site: Nogoa **Location: Benue, Nigeria**	**Observation Date: 08/02/21-11/02/2021** **Type of Observation: Non-participant**	**Start Time: 10:45 AM** **End time: 14: PM.**
Description	**Reflexivity**	**Analysis**
Adequate help from the government is lacking.	On reflection, I gained first-hand knowledge concerning what the government is doing regarding the plight of these migrants from the sending to the receiving area. Even though the government, one way or the other, make it difficult for the outside world to see. For example, when they found out that a non-governmental organisation (NGO)-Angel Support Foundation- was interested in the plight of these people, that was when they tried to put up front that they were in control. These would have prevented me from gaining first-hand knowledge, but I was able to circumvent this by being a Nigerian. This would have been difficult for an outsider.	Security concerns, poor infrastructure, and a lack of economic opportunities are the significant challenges that affect migrants in receiving areas. Even though the Nigerian government has tried to address these people's plights, there are still challenges of overcrowding, poor sanitation, and insecurity in this community of Nogoa, Makurdi, Benue State, Nigeria. Adequate help is lacking. The government is dragging its feet in seeing to the plight of these people from the sending region-the northern part of the country. The facilities provided are not adequate; it is conspicuously visible for everyone to see.
Observation Site: Zoom **Location: Online**	**Observation Date: 08/03/21-22/03/2021** **Type of Observation: Interview/discussion**	**Start Time: 10:00 AM** **End time: 16: 00: PM.**
Description	**Reflexivity**	**Analysis**
(Interview and Focus Group discussion)	I appreciate the way most answers were answered and discussed. It helps in gathering so much helpful information that supports the analysis and results.	The men and women in charge of the administration of the community of Nogoa, Ministry of Environment and Local Government Officials-experts and host community leaders-key informants smoothen the whole interview and discussion process.
Observation Site: Nogoa **Location: Benue, Nigeria**	**Observation Date: 08/03/21-22/03/2021** **Type of Observation: Interview/discussion**	**Start Time: 10:00 AM** **End time: 16:00 PM.**
Description	**Reflexivity**	**Analysis**

Experts' willingness to supply me with valuable information about migrants from the profiling data of the Ministry	I obtained much information about migrants in the experts' jurisdiction, especially valuable demographic characteristics. This helps in knowing the areas migrants migrated from to Nogoa-the study site, Makurdi Benue State, Nigeria.	According to experts, the onset of migration of individuals to the host community created a massive problem, and registering people was an arduous task that the government did not have a plan for. Government resources were overwhelmed.
Observation Site: Nogoa **Location: Benue, Nigeria**	**Observation Date: 08/03/21-22/03/2021** **Type of Observation: Interview/discussion**	**Start Time: 10:00 AM** **End time: 16:00 PM.**
Description	**Reflexivity**	**Analysis**
The experts' awareness contributed immensely to the gathering of appropriate information.	I discovered that most experts interviewed understand the phenomenon climate change and its adverse effects ravaging the northern part of Nigeria. The participants showed a willingness to participate in the interviews and focus group discussions.	A running account of what happens in the sending region that led to migrants embarking on the journey to the host community (Resource Depletion to resource contestation and conflict). Details on the setting and communicative features of migrants. In addition, it provides a complete picture of what is happening within the host community.
Observation Site: Nogoa **Location: Benue, Nigeria**	**Observation Date: 08/03/21-22/03/2021** **Type of Observation: Interview/discussion**	**Start Time: 10:00 AM** **End time: 16:00 PM.**
Description	**Reflexivity**	**Analysis**
Analysis and results writeup add colour to the thesis.	Developing trends and hypotheses comprising guesses and intuitions helps conclude the analysis of data collected using excerpts.	I was able to avoid embellishment and maintain the integrity of the data collected. The data gathered offers perspective, adds context, and inspires thoughtful discussion beyond the study.
SENSE OF FULFILMENT	**REFLEXIVITY**	**ANALYSIS**
Even though COVID-19 made it challenging to interview/access a particular group (migrants), I was satisfied conducting the interviews and focus group discussions with experts and key informants, their input aided in improving my understanding of what is happening in the sending region northern Nigeria (the adverse effects of	My reflection and how I felt after conducting the interviews and discussions was that of inner satisfaction grounded in the fact that I have been able to gather key points together, enabling me to deduce the reason behind people's migration from the sending region to the destination because of the adverse effect of climate change that brought about drought and desertification in the sending region.	Conducting the first interview sharpened my interview approach for the consequent interviews and focus group discussions after learning about the migration process of migrants from the sending region to the host community, day-to-day activities of migrants in Nogoa and resource contestation leading to conflicts from the Ministry of Environment and Local Government Officials-experts and host community leaders-key informants.

climate change-drought and desertification and resource contestation and conflict in Nogoa Makurdi Benue State, Nigeria.		

The researcher having a chat with a member of the community during observation. And an eye account of two pastoralists dragging one of their stray cows from a host community member's land.

Appendix B: Summary of research findings on the interconnectivity between climate change, livelihoods, and migration. (Source: McLeman, 2016).

Finding	Characteristics/implications	Strength* of evidence
Migration is a key component of sustainable livelihoods and household adaptive capacity in low- and middle-income countries.	Migration is one of many possible ways in which households adapt to and cope with climatic and non-climatic risks/ uncertainty.	Broad base of evidence from a wide range of empirical studies in multiple regions
	In countries with weak institutions, migration may be the only form of adaptation available.	
	Households that lack migration options are inherently more vulnerable and less adaptable to the impacts of climatic variability and change.	
Reliance on migration to meet rural livelihood needs is growing	Growing reliance on migration is a common trend across less developed countries.	Broad base of evidence from a wide range of empirical studies in multiple regions
	Seasonal migration is common in regions with highly seasonal climates.	
	Migration for longer durations is becoming increasingly common.	
	Most migrants are young adults.	
Most climate-related migration takes place across short distances within countries or across contiguous borders.	Local migration has relatively low costs.	Broad base of evidence from a wide range of empirical studies in multiple regions
	The destination may be urban or rural, depending on wage-earning opportunities.	
Households that receive remittances from migrants have greater long-term social and economic prospects.	Remittances from international migrants are typically of greater value than remittances received from internal migrants.	Broad base of evidence from a wide range of empirical studies in multiple regions
	Within communities, remittances increase socioeconomic inequality.	
	Remittances can help improve prospects for disaster recovery and, to some extent, for preparedness and adaptation, but the overall contribution to building climate resiliency is uncertain.	
Rural to urban migration rates are high and growing.	Rural to urban migration rates are growing especially rapidly in Sub-Saharan Africa, although that region is less urbanised than others.	Conclusive statistical evidence

Households that participate in rural to urban resource sharing networks have greater food security.	Such networks are likely to grow in importance as the impacts of climate change on food production systems strengthen. Households lacking access to such networks are more vulnerable.	Strong empirical evidence from Sub-Saharan Africa and South America.
Migration is a key means of recovering from extreme weather events, including floods and droughts.	After an extreme event, households send young adults to seek wage labour opportunities to rebuild lost/damaged housing and livelihood assets. The duration and destination of migration vary by context.	Strong empirical evidence from Central America, East Africa, and South and Southeast Asia.
People in remote areas have worse migration opportunities and adaptation prospects.	Remoteness and isolation are important factors in the vulnerability of mountain populations and some dryland areas. People living in areas with good access to roads, markets, and social infrastructure have a greater range of adaptation options and potential migration destinations.	Strong empirical evidence from dryland areas of Africa, the Andes, and Nepal.
Gender dimensions can change over time, but have important implications for climate migration.	Where only men migrate, women, children, people with disabilities, and the elderly left behind are at greater risk of food insecurity and personal safety. Land degradation and climatic variability can force higher levels of gendered migration or longer-duration migration. Gender dimensions can change over time.	Case study evidence from Bangladesh, Nepal, and Pakistan more research is needed in other countries and regions.
Empirical research shows persuasively that climate resilience must be built urgently given the known risks, but there remains uncertainty about which strategies hold the greatest promise and how to implement them.	The impacts of extreme heat, dryness, and variability in precipitation on regional migration patterns will grow through 2050, but can be moderated by sound development strategies. Climate impacts on food systems, water resources, and livelihoods accelerate in a nonlinear fashion after 2050, as will the risks of large-scale displacements and distress migration.	Climate model evidence is increasingly strong. Models of future crop yields vary but decline for several crops. Systems understandings of general climate–migration. Dynamics are increasingly strong, with strong agreement across the research literature.

	Business, as usual, will fall far short of meeting future adaptation needs.	Further empirical research on resilience-building is needed across most regions.

Appendix C: Favourable ethical opinion letter for the research

Keele University FNS Non-psychology Faculty Research Ethics Committee

naturalsciences.ethics@keele.ac.uk

8th December 2020

Dear Richard,

Project Title:	**Migration as an adaptation strategy to climate change - the northern Nigeria context**
REC Project Reference:	NS-200081
Type of Application	Main application - response to further information request (4)

Keele University's Faculty of Natural Sciences Non-Psychology Research Ethics Committee reviewed the above project application.

Favourable Ethical opinion
The members of the Committee gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

Conditions of the favourable opinion
The favourable opinion is subject to the following conditions being met prior to the start of the project.

1.	Thank you for resubmitting the relevant documents. Section 5.9 still contains some confusing processes, and this is then reflected in the information sheet. However, I am willing to accept the application (favourable ethical opinion) at this stage on the condition that the following changes are made to the study documents before progressing with the research. **Please confirm your understanding and acceptance of these conditions, and no further resubmission will be required. Please do this by sending an email to naturalsciences.ethics@keele.ac.uk** **<u>Condition 1</u>** Remove the following sentences from both the application form (section 5.9) and the information sheet: "Also, at the interview, all interviewees will be asked whether they want to see any quotes before they are published in order to agree to their use within the 90-days

	window. The interviewee will be made aware of the possibility to use such quotes after the interview has taken place." These sentences only serve to confuse now that you are providing participants with the opportunity to review the entire transcript. So, in this final version, you would not be seeking approval, within 90 days, for individual quotes (see previous feedback on why this might be problematic) but instead offering participants the opportunity to review their whole transcript within 90 days and let you know of any part they would like you to exclude.
2.	**<u>Condition 2</u>** If participants do request to see the full transcript, please ensure that they are given a suitable period of time to review their transcript and reflect on it, before contacting you. Ninety days from the time of the interview is suitable, provided you supply participants with the transcript soon after the interview has taken place (say within 30 days, giving them at least 60 days to review).

Reporting requirements
The University's standard operating procedures give detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Notifying issues which may have an impact upon the ethical opinion of the study
- Progress reports (where required)
- Notifying the end of the study

Approved documents
The documents reviewed and approved are:

Document	**Version**	**Date**
Application form	1	08/12/20
Consent form	3	08/12/20
Information sheet	2	08/12/20

Yours sincerely,

Mark Lucherini

Dr Mark Lucherini
Lead Reviewer

Appendix D: EXPERT (Ministry of Environment Officials Interview).

EXPERT (Ministry of Environment Officials Interview).

SECTION A: DEMOGRAPHICS

Name…….

Gender:

a. Male b. Female

Occupation…….

SECTION A: INTERVIEW

1. What are the causes, effects and patterns of internal migration that you are witnessing in Nogoa?

2. What did migrants hope to gain from moving to where they are now?

3. What is the relationship between migrants, pastoralists and farmers in parts? Do you think a conflict exists between them?

4. What are the perceived threats recognised as causes and effects of the prevalent violent conflicts between migrants and the host communities?

4b. What would be the impacts of such a conflict?

5. What institutional, political or other measures in terms of policy guidelines taken thus far to halt the trend and prevent reoccurrence?

6. What did you observe regarding the presence of migrants and pastoralists in the host community?

7. What are your viewpoints regarding rural-urban migration?

8. Does rural-urban migration contribute to rising insecurity in the country? How?

9. Does resource scarcity and loss of rural livelihood contribute to the rising insecurity? How?

10. Can you attribute the massive influx of people to the host community to the adverse effects of climate change-drought and desertification? And what is your perspective regarding this statement? Do you agree? Why?

11. The issue of climate change is troubling people in the destination region. How is the government performing on this? And what has the government done/is doing to curb this?

13. What can you say about the migrant situation and their experience, including what they do to sustain livelihoods where they are now, and to what extent is the government helping?

14. Shelter of migrants in Nogoa is another issue of concern; what can you say about the provision of shelter? Please explain.

15. Safety and security are paramount because they ensure the well-being of individuals and the protection of assets. A lapse in either can lead to significant harm, loss, or damage. What can you say about the safety and security of people, both migrants and host community members?

SECTION B: GOVERNMENT RESPONSES

17. What are the policies and plans in place towards managing climate change-induced migration problems?

18. What is your view regarding how beneficial the government's unification and policy coordination will be concerning mitigating the adverse effects of climate change, causing internal migration, instead of splitting the task between the local government and the Federal Ministry of Environment?

19. What are the government's plans to assess conflicts in communities migrated to and solve them?

20. Can you shed light on the challenges of climate change-induced migration policy responses governance structure affecting the smooth application of sustainable development programmes?

21. Concerning climate change mitigation and adaptation approaches: especially (drought and desertification), what can you say the government is doing to tackle it in the sending region based on what your department has investigated and reported?

22. How do you think climate change induced-migration can be handled to offer opportunities to vulnerable people?

23. What can the government do to build good coexistence among communities and offer opportunities?

(B). And do you think resettlement will play a significant part in addressing the problem and offering opportunities to people?

Appendix E: EXPERT (Ministry of Local Government Officials Interview).

EXPERT (Ministry of Local Government Officials Interview).

SECTION A: DEMOGRAPHICS

Name…….

Gender:

a. Male b. Female

Occupation…….

SECTION A: INTERVIEW

1. What are the causes, effects and patterns of internal migration that you are witnessing in Nogoa?

2. What did migrants hope to gain from moving to where they are now?

3. What is the relationship between migrants, pastoralists and farmers in parts? Do you think a conflict exists between them?

4. What are the perceived threats recognised as causes and effects of the prevalent violent conflicts between migrants and the host communities?

4b. What would be the impacts of such a conflict?

5. What institutional, political or other measures in terms of policy guidelines taken thus far to halt the trend and prevent reoccurrence?

6. What did you observe regarding the presence of migrants and pastoralists in the host community?

7. What are your viewpoints regarding rural-urban migration?

8. Does rural-urban migration contribute to rising insecurity in the country? How?

9. Does resource scarcity and loss of rural livelihood contribute to the rising conflict and insecurity? How?

10. Can you attribute a massive influx of people to the host community to climate change? What is your perspective regarding this statement? Do you agree? Why?

11. What is your view regarding how beneficial the government's unification and policy coordination will be concerning mitigating the adverse effects of climate change, causing internal migration, instead of splitting the task between the local government and the Federal Ministry of Environment?

12. What are the government plans to manage the established cause of migration to Nogoa?

13. What approaches can be adopted to curb the established problem in the sending region based on what your department has investigated and reported?

14. Are there any vulnerability issues concerning these migrants, and if there are, what are the vulnerability issues that your office is aware of?

15. Shelter of migrants in Nogoa is another issue of concern; what can you say about the provision of shelter? Are they settled and comfortable with what was provided? Please explain.

16. Safety and security are paramount because they ensure the well-being of individuals and the protection of assets. A lapse in either can lead to significant harm, loss, or damage. What can you say about the safety and security of people, both migrants and host community members?

17. What can you say about the migrant situation in your jurisdiction and their experience of work-life pressures where they are?

Appendix F: KEY INFORMANT (Host Community Leaders Interview).

KEY INFORMANT (Host Community leaders Interview).

1. **Name:** ……

2. **Gender**

a. Male b. Female

3. **Occupation:**

a. Village Head b. Village Chief

SECTION B: Interview

1. What are your views about the presence of migrants and nomadic pastoralists in your community?

2. What do you think is the root cause of the sudden presence of migrants and nomadic pastoralists in your community?

3. What are your views in relation to the sharing of resources, such as land and water, in your community?

4. How would you describe the relationships between migrants, nomadic pastoralists and community members, especially farmers?

5. What efforts have been made at the community leadership level to address any possible problems with the migrants and pastoralists?

6. What do you think will stop the problems migrants, pastoralists, and the host community members could be having with one another?

7. What do you think is happening in Nogoa that you have not seen or witnessed before, thinking back to five years before now?

Appendix G: FOCUS GROUP (Ministry of Environment Officials Questions).

FOCUS GROUP (Ministry of Environment Officials Questions).

Reason for moving

1. What are the biggest challenges that people in the village where migrants migrated from face?

2. What were the reasons for moving to where they are now?

3. What did they hope to gain from moving to where they are now?

4. How would you explain the changes in the environment that influenced their move to where they are now?

5. How do you compare these reasons regarding the greatest threats to migrant's livelihoods? How do these reasons relate to the massive migration from where they came from?

Vulnerability context:

6. A teaser! How do you describe drought and desertification from your perspective?

7. Are there any vulnerability issues concerning these migrants, and if there are, what are the vulnerability issues that your office is aware of?

8. What can you say about the people in your jurisdiction who migrated from the sending region concerning their vulnerability to water scarcity where they came from based on your department's findings?

9. What can you say about the people in your jurisdiction who migrated from the sending region concerning their vulnerability to agriculture-crop cultivation and livestock production where they came from based on your department's findings?

10. Think back; in your jurisdiction, how have migrant's life changed, and what has been the cause of the change?

11. Think back; what stresses and 'shocks' have their villages experienced?

11b. How do they cope with the changes? Be it at sending, transit and where they are now.

12. What is your assessment of the government's performance in helping to address the situation and maintain good living conditions for the migrants?

Appendix H: FOCUS GROUP (Local Government Officials Questions).

FOCUS GROUP (Local Government Officials Questions).

Reason for moving

1. How would you describe the host community that you administered?

2. What is life like in this community?

3. How did households generate income?

4. What are the biggest challenges facing the host community?

5. What do you think is the greatest threat to the sustainability of livelihood in this community?

6. What do you think is the cause of this threat to the sustainability of livelihood in this village?

7. What impacts do migrants have on the host community?

8. What places do migrants live?

8b. What attracts them to this particular place, Nogoa? And do they have any choice concerning where they settle?

c. If they do, what do you think are their considerations?

9. What jobs do they do in the host community?

10. How would you describe the relationships between migrants, nomadic farmers and community members, especially farmers?

11. How do the presence of migrants and nomadic pastoral farmers affect resources and security in the host community?

12. How would you describe the government's performance in helping address the sudden migration into the host community village?

13. What are the government's plans to seek solutions to what is causing conflict in the communities migrated to, including assessment?

Appendix I: Information sheet for interviewees

INFORMATION SHEET

Study Title: **Migration as an adaptation strategy to climate change - the northern Nigeria context**

Invitation

You are invited to consider participating in the research study Migration as an adaptation strategy to climate change - the northern Nigeria context. **RICHARD AKINSANMI TIWO is undertaking this project.**

Before you decide whether or not you wish to take part, it is important for you to understand why this research is being done and what it will involve. Please take time to read this information sheet carefully and discuss it with friends and relatives if you wish. Ask me if there is anything that is unclear or if you would like more information. Also, with this information sheet is a consent form that will be emailed to you to sign. I implore you to read the consent form thoroughly. Furthermore, once you agree to participate in the interview, I would be grateful if you could please return a copy of the consent form duly signed.

Aims of the Research

This study intends to find out how migration is used as an adaptation strategy to Climate Change by individuals, especially from northern Nigeria, who are consequently moving to other parts of Nigeria, resulting in resource competition and conflict.

Why have I been invited?

You have been invited to participate in the study due to your involvement in shaping the environment, interest in shaping the management of migration/displaced people at the local level, and being the custodian of culture in Nigeria.

Do I have to take part?

If you agree to take part in the research, you will participate in a phone/online-zoom interview that will last for up to one hour. You are free to decide whether you wish to take part or not. If you do decide to take part, you will be asked to read the information sheet and sign a consent form. You are free to withdraw from the interview at any time and without giving reasons. You are also free to choose whether or not to answer any of the questions. If you decide to withdraw from the interview, any data that has been collected will be destroyed and not used for the research.

What will happen if I take part?

You will take part in a phone/online-zoom interview that will be audio-recorded, with your permission. If you do not want the interview to be recorded, the interview will be conducted using written notes. You can bring someone with you if you would prefer to undertake the

interview with another person present. You will be invited to talk about migration in Nigeria and how Climate Change is shaping this.

What are the benefits (if any) of taking part?
You will be able to offer your opinions on migration-induced Climate Change in Nigeria and contribute to broader research on the key issues/challenges of relevance, such as resource contestation and conflict, as well as how the process can be managed.

What are the risks (if any) of taking part?
Your confidentiality is of the utmost importance. All interviews will be conducted using phone/online-zoom with Mr Richard Tiwo. The data provided will be kept strictly confidential and not shared or distributed with/to anyone except my supervisor. There may be potentially sensitive questions and/or themes that emerge. Please only answer questions you feel comfortable answering and let the researcher know if you would like to pause or end the interview at any point. All quotes will be anonymised. However, it is important to note that your generic job title may be used, and this could lead to you being identified. You have 90-days from the date of the interview to contact the researcher by email to withdraw your data from the study. At the interview, you will be asked whether you want to see any quotes before they are published for you to agree to their use within the 90-days window. You will be made aware of the possibility of using such quotes after the interview has taken place**.** And you have 90-days from the date of the interview to contact the researcher by email to withdraw yourself and data from the study; otherwise, it will be assumed that you agree to participate. Also, at the interview, you will be explained to that, within those 90 days, you can ask to see the full transcript of the interview before any parts of it are selected for publication. If you decide to see the transcript, you will be provided with the transcript soon after the interview has taken place (within 30 days, and giving at least 60 days to review and reflect on it before contacting me). If, after reading the transcript, you want to veto any sections or withdraw from the research, you will be able to do so.
Additionally, if you talk about specific experiences, and agree to these being recorded and used in the thesis, others may be able to identify you from these experiences. Please consider these issues about the limits of anonymisation carefully before agreeing to take part.

Confidentiality: How will information about me be used?
The interview material will be transcribed into written form. All personal information will be changed/removed so that it is not possible to identify any person. The data will be used for my doctoral thesis and potentially for subsequent publications.

Who will have access to information about me?
The records from this study will be kept as confidential as possible. Your information will only be accessed by the primary researchers, Richard Tiwo and Dr Alexandre Nobajas (My Supervisor). Your data will be anonymised – your name will not be used in any reports or publications resulting from the study. All digital files, transcripts and summaries will be given codes and stored separately from any names or other direct identification of participants. Any hard copies of research information will be kept in locked files at all times. All other interview materials will be stored on a password-protected computer. The written record of this particular interview will be transcribed, and all personal information will be removed or changed. The data will only be used for this project, future research projects, and linked publications. You may have access to the transcript of the interview if you wish. Be rest assured that your data will be protected and handled efficiently. Dr Alexandre Nobajas and I commit to keeping your personal information secure and respect the confidentiality of the

personal information that you provide to us. We will make sure that there are adequate safeguards in place to secure your information.

Furthermore, you can withdraw permission to use data from the interview within thirty days after the interview, in which case the material will be deleted. Excluding this, data collected/used will be deleted after ten years, in line with the university regulations. The information will not be distributed to any 3rd parties.

However, I have to work within the confines of current legislation over such matters as privacy and confidentiality, data protection and human rights, and offers of confidentiality may sometimes be overridden by law. For example, in circumstances whereby I am concerned over any actual or potential harm to yourself or others, I must pass this information to the relevant authorities.

Who is funding and organising the research?
Student Finance England.

What if there is a problem?

Immediately after the interview, you will be emailed a debriefing letter that I implore you to read thoroughly. If you have a concern about any aspect of this study, you may wish to contact/speak to the researcher(s), who will do their best to answer your questions. You should contact **Richard Akinsanmi TIWO. Address:** Keele University, Staffordshire, UK, ST5 5BG **via e-mail address:** r.tiwo@keele.ac.uk. Alternatively, if you do not wish to contact the researcher(s), you may contact **Dr Alexandre NOBAJAS. Address:** Keele University, Staffordshire, UK, ST5 5BG. **E-mail address:** a.nobajas@keele.ac.uk.

If you remain unhappy about the research and/or wish to raise a complaint about any aspect of the way that you have been approached or treated during the course of the study, please write to Dr Sandra Woolley, who is the University's contact for complaints regarding research at the following address: -

Dr Sandra Woolley
Chair of the FNS (non-Psy) Ethics Committee
Keele University
ST5 5NH
E-mail: s.i.woolley@keele.ac.uk
Tel: 01782 733259

My research project will contribute towards the award of a PhD degree. I am very grateful that you have agreed to participate by completing the interview.

Appendix J: Consent form for interviewees

CONSENT FORM

Title of Project: Migration as an adaptation strategy to climate change - the northern Nigeria context.

Name and contact details of Principal Investigator: RICHARD TIWO. **Address:** *Keele University, Staffordshire, UK, ST5 5BG.* **Telephone***: 01782 733615.* **e-mail***:* r.tiwo@keele.ac.uk

	Please tick these boxes if you agree with statement
1. I confirm I am 18+ in age.	☐
2. I confirm that I have read and understood the information sheet dated …… (version Number…) and have had the opportunity to ask question	☐
3. I understand that my participation is voluntary and that I am free to withdraw at any time without giving a reason and without there being any negative consequences. In addition, should I wish not to answer any particular question or questions, I am free to decline.	☐
4. I understand that I can withdraw permission to use data from my interview within 30 days after the interview, in which case the material will be deleted.	☐
5. I understand that my words may be quoted directly without having my name published. And I understand that there is the possibility to use such quotes after the interview has taken place.	☐
6. I understand that although my responses will be anonymised, my contribution may still be identified by some members of the intended audience	☐
7. I agree to have my generic job title –e.g. senior consultant- published	☐
8. I agree to take part in this study.	☐
9. I agree with the information I provided that it should be written in a PhD thesis and academic journals.	☐
10. I agree to allow the dataset collected to be used for this project, future research projects, and linked publications.	☐
11. I understand that my contribution will be deleted after a maximum of 10 years from the date of this interview	☐

12. I agree to be contacted about possible participation in a future research project. ☐

_____	_____	_____
Name of participant	Date	Signature
RICHARD TIWO	_____	_____
Researcher	Date	Signature

My research project will contribute towards the award of a PhD degree. I am very grateful that you have agreed to participate by completing the interview.

Appendix K: Debriefing Note

Participant debriefing note

Thank you for taking part in my study. Your contribution to knowledge is vital. It is important to talk to you about your experiences and opinions regarding climate change and its effect on migration.

This study aimed to gather information about migration as an adaptation strategy to Migration as an adaptation strategy to climate change - the northern Nigeria context. Also, to explore the links between climate change and issues over natural resource contestation and conflict in Nigeria, the challenges relating to resource scarcity, individual movement, and its implication on peace. I hope that this study will provide a more detailed understanding of Climate Change induced migration in Nigeria; how this is being managed, and the implications of such movement on sending and receiving areas.

The information you give me will be held anonymously and confidential. Although, I want you to be aware that anonymisation may only have limited effectiveness. However, to protect your privacy, quotations used in this study will be ascribed using study codes. Also, I want you to be aware of the possibility to use quotes after the interview has taken place.

If you think of any questions you would like to ask after the interview, or if you want to withdraw your data from my study, this can only be done within sixty days after the interview discussion, in which case the material will be deleted. Furthermore, this can be done by contacting me within two weeks after the interview through my phone number 00447973304165, 00234909280388, my email address r.tiwo@keele.ac.uk, Excluding this, data collected/used will be deleted after five years, in line with the Keele University regulations.

Kind regards,
Richard Tiwo. (Researcher).

Appendix L: Information sheet and Checklist for gatekeeper (Experts)

INFORMATION SHEET AND CHECKLIST FOR GATEKEEPER (EXPERTS)

Dear Sir/Madam,

Officials within your jurisdiction are invited to participate in an interview on (Climate-induced migration in Nigeria). Your support is important for the success of this intervention, and I want to thank you in advance for your help. Before you make any decisions, it is important for you to understand why the project is taking place and what it involves. Please have a look at the information below and feel free to raise any questions you may have about the research.

I will be very grateful if you can make officials in your jurisdiction aware of the research by distributing the information sheet and consent form provided. Also, I would like to stress that taking part is voluntary, so they should not be pressured into participating. The information sheet has my contact details.

This study is being conducted by me, the researcher Richard Tiwo.

What is the project about?

The project is about the issue of climate change and its effects leading to out-migration from the northern to other parts of Nigeria, causing resource contestation and conflicts among groups.

What does the study involve?

The interview will take place through phone/online. Your assistance will be needed in circulating an information sheet and consent form to officials who may be interested in taking part. Any official who is interested in participating in the interview will have to confirm this willingness with me directly through my contact details (at the end of this information sheet).

Does the official have to take part by coercion?

No. It is up to the official to give his or her consent willingly. The official contribution is very important to the success of this research without being coerced in any way. It is entirely up to participants to get in touch with me. Furthermore, if any official agrees to participate in the interview, the official may choose not to participate, or stop participating at any time without penalty.

Are there any benefits to being part of the research project?

The participant will be able to offer his or her opinions on migration-induced Climate Change in Nigeria, especially issues about the northern part, and to contribute to a broader piece of research on the key issues/challenges of relevance, as well as how the process can be managed.

What are the possible risks of taking part in this study?

The official confidentiality is of the utmost importance. All interviews will be conducted by phone/online with me, Mr Richard Tiwo. The data provided will be kept strictly confidential and not shared or distributed with or to anyone except my supervisor, Dr Alexandre Nobajas. There may be potentially sensitive questions and/or themes that emerge. All quotes will be anonymised.

What about confidentiality?

All records of this project will be kept private and anonymous. My supervisor and I, Dr Alexandre Nobajas, will be the only individuals with access to the information collected. Electronic data will be password-protected, and hard copy data (i.e., questionnaires) will be in locked storage. A digital recorder will only be used during interviews if participants consent to this. The results of this research may be presented at conferences and/or published in professional journals. Participants' generic, such as, e.g., ministry of environment official will be used or published, unless it is not agreed upon. Personal data such as (i.e., names, addresses, and contact details) of all participants will be kept confidential and are only known to me, the principal investigator and my supervisor, Dr Alexandre Nobajas. Quotations used in this study will be ascribed to respondents using the study code. The information sheet and consent forms also inform participants that their data will remain confidential.

***Please, I want you to note and understand this:** it is vital that there must be no elements of coercion on your part. Your role is simply to distribute the information and consent form. I would appreciate it if interested participants were advised/directed to hold on to the consent form for collection by me, the researcher directly, and not the gatekeeper.

What will happen next?

I would appreciate it if my contact details were circulated in the Ministry of Environment Office. The researcher, Richard Tiwo, will arrange-organise an appropriate time and place for the sessions. This may involve working around a particular practice. I will accommodate you as best as possible. The official will be provided with details of the project via a consent form before they make a final decision about whether or not to take part.

Who can I contact for further information about this study?

Please feel free to contact the researcher to discuss this study in further detail:

Researcher: Richard Tiwo, **Email:** r.tiwo@keele.ac.uk

Phone number: 00447973304165. 002349092803888

Gatekeeper Role Checklist

This is a checklist for those acting as a gatekeeper and highlights important considerations when supporting research.

Please emphasise the voluntary nature of participation in the research.

Please make sure you do not attempt to persuade or encourage participants to take part at any point. And no elements of coercion on your part. Your role is simply to distribute the information sheet and consent form. I would appreciate it if the interested participant is advised/directed to hold on to the consent form for collection by me, the researcher directly, and not the gatekeeper on an arranged date.

Please explain the importance of taking part in the research, and please ensure/explain to the participant the importance of reading the information sheet and consent form before making up their mind to participate.

If you are unsure about any aspect of the research, please contact the researcher [Richard Tiwo].

If a participant who has read the information sheet and consent form asks you more about the research, please advise that you have no part in the design or content of the research and refer them to the researcher [Richard Tiwo].

Please highlight the contact details on the information sheet for participants.

I, the researcher [Richard Tiwo], will be virtually present and provide instructions when data collection takes place.

The participant should be left alone to agree to be interviewed in their own time and should not feel pressured.

Name of researcher	Designation	Contact Email	Telephone Number
Richard Tiwo	Research Student	r.tiwo@keele.ac.uk Keele University, Staffordshire, UK, ST5 5BG	00447973304165 002349092803888

My research project will contribute towards the award of a PhD degree. I am very grateful for reading the information sheet and completing the checklist.

Appendix M: Information sheet and checklist for gatekeeper (Host Community Leaders)

INFORMATION SHEET AND CHECKLIST FOR GATEKEEPER (Host Community Leader-Interviewee).

Invitation

Host Community Leaders within your jurisdiction are invited to participate in an interview on (Climate-induced migration in Nigeria). Your support is important for the success of this intervention, and I want to thank you in advance for your help. Before you make any decisions, it is important for you to understand why the project is taking place and what it involves. Please have a look at the information below and feel free to raise any questions you may have about the research.

I will be very grateful if you can make the host community leaders in your jurisdiction aware of the research by distributing the information sheet and consent form provided. Also, I would like to stress that taking part is voluntary, so no one should be pressured into participating. The information sheet and consent form have my contact details.

This study is being conducted by me, the researcher Richard Tiwo.

What is the project about?

The project is about the issue of climate change and its effect on migration from the northern part of Nigeria to other parts.

What does the study involve?

The interview will take place through phone/online. Your assistance will be needed in circulating an information sheet and consent form to officials who may be interested in taking part. Any official who is interested in participating in the interview will have

to confirm this willingness with me directly through my contact details (at the end of this information sheet).

Does the host community leader have to take part by coercion?

No. It is up to the host community leader to give his or her consent willingly. Host community leader contribution is very important to the success of this research without being coerced in any way. It is entirely up to participants to get in touch with me. Furthermore, if any host community leader agrees to participate in the interview, the host community leader may choose not to participate, or stop participating at any time without penalty.

Are there any benefits to being part of the research project?

The participant will be able to offer his or her opinions on migration-induced Climate Change in Nigeria and to contribute to a broader piece of research on the key issues/challenges of relevance, as well as how the process can be managed.

What are the possible risks of taking part in this study?

Host community leader confidentiality is of the utmost importance. All interviews will be conducted by phone/online with me, Mr Richard Tiwo. The data provided will be kept strictly confidential and not shared or distributed with or to anyone except my supervisor, Dr Alexandre Nobajas. There may be potentially sensitive questions and/or themes that emerge. All quotes will be anonymised.

What about confidentiality?

All records of this project will be kept private and anonymous. My supervisor and I, Dr Alexandre Nobajas, will be the only individuals with access to the information collected. Electronic data will be password-protected, and hard copy data (i.e., questionnaires) will be in locked storage. A digital recorder will only be used during interviews if participants consent to this. The results of this research may be presented at conferences and/or published in professional journals. Participant's generic community title, e.g., community leader/chief, will not be used or published, unless it is agreed to. Personal data such as (i.e., names, addresses, and contact details) of all participants will be kept confidential and are only known to me, the principal investigator and my supervisor, Dr Alexandre Nobajas. Quotations used in this study will be ascribed to respondents using the study code. The information sheet

and consent form also inform participants that their data will remain confidential.

***Please, I want you to note and understand this:** it is vital that there must be no elements of coercion on your part. Your role is simply to distribute the information and consent form. I would appreciate it if interested participants were advised/directed to hold on to the consent form for collection by me, the researcher directly, and not the gatekeeper.

What will happen next?

I would appreciate it if my contact details were circulated/presented to the host community leader who is interested in participating. The researcher, Richard Tiwo, will arrange/organise an appropriate time and place for the sessions. This may involve working around a particular practice. I will accommodate you as best as possible. The host community leader will be provided with details of the project via a consent form before they make a final decision about whether or not to take part.

Who can I contact for further information about this study?

Please feel free to contact the researcher to discuss this study in further detail:

Researcher: Richard Tiwo, **Email:** r.tiwo@keele.ac.uk

Phone number: 00447973304165. 002349092803888

Gatekeeper Role Checklist

This is a checklist for those acting as a gatekeeper and highlights important considerations when supporting research.

Please emphasise the voluntary nature of participation in the research.

Please make sure you do not attempt to persuade or encourage participants to take part at any point. And no elements of coercion on your part. Your role is simply to distribute the information sheet and consent form. I would appreciate it if interested participants were advised-directed to hold on to the consent form for collection by me, the researcher directly, and not the gatekeeper, on an arranged date.

Please explain the importance of taking part in the research, and please ensure-explain to the participant the importance of reading the information sheet and consent form before making up their mind to participate.

If you are unsure about any aspect of the research, please contact the researcher [Richard Tiwo].

If a participant who has read the information sheet and consent form asks you more about the research, please advise that you have no part in the design or content of the research and refer them to the researcher [Richard Tiwo].

Please highlight the contact details on the information sheet for participants.

I, the researcher [Richard Tiwo], will be virtually present and provide instructions when data collection takes place.

The participants should be left alone to agree to be interviewed in their own time and should not feel pressured.

Name of researcher	Designation	Contact Email	Telephone Number
Richard Tiwo	Research Student	r.tiwo@keele.ac.uk Keele University, Staffordshire, UK, ST5 5BG	00447973304165 002349092803888

My research project will contribute towards the award of a PhD degree. I am very grateful for reading the information sheet and completing the checklist.