

FROM RHETORIC TO ACTION: The Impact of Framings in Climate Change
Communication and Adaptation Actions

Analysing values and principles underlying risk and securitisation framings in relation to
climate change adaptation priorities and measures

by

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Preface

In 2016, when I was offered this doctoral position, I was ecstatic for two reasons. One was my thirst for knowledge and an opportunity to be in an academic environment as a researcher. The second reason was the subject matter (adaptation to climate change and securitization theory). I've always been interested in risk communication, but the application of securitization theory added a new dimension. Nonetheless, the voyage has been both frustrating and a steep learning trajectory for my personal development. Despite my extensive learning during this research, I feel less knowledgeable.

I worked on this thesis between 2016 and 2023. It has been a lengthy and arduous procedure. In 2018, I became ill and was close to quitting. It was a tremendous honour to have a supervisor who encouraged me to keep pressing. When you are healthy, you want to accomplish many things, but when you are ill, your sole objective is to recover. When I recovered in 2020, my contract had expired, and I had to find a new job to support myself. I was offered a position as an assistant professor at the University of Tromsø Harstad campus, which put me in charge of a course for the first time. Even though it was extremely difficult to combine a full-time job with this research, being in an academic setting with supportive colleagues was helpful. I would not trade the experience for anything else.

My journey into academia began with a chat I had with Dr. Kristine Scharffscher (my master's thesis supervisor). She recognised my academic interest and requested that I present a paper at a conference at the University of Agder. At the conference, Prof. Odd Einar Olsen and Prof. Bjorn Ivar Kruke informed me of a PhD position at UiS. That was how my PhD started at UiS. To Kristine, this is to say a big thank you for paving the way to my dream in academia.

I would like to express my appreciation to all my colleagues, acquaintances, friends, and family who made this research possible. Specifically, I would like to thank the staff of the Geography Department at the University of Nigeria, Nsukka, for their interest in and assistance with this doctoral research endeavour. I would like to thank Professor Chidi Nzeadibe specifically for hosting me and making it easier for me to conduct fieldwork. I would also like to express my gratitude to Dr. R. Ayadiuno for assisting me in locating the appropriate contact and transporting me to some of the interview locations. To all the local government actors, federal and state government actors, NGO actors, and researchers from research institutes who participated in the interview and observation, I extend my deepest appreciation.

Dr. Øystein Klemetsen and my other colleagues in Harstad and Tromsø deserve special thanks for their understanding and friendship. Thank you to the Department of Safety, Economic, and Planning at the University of Stavanger for providing the funding that enabled this study. Professor Odd Einar Olsen and Dr. Kenneth Pettersen Gould served as my mentors and guides throughout the PhD process. Odd Einar, thank you for your academic contribution to this study, but more importantly, I appreciate your patience and motivational push, even when I was on the verge of giving up. Thank you, Kenneth, for teaching me some of your extraordinary technical abilities in academic writing. You have taught me a great deal, and I am excited to continue learning.

Thank you to everyone from the Department of Safety, Economics, and Planning who attended my seminars and provided feedback. Professor Ole Andreas Engen and Professor Preben Hempel Lindøe, thank you for being my opponents in 50% and 90%, respectively. Your input was instrumental in completing this research. To my "then" wonderful colleagues at UiS, especially Maria and Reidar, thank you for your genuine interest, warm support, and encouragement. It was a privilege to be in your company. Professor Tore Markeset, even though my contract had expired, you granted me access to a laptop and other materials that facilitated my work. You also ensured that I had office access whenever I visited UiS. Thank you.

My father, my uncle P, and my uncle's wife deserve sincere gratitude for imparting in me the skills, confidence, and everlasting desire to value knowledge and education. To T, I am grateful for your support. To my dearest friends, Kulu and Osy, I appreciate the encouragement. K, my blue-eyed boy, best friend, and husband, thank you for your love, care, support, and patience throughout the years, and especially for always catching me when I am on the edge of falling. Lastly, I am grateful to God Almighty for giving me life.

Stavanger, 31 May 2023

Chinwe Philomina Oramah

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Summary

The purpose of this study is to analyse the value of framing in climate change communication and its implications for Nigeria's adaptation process. The manner in which climate change information is framed influences how stakeholders perceive climate change and, consequently, make decisions. Since the United Nations Security Council discussed the security threat posed by climate change for the first time, in 2007, there has been a growing recognition that climate change poses a significant existential threat. Several studies have predicted that climate-related hazards will likely pose socio-political challenges, resulting in numerous security issues. Nigeria, which is vulnerable to climate security concerns, such as food and water insecurity, displacement, and migration, is currently framing climate change as a security issue. This is because the majority of its population engages in subsistence agriculture, fisheries and grazing, and because desertification, drought, flooding, erosion and other climate-related hazards are on the rise. In addition to climate-related hazards, it is widely recognised that Nigeria faces several pressing structural, social, political, and cultural stressors. The country also lacks the capacity to adapt to climate security threats (resource scarcity, conflicts, migration) and has attracted international support to increase its adaptive capacity. The Nigerian response to climate security issues has been inadequate, despite international support.

Whilst much current debate focuses on technological and economic instruments for achieving effective responses (especially regarding adaptation), less attention has been paid to communication, which is a tool for achieving understanding and cooperation to effect changes in human behaviour. And yet, this is particularly important, not only because unsustainable behaviour represents a key cause of climate change but because sustainable behaviour can be effective for adaptation action. Therefore, communication is an essential part of climate risk management and forms an important cornerstone for adaptation. Recent research from Nigeria indicates that climate change awareness and perception, two issues that are attributed to ineffective communication, influence poor climate change adaptation. Against such a background, a key requirement will be to foster communicative dialogue and deliberation between scientists, policymakers and the public regarding climate change understanding and its implications for adaptation.

The use of risk communication to influence risk behaviour is an established field of research. However, communicating about climate change to influence adaptation raises a number of complex issues. This is because what some consider to be 'dangerous' climate change with

'urgent existential threats' is seen by some as a complex and uncertain risk, with a potential impact far into the future. Thus, managing climate change requires the exploration of values that influence people's awareness, understanding, knowledge and acceptance of climate risks. If values influence people's awareness and understanding of climate change, there is a need to explore how the values of security and risk impact adaptation action. This means it is impossible to present information about climate change to influence responses in a neutral manner, without some context on how such information is framed. In the context of climate change, it is widely acknowledged that framings, rather than climate change information per se, play a decisive role in motivating or discouraging action.

The framing used in communicating climate change impacts people's perceptions and also their perceptions of solutions. Hence, discursive approaches can provide helpful insight into how the construction of climate change information can impact adaptation actions. Scholars have used discursive approaches to explore climate change communication and response in many developed countries. However, very few studies have investigated the impact of climate change discourses on adaptation within the Nigerian context, a gap in the literature this thesis seeks to address.

This thesis examined the framing employed in communicating climate change in Nigeria from 1994 (when the country joined the United Nations Framework Convention on Climate Change) to 2020. The focus will be on 2015, which represents a significant turning point in the climate security debate in Nigeria. The objective of this research is to analyse the values of framing in climate change communication and the implications for the adaptation process in Nigeria.

The study was based on primary and secondary data. The primary data comprise 62 interviews of actors at local, state, and federal agencies, NGOs, and academia in Nigeria. The secondary data were based on a wide range of elite speeches, government documents, media reports and scientific texts.

Taking a constructivist stance and drawing on frame, risk, and security perspectives in communication theory, I developed a framework to analyse the values of framing in climate change communication and the implications for adaptation processes. I used the framework to analyse two of the most studied frames in climate change literature (security and risk). The two frames have also been popular in shaping the climate change debate in Nigeria since 1994. The framework comprises three interconnected stages: identifying the security and risk frames in texts, speeches, and interview data from Nigeria; identifying how these frames construct climate

change messages; and assessing their influence on adaptation processes. For each frame, the main arguments and statements, actors and rhetorical characteristics are identified and discussed. The thesis then addressed the implication of security and risk frames on adaptation processes.

The climate security frame, with an emphasis on the existential threat and the need for urgent action, was popular and widely supported by elite political actors, the media, state, and federal actors, as well as recent government documents. The climate security frame is mainly used as political rhetoric, with a quest for climate justice and holding the international community responsible and accountable for adaptation. Using the security framing in climate change communication has significant implications for adaptation. Climate risk framing that emphasises uncertainty, complexity and ambiguity was less popular among the elite actors but is widely supported by local actors, NGOs, research institutes, the media and previous government documents. Despite the risk frame not being so popular among the political elite, it remains a powerful frame, providing an alternative narrative that points to climate change as a threat multiplier. The influence of climate risk can be traced to scientific evidence that climate security issues are influenced by hazard exposure, existing vulnerability (social and political) and poor adaptive capacity.

I find that, while the elite actors successfully use security frames to communicate their messages at the international and national levels, they have been less successful at the grassroots level. There are two reasons for this failure. One is the constant use of communication channels unavailable to people at the grassroots level. The other is that securitisation settings are not accessible to local actors. This implies that vulnerable people and communities are often not effectively informed about climate change and are therefore excluded from the securitisation process. Communicating climate security to audiences at the international and national levels is not enough to spur adaptation action that takes place locally. The consequences of climate change and the option to address them need to be framed and communicated in ways that resonate with people's experiences, values, and beliefs, to stimulate meaningful adaptation action.

This thesis contributes to climate change communication and response in three different ways:

1. Illuminating the social construction of climate change in Nigeria.
2. Analysing why security framing is gaining more popularity than risk framing in Nigeria's climate change communication.

3. Analysing the influence of climate security and climate risk framing on adaptation processes in Nigeria.

Different actors communicate climate change and options for adaptation action using contrasting frames. The study shows two frames concerning Nigeria's adaptation strategy: climate security and risk. These two frames were selected because they are the most studied in climate change literature. The climate security argument is most strikingly achieved through apocalyptic imaginaries, which position climate-related issues as issues of equity and justice requiring emergency action. The argument developed is that security framing presents a politicised vision of adaptation, which creates the opportunity for financial accumulation and fails to tackle essential questions of inclusion and justice in adaptation.

Furthermore, the setting for the securitisation of climate change within Nigeria is often not accessible to most of the Nigerian population. Therefore, the study challenges the prevailing idea that securitising climate-related problems will lead to urgent adaptation action. Instead, I argue that attention needs to be paid to the grammar, setting and audience of securitisation. This is because the response to climate change information will be influenced by people's perception, experience, understanding of climate risk, cultural beliefs and values, and societal dynamics. The study discusses the risk as a complementary frame alongside the security frame, which, if combined effectively, can act as a good formula for adaptation. The risk frame acknowledges the impact of non-climatic vulnerabilities in climate-related security issues and how reducing vulnerabilities can influence adaptation positively. The study argues that elements in the risk frame, such as deliberative communication, credibility, collaboration, and trust, can act as critical moderators for climate risk communication and participatory adaptation.

PART 1

1. Introduction

In this chapter, I will introduce the research objective and research questions. I will start by establishing the reason for discursive research on climate change adaptation in Nigeria and then discuss the aim of the research. The questions that will guide the analysis will be presented.

1.1. The need for discursive research in climate change adaptation in Nigeria

Climate change is a global threat that has led to international frameworks and agreements. Growing recognition of its global consequences saw the emergence of several international agencies and agreements, including the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, the Kyoto Protocol of 2005, and the Paris Agreement of 2015. The totalising rhetoric that climate change is a global threat stands at odds with the recognition that climate change impacts are disproportionately distributed (Mikulewicz, 2020). Some developing countries face more significant risks from climate change because of unfavourable geography, limited assets, poverty, and greater dependency on climate-sensitive economies (Adger et al., 2003; Nath & Behera, 2011; Leichenko & Silva, 2014). These countries are also less able to adapt, even though they have contributed the least to climate change (Matthew, 2016).

The Least Developed Countries Fund (LDCF) was established in 2001 at the 7th Conference of the Parties (COP7) in Marrakech and became operational in 2002. The LDCF supports the preparation of National Adaptation Programmes of Action (NAPAs) and the implementation of projects to meet adaptation needs in vulnerable developing countries. In 2009, the Adaptation Fund (AF) became functional to assist 'Parties to the Kyoto Protocol' in mitigating the impacts of climate change by implementing concrete adaptation projects. As one of the world's largest sources of climate finance, the Adaptation Fund supports adaptation projects in partnership with the World Bank (WB), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) (Sovacool, Linnér, & Klein 2017).

Nigeria is one of the most vulnerable countries where the potential security implications of climate change are of significant concern (Brown, Hammill, & McLeman, 2007; Sayne, 2011; Nwauba, 2018). This concern is related to the country's climate-related hazards, such as drought, flood, and erosion, to name but a few. With several million Nigerians directly dependent on climate-sensitive sectors such as agriculture, prolonged droughts and floods have an economic and socio-political effect at the local and national levels. Climate-related disasters

will likely reduce crop yields and production, impacting food, water and infrastructure security (Ani, Anyika, & Mutambara, 2022).

Being aware of its vulnerability, Nigeria signed up to the United Nations Framework Convention for Climate Change in 1994 and has since submitted the following documents: the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN), in 2011; Nigeria's Second National Communication (NNC), in 2014; the first Nigeria Intended Nationally Determined Contribution (INDC), in 2016; the Nigeria National Adaptation Plan Framework (NNAPF), in 2020; and Nigeria's Adaptation Communication to the United Nations Framework Convention on Climate Change (NAC), in 2021. The country also ratified the Paris Agreement in 2016. Article 7 of the Paris Agreement (UNFCCC) highlighted that "adaptation action should follow a country-driven gender-responsive, participatory, and fully transparent approach, taking into consideration vulnerable groups, communities, and ecosystems, and should be guided by available science, traditional knowledge, knowledge of indigenous people, and local knowledge systems to integrate adaptation into relevant socioeconomic and environmental policies and actions" (United Nations, 2015: 9). However, despite the documents and agreements, public perception about climate change has not reflected the mainstream view of the scientific community or its attitude towards adaptation, which has rendered Nigeria's adaptation response inadequate (Asekun-Olarinmoye et al., 2014; Orié, 2021).

According to recent research from Nigeria, poor climate change adaptation is a result of low climate change awareness and perception (Asekun-Olarinmoye et al., 2014; Onyekuru & Marchant, 2017; Okon et al., 2021). Despite the significance of the public's awareness of climate change and beliefs as regards adaptation, little prior research has examined communication strategies that could alter the perceived cause of climate security issues and the adaptation process required. Scholars in science communication have urged that a correct understanding of the causes of climate security issues in vulnerable countries like Nigeria is the key to success in promoting climate change adaptation behaviour (Wibeck, 2014). Hence, most communication efforts have focused on educating the public with quality scientific facts, under the assumption that citizens will respond positively when they are informed about scientific facts.

Communication is an established field of research, especially regarding the use of risk communication to influence risk behaviour. Communicating about climate change raises a number of complex issues, due to the abstract and distant nature of the issue, people's

dispositions and values, and socio-political factors. As Lorenzoni et al. (2005) point out, what some consider to be "dangerous" climate change, with an existential threat, is regarded by others as an uncertain and complex science, with potential impacts far into the future. An exploration of the values that influence people's risk acceptance is, therefore, required. This means that it is impossible to present information about climate change in a neutral manner, without some context on how such information is framed (Thaler & Sunstein, 2009; Hulme, 2009; Spence & Pidgeon, 2010).

Framing in communication refers to using rhetorical devices to emphasise certain aspects of reality over others (Entman, 1993). Framing theory and research seek to understand how related sets of ideas in the public domain are presented and debated to influence responses (Spence & Pidgeon, 2010). Framing is not concerned with what is communicated but with how a given piece of information is presented (or framed) by an actor (Scheufele & Iyengar, 2017). Frames by different actors in the climate change policy domain can help shape ideology and serve as governance tools (Carvalho, 2007; Singh & Swanson, 2017). A variety of different types of frames are discussed in climate change literature (see Li & Su, 2018).

Discursive approaches can provide helpful insight into how frames used in communicating climate change information can impact adaptation actions. However, few studies utilise discursive approaches to explore barriers in Nigeria's adaptation process. Discursive approaches have been used in many developed countries, such as Australia, Canada, Finland, France, Germany, the Netherlands, New Zealand, Norway, the United Kingdom, and the United States. It has also been applied in a few developing countries, such as Cameroon (Nkiaka & Lovett, 2019), the Congo (Somorin et al., 2012), Kenya (Symons, 2014), Senegal (Ayeb-Karlsson, Fox, & Kniveton, 2019) and Tanzania (de Wit, 2020).

These scholars argue persuasively that discursive approaches can provide valuable insight into the perception and understanding of and response to climate change. People are beginning to experience climate change, but understanding and response to climate change are moderated by the information available, the underlying framing and the narrative construction (Hovden & Lindseth, 2004). Actors, organisations, and interest groups have different perspectives about climate change and what constitutes an appropriate response. These actors use frames to present their perspectives, which evoke different understandings, project different perceptions, and contribute to a specific response option (Weingart, Engels, & Pansegrau, 2000; Etkin & Ho, 2007; Fløttum & Gjerstad, 2017; Stecula & Merkley, 2019). It is, therefore, crucial to be aware of the frames in the climate change debate and the options they promote.

1.2. The aim of the study

This thesis seeks to contribute to the body of knowledge, by examining the two most-studied framings in climate change communication and how they influence adaptation in Nigeria. Risk and security are the two dominant frames in climate change research. Hence, the research problem is: *What are the impacts of security and risk framings on climate change communication and adaptation processes in Nigeria?* To solve the research problem, the following questions will be explored:

1. Why is security framing becoming more prevalent than risk framing in the Nigerian climate change debate?
2. How do the values in security framing influence the adaptation process in Nigeria?
3. How do the values and principles of risk framing influence adaptation in Nigeria?

The frames in the climate change debate are diverse and can be studied through spoken, visual, and written texts and the contexts within which they are produced and disseminated (Koteyko & Atanasova, 2016). So, it is necessary to define the scope of this investigation. The study focuses on the climate change debate between 1994 and 2020, with a focus on the period from 2015–2020, which saw a significant turning point in Nigeria’s securitisation of climate change.

1.3. Timeline of the doctoral project

Activities	2016	2017	2018	2019	2020	2021	2022	2023
Research proposal	November							
PhD course in Philosophy of Science	December							
NordSTEVA workshop on the use of security concept	December							
PhD course in Research Ethic and Design		June						
PhD course in Qualitative Research Methodology		May						
PhD course in Securitisation, Risk Governance and Climate Change Adaptation		January-April						
PhD course: Climate Change Adaptation and Transformation Towards Sustainability		August						
Fieldwork		September	January					
Presentation of empirical data and 50% seminar			March					
Conference Nigeria: International conference “Managing Environmental Resources for the Attainment			September					

of the Sustainable Development Goals (SDGs)”								
Conference on Earth System Governance, Utrecht			November					
Conference Society for Risk Analysis, Stavanger			November					
Conference Society for Risk Analysis, Cape Town				May				
Article 3 (book chapter) submitted for review (Paper 3)					June			
Article 3 (book chapter) published					November			
Article 2 submitted for publication					July			
Article 2 published						September		
Article 1 submitted for publication							November	
Article 4 submitted for publication								May
90% Seminar							January	
Thesis submission								May

The thesis is delayed due to circumstances of sickness¹

1.4. Structure of the thesis

The thesis is structured into eight chapters, including this introduction, which presents the research aims and objectives and the research questions. In chapter two, the context within which the study is built is introduced. In this chapter, climate change, mitigation and adaptation are discussed, as the significant contexts of the study. Nigeria and the southeast, as the contextual background of the study, are also introduced in this chapter. In chapter three, the conceptual and theoretical underpinnings, upon which the whole research is built, are explored. First, the concepts and frameworks within communication theory that form the background of this research, such as framing, risk and security, are introduced and discussed. Next, the rationale for using a framing theory to investigate climate change communication and adaptation is analysed. Then, the risk frame is operationalized within climate change communication, and securitisation theory is introduced. Chapter four introduces and discusses the research design and the study methodology underpinning this thesis. The research strategy is described in this chapter, and the parameters of the chosen context are clarified. Also in chapter four, the data collection methods and ethical reflections regarding the research quality are discussed. Chapter five introduces the results. Firstly, the papers and their contributions are presented, followed by the overall results, systematically, based on the three research questions.

¹ I was on sick leave between September 2018 and April 2020, which affected the publication of the articles and the submission of the thesis.

In chapter six, the findings are reviewed, discussed, and put into context, based on the theories. Chapter seven is where the concluding remarks of the study, its limitations and the contribution of the study are discussed. Possible directions for future research are presented in chapter eight.

2. Contextual Background

The purpose of this chapter is to establish the context under which the study is developed. I will start by elaborating on the relationship between global warming and climate change. The link between climate change, weather-related hazards (floods and droughts) and risk will be presented next. Then, I will present Nigeria as a context and elaborate on the southeast as the research site. I will also address Nigeria's climate change mitigation and adaptation measures.

2.1. Climate change

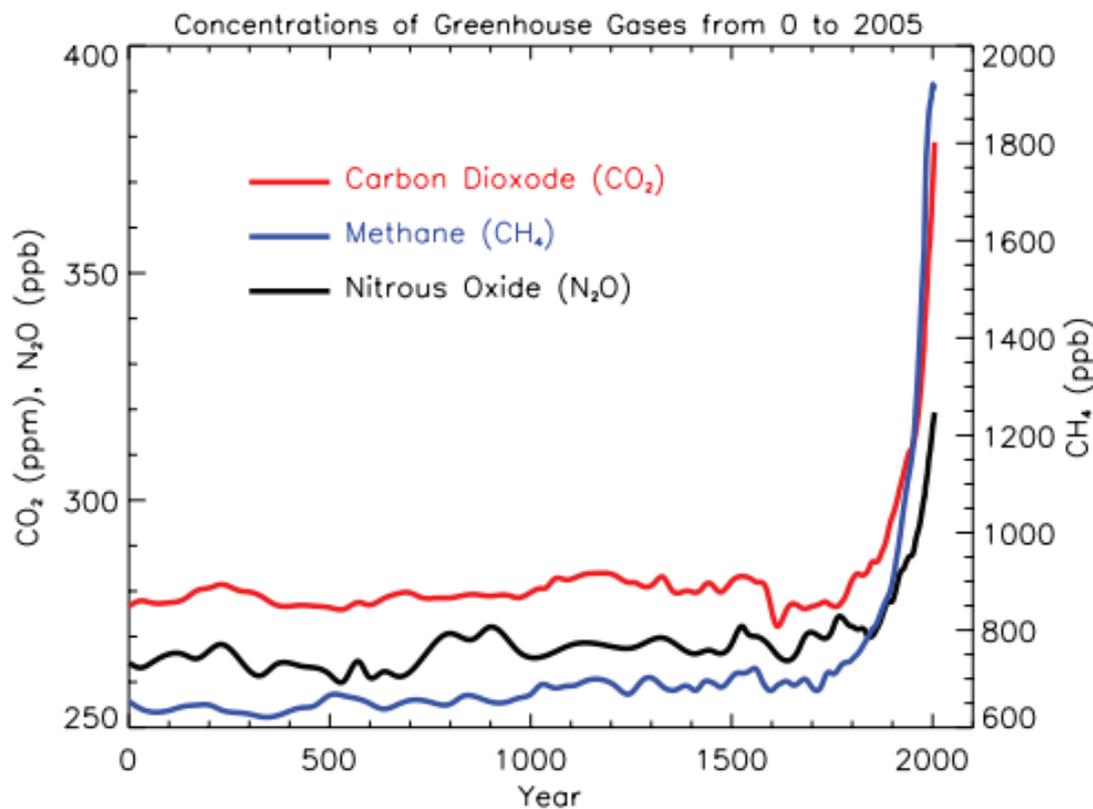
Climate change is defined as a change in the state of the climate and the variability of its properties over an extended period of time (IPCC, 2007). According to the Intergovernmental Panel on Climate Change (IPCC) report, these changes are partly due to natural and externally induced climate variability. A combination of internal variability, natural external causes, and human influence causes climate change (New, 2019). Internal variability in the climate system takes place when varying components, like the atmosphere and ocean, create changes in climatic conditions such as temperature or precipitation. The natural external cause is a result of an increase or decrease in volcanic activity and solar radiation, which can cause small fluctuations in global temperature. Scientific studies in the late 1950s accelerated the science of climate change, by revealing how human activities were altering the composition of the atmosphere and changing the earth's climate (Stanhill, 2001). Humans influence climate change by releasing greenhouse gases and other particles into the air through unsustainable land use.

The science behind human-caused climate change has become more accurate and trustworthy during the last few decades due to intensive research and political discussion. In 1988, the IPCC gathered multiple pieces of evidence to deduce that human influence is the only possible explanation for the patterns and magnitude of climate change induced by global warming. So far, the IPCC has compiled six major assessments in 1990, 1995, 2001, 2007, 2014, and 2021, with increasing evidence that human-induced climate change is occurring. These reports are based on a review of published peer-reviewed literature and show that the emission of greenhouse gases from human activities is responsible for approximately 1.1°C of warming from 1850–1900 (IPCC, 2004). So far, there is a projection that anthropogenic activities have caused about 1.0°C of global warming above the pre-industrial level. With the current emission rate, this is likely to reach 1.5°C between 2030 and 2052. The responsible human activities

include but are not limited to fossil-fuel use, biomass burning, land-use change and agriculture (Bolin, 2007).

Greenhouse gases from human activities are the most significant driver of observed global atmospheric temperature in the mid-20th century (IPCC, 2013). The major greenhouse gases from human activities are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). The concentration of these greenhouse gases in the atmosphere warms the climate. They do this by trapping the heat within the surface-troposphere system like a warm blanket. The phenomenon of gas-trapping heat is known as the greenhouse effect. Without the greenhouse effect, the mean temperature on earth would be -18 °C.

Figure 1. Important greenhouse gases over the last 2,000 years. Increases since about 1750 are attributed to human activities in the industrial era. *Source:* IPCC 2007²



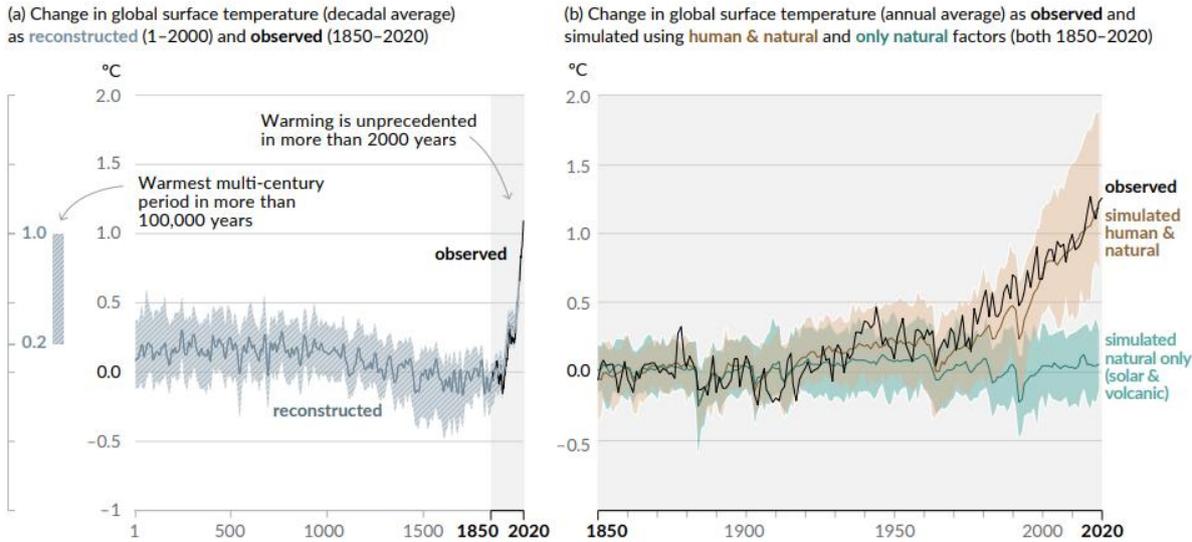
Global warming

As a result of the greenhouse effect, our atmosphere is getting hotter, more turbulent, and more unpredictable. As each greenhouse gas level increases in the atmosphere, the global climate is

² As the greenhouse gas emission from human activities increase, they build up in the atmosphere and can stay there for tens to hundreds of years after being released. Their warming effects on the climate persist over time. Worldwide, the net emission of greenhouse gases from human activities increased by 43 percent from 1990 to 2015. See IPCC (Intergovernmental Panel on Climate Change) 2013. Climate change 2013: The physical science basis. Working Group 1 contribution to the IPCC Fifth Assessment Report. Cambridge, United Kingdom: Cambridge University Press.

further agitated, heated, and boiled. The fast-warming climate is characterised by warmer temperatures, which are projected to increase by approximately 1.1°C between 1850-1900; the IPCC predicts that, averaged over the next 20 years, global temperature is expected to reach or exceed 1.5°C of warming (IPCC, 2021). Global warming is caused by the increase in the Earth’s average global temperature observed since the pre-industrial period between 1850 and 1900 (Lindsey & Dahlman, 2021). Global warming is due to human activities, primarily the burning of fossil fuels, which increases heat-trapping greenhouse gas levels in the earth’s atmosphere. The IPCC report holds that several regional changes in climate are projected to occur with global warming up to 1.5°C compared to pre-industrial levels, including the increase in temperature in many regions. Given the above explanation, the change in global atmospheric temperature is linked to natural climate variability and, directly and indirectly, to anthropogenic activities.

Figure 2. Change in global surface temperature as observed and simulated using human & natural and only natural factors (both 1850–2020). *Source:* IPCC, 2021³



³ Figure 2 shows that human influence has warmed the climate change in average global temperature relative to 1850-1900 through observed temperature and computer simulations. Notes: In panel (a) the solid grey line is reconstructed from paleoclimate archives (year 1-2000), while the black line is from direct observation (years 1850-2020), both relative to 1850-1900 and decadal averaged. The vertical bar on the left shows the estimated temperature (very likely range) during the warmest multi-century period in at least the last 100,000 years, which occurred around 6500 years ago during the current interglacial period (Holocene). Panel (b) shows changes in global surface temperature over the past 170 years (black line) relative to 1850-1900 and annually averaged, compared to Coupled Model Intercomparison Project Phase 6 (CMIP6) climate model simulations of the temperature response to both human and natural drivers (brown) and to only natural drivers (solar and volcanic activity, green). Solid coloured lines show the multi-model average, and coloured shades show the very likely range of simulations. See IPCC 2021: “Summary for policymakers” in Climate Change 2021: The Physical Science Basis – Contribution of Working Group 1 to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, p. 6.

2.1.1. The impact of climate change

Climate change will alter ecosystems and biodiversity. Significant disruptions of ecosystems, from disturbances such as drought, flood, storm, coral bleaching, and fire, are expected to increase. The increase in ecosystem disturbances will alter how individual species interact with other organisms and their habitats, altering the ecological system's services to society (Weiskopf et al., 2020). Shifts in the locations of habitats may also lead to a breakdown of the terrestrial and marine ecosystems (IPCC, 2021). According to the IPCC, about 30% of plant and animal species assessed so far are likely to be at increased risk of extinction if increases in the global average temperature exceed 1.5°C.

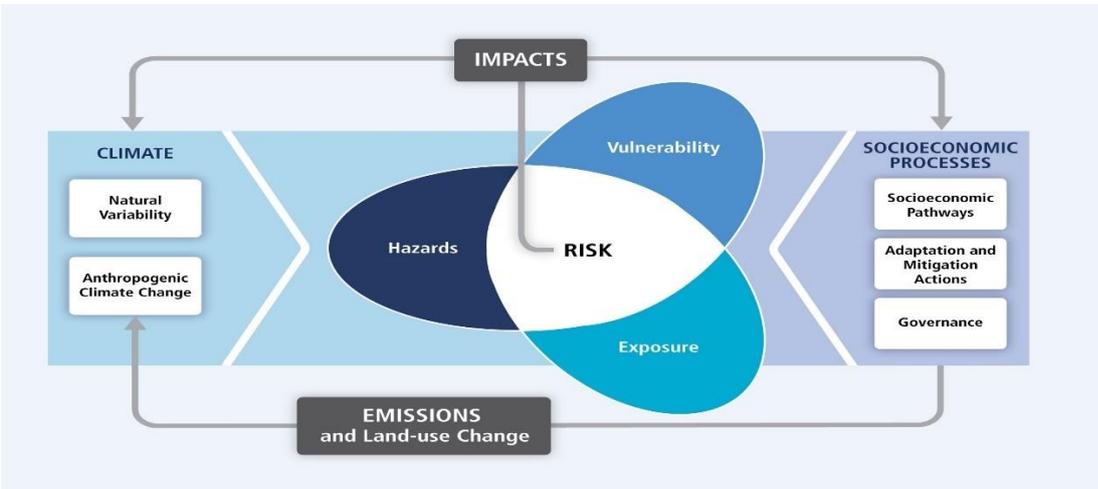
Climate change will manifest in sea level rise, shrinking mountain glaciers, accelerating Greenland ice melt, global atmospheric temperature variability and rainfall variability (IPCC, 2021). In the short to medium term, there will be changes in frequency and the intensity of precipitation and extreme weather events in several regions (IPCC, 2018). Precipitation is projected to increase over high-latitude regions such as tropical Africa (West Africa) and southern and eastern Asia, leading to longer dry spells. The IPCC (2013) identified West Africa as a climate change hotspot, where precipitation will negatively impact crop yields and production, which could lead to food security issues. At the same time, it is projected that subtropical land regions will witness decreases in precipitation.

2.1.2. The risk and security impacts of climate change

Climate change is linked to the risks associated with sea level rise and the increase in extreme weather events. Sea-level rise and an increase in extreme rainfall are projected to increase flood risks further and, without adaptive measures, will increase flood-related disasters. While some regions will experience extreme rainfall, others will experience dryness that will lead to desertification, drought, and extreme heatwaves. The IPCC suggests that an increase in climate-related hazards will lead to physical and social risk and thereby create adverse consequences for human lives and livelihoods, health, social and cultural assets, infrastructure, ecosystems, and species in vulnerable countries (IPCC, 2022). However, susceptibility to climate change impacts in the mentioned places will arise because of vulnerability and exposure to numerous non-climatic factors such as significant poverty, severe inequality in income distribution and access to resources, as well as poor adaptive capacity due to socio-economic and political constraints (IPCC, 2018). Affected countries, such as Nigeria, have already started experiencing food insecurity linked to rising migration and poverty (IPCC, 2022).

Despite the frequent mention of some security issues, the IPCC uses risk as a key concept in assessing and communicating to decision-makers the potential adverse impacts of climate change and response options (Reisinger et al., 2020). The IPCC's risk conceptualisation examines the social consequence of climate change, by incorporating the system's sensitivity, the nature of people's exposure, vulnerability, and the capacity of those exposed to cope with climate risk (IPCC, 2014).

Figure 3. Core concepts related to risk in AR5 WGII (IPCC, 2014)⁴



The IPCC AR5 introduced the concept of risks that can potentially impact human and socio-ecological systems. The framework showed that climate-related risks could be reduced through mitigation and adaptation.

2.2. Responding to the impacts of climate change through mitigation and adaptation

Mitigation is a measure required to limit the impact of climate change. It refers to various actions taken to absorb or remove greenhouse gases (GHGs) from the atmosphere or prevent the emission of greenhouse gases, to limit the magnitude of future warming (IPCC, 2014). Mitigation efforts range from complex to simple improvements, such as constructing high-tech subway systems for bicycling paths and walkways. Mitigation can be subdivided into alternative strategies like emission reductions, climate intervention and geoengineering (or climate engineering). Emission reduction can be achieved by using renewable energies and new green technologies, making older equipment more energy efficient, reducing deforestation,

⁴ The core concepts of climate risk. The risk of climate-related impacts results from the interaction of climate-related hazards with the vulnerability and exposure of the human and natural system (IPCC, 2014)

improving sustainable agricultural methods, and changing management practices and individual and collective behaviour (IPCC, 2018). Climate intervention includes actions designed to remove GHGs from the atmosphere or change the Earth's radiation balance to mask some climate effects (National Research Council, 2015). Geoengineering and climate engineering have been used to refer to highly complex and poorly defined collections of activities. One method of geoengineering considers carbon dioxide removal (CDR), while another method, known as solar radiation management (SRM), is a technique that attempts to offset the effect of GHG concentration by reflecting a small percentage of the sun's light and heat back into space (Harding & Moreno-Cruz, 2019).

However, as expressed in the IPCC report, some additional degree of climate change is unavoidable. Regardless of how immediate the mitigation of GHG emissions is, we are bound to face a degree of climate risk (IPCC, 2014). To address existing risks and those we are bound to face in the future, we need actions, grouped into adaptations. Climate change adaptation refers to "the actions taken to manage the impacts of climate change by reducing vulnerability and exposure to its harmful effects and exploiting any potential benefits" (IPCC, 2018: 51). The aim of adaptation is to reduce vulnerability and exposure to the harmful effects of climate change, such as sea level rise, more intense extreme weather events or food insecurity, through various preventive, preparedness, and reactive measures (IPCC, 2018). While climate change is a global issue, its impacts are disproportional and experienced locally. This puts national and state agencies and municipalities on the frontline of adaptation. Adaptation faces several barriers, such as a lack of local knowledge, finance, and technology; social values and attitudes; and institutional constraints (Klein et al., 2014; IPCC, 2022).

2.3. Nigeria as a context

Nigeria, the most populous country in Africa, with about 206 million people, is located on the west coast of Africa. It shares borders with Niger to the north, Chad and Cameroon to the east, the Gulf of Guinea on the Atlantic Ocean to the south and Benin to the west. Nigeria is a plural society with about 250 ethnic groups and about 250 languages. In trying to unite the warring ethnic groups, the British colonialists created Nigeria and provided a suitable atmosphere for ethnic conflict (Osadola, 2012). Nigeria has three major politically dominant ethnic groups: the Hausa-Fulani, the Yoruba, and the Igbo. The Hausa-Fulani dwell in the north, with a great majority of the Muslim population. The rural Fulanis are mostly farmers and cattle herders. The Yoruba dwell in the southwest and consider the deity Oduduwa their progenitor. The Yoruba

have diverse religions, ranging from Christianity to Islam to traditional religion. Most Yoruba are farmers, but they live in urban areas away from their rural farmland. The Igbos are made up of Christian and traditional worshippers. The Igbos dwell in the southeast and are mainly farmers and traders. Each ethnic group inhabits a territory that it considers its own by inheritance.

The country is divided into six geopolitical zones: north-central, north-east, north-west, south-east, south-south, and south-west. These are not based on geographical location but on ethnic identification. This entails that individuals who are not members of an ethnic group but have lived and worked for several decades in that territory are still considered aliens. In some cases, especially in the southeast, such aliens may not have the outright title to acquire landed property. People still migrate from one ethnic territory to another in search of farmland and other business activities. With the Muslim-dominated north and the Christian-dominated south, there is constant perennial ethnic and religious mistrust (Nwauba, 2018).

2.3.1. The risk and security impact of climate change in Nigeria

Nigeria has a tropical climate, and projections reveal a significant increase in temperature for the coming decades (Akande et al., 2017). The climate-related issues impacting Nigeria differ across the country. The variable precipitation in the north and the south is leading to variable rainfall, sea-level rise, desertification, land degradation, drought, flood, soil erosion, wind erosion, desert encroachment and other extreme weather events (Ebele & Emodi, 2016). The southern part is experiencing heavier precipitation and relatively constant temperatures and humidity throughout the year. Northern Nigeria is experiencing low precipitation, high humidity, and a decrease in rainfall, resulting in droughts. However, humidity falls during the Harmattan, due to the hot, dry northeast trade wind. Desert encroachment and a reduction in surface water and resources on land are leading to a reduction in arable land (Olagunju, 2015). During the drought of the 1970s and 1980s, about one million livestock were lost, affecting the meat and dairy supply across the country (Odjugo, 2009 in Ebele & Emodi, 2016:6).

Nigeria is blessed with rich mineral resources. Cacao and rubber plantations are present in large portions of the southwest forest. The northern part of the forest belt is occupied by baobab, tamarind, and locust bean trees. In the North, there is open savanna. However, these areas' vegetation has been removed by continuous cropping, overgrazing and bush burning. Semidesert conditions exist in the Lake Chad region, where various species of acacia and the

doum species of palm are common. In the far northern areas, the climate changes are leading to the total disappearance of plant life, facilitating a gradual southward advance of the Sahara.

Odjugo (2005) observed that climate change impacts the coastal wetland's vegetation structure or biodiversity composition. The Northeast and the Northwest are vulnerable to a combination of rising temperature and less precipitation, resulting in a rapid depletion of surface water, flora and fauna resources (Federal Ministry of Environment, 2014; Haider, 2019). Climate change manifests itself negatively in areas, as in the drying up of rivers and lakes and the reduction in the groundwater table level, as observed in the decreasing size of Lake Chad. The lakes in Nigeria are drying up and at risk of disappearing (Haider, 2019). The drying up of rivers and coastal flooding will lead to the relocation of settlements, industrial plants, dams, and hydroelectric facilities (Odjugo, 2005). Climate-related risk is projected to worsen the instability in volatile Nigeria and other West African regions, especially since these countries lack adaptive capacity (Burke et al., 2009). Lake Chad's drying is currently linked to extremism across the country, especially in the northern part of the country, where there are limited opportunities for economic empowerment and youth employment (Jaiyeola & Choga, 2021). Some farmers and fishermen are dependent on the lakes for their livelihood. Terrorist groups such as Boko Haram exploit climate-related problems to boost recruitment, especially among those who have lost their livelihoods due to drought and desert encroachment around the Lake Chad region.

The nation's vulnerability to climate change can also be related to the nation's dominance in sectors that are climate-sensitive, such as agriculture, fisheries, water resources, forestry, and energy. Climate change and environmental degradation exacerbate the challenges faced by the predominantly rural population, which is mostly engaged in subsistence farming, fishing, and other climate-sensitive livelihoods. Agricultural produce is mostly rain-fed, making it difficult for over 70 percent of Nigeria's population who engage in agriculture as a means of livelihood (Haider, 2019). Unpredictable rainfall results in fewer wetlands and makes it difficult for farmers to plan farming activities (Olaniyi, Olutimehin, & Funmilayo, 2019). The challenges the farmers confront regarding climate variability result in a shift in crop production and reduced agricultural productivity, which leads to increased hunger, poverty, malnutrition, and disease (Obioha, 2009; Bello et al., 2012; Ani et al., 2022). At the same time, the direct and indirect impacts of climate-related hazards on agriculture and other sectors may lead to displacement, internal migration, and conflict in Nigeria (Sayne, 2011; Matemilola et al., 2019). The impact of climate change, in general, will cost Nigeria between 6 and 30 percent of its

gross domestic product (GDP) by 2050 (Ebele & Emodi, 2016). Climate change has health implications, ranging from malaria to cholera, diarrhoea, and typhoid, especially in riverine areas of Nigeria (Ogbanga, 2015). Climate change is also leading to displacement in Nigeria. The factors or causes of climate change-related displacement include environmental degradation, climate-related disasters, disputes over land resources and inter-communal clashes.

2.3.2. Mitigation and adaptation to climate change in Nigeria

Nigeria is not regarded as a high-emission country, due to its underdeveloped status. However, it is crucial to remember that Nigeria's current energy system relies primarily on fossil fuels (85% natural gas), which will contribute to CO₂ emissions (Dioha et al., 2019). Nigeria's Intended Nationally Determined Contribution (INDC, 2016) report states that "under a business-as-usual growth scenario, consistent with strong economic growth of 5% per year, Nigeria's emissions are expected to grow to about 900 million tonne per year in 2030". Nigeria's Climate Change Policy Response and Strategy goal is to contribute to the success of the Paris Agreement by fostering low-carbon and encouraging sustainable and high economic growth by reducing emissions by 45% (INDC, 2016). Nigeria is encouraged to embrace cleaner energy and mitigate the use of dangerous gases, with a reduction potential projected to have zero net cost. Agriculture, transportation, and other sectors also contribute to emissions and are encouraged to engage in mitigation strategies. Nigerians are encouraged to mitigate by engaging in sustainable development and lifestyles (INDC, 2016). However, transforming the energy system to cleaner energy in a short time frame might present challenges that will create a dilemma for Nigeria (Dioha et al., 2019). This is because about 40% of Nigeria's population living below the poverty line often engages in deforestation for fuel wood because they cannot afford other energy sources (Jaiyeola & Choga, 2021).

Given that some communities and several sectors are already experiencing climate-related issues, Nigerians have started engaging in adaptation activities to reduce the negative impacts of climate change and take advantage of new opportunities (INDC, 2016). Nigeria has developed legal and institutional frameworks to meet its international obligations for climate mitigation and adaptation actions. In February 2003, Nigeria's First National Communication under the United Nations Framework Convention on Climate Change (NNC) was submitted. The NNC sheds more light on the consequences of climate change in the country. In 2011, Nigeria initiated a comprehensive adaptation process, by establishing its National Adaptation Strategy and Plan of Action on Climate Change. The comprehensive adaptation process has

continued as stipulated in a Second National Communication in February 2014. Nigeria signed the Paris Agreement proposed by the UNFCCC (United Nations Framework Convention on Climate Change) in 2016. The Paris Agreement emphasises local and global actions to adapt to climate variability, including building resilience and reducing vulnerability. Nigeria has also adopted the 2015 Sendai Framework for Disaster Risk Reduction proposed by UNISDR (the United Nations International Strategy for Disaster Risk Reduction). The Sendai Framework is concerned with building the resilience of communities and nations to climate-related and other types of disasters. In 2016, Nigeria developed the Intended Nationally Determined Contribution (INDC). In 2020, the country developed the National Adaptation Plan Framework (NAPF). NAPF will guide the policymakers in planning, coordinating, and implementing the policies, plans, strategies, and legislation necessary for Nigeria to address its adaptation needs.

However, the implementation of adaptation strategies and action plans remains a challenge, due to several difficulties found in the study:

1. The high adaptation costs and limited adaptation funding mechanisms (Papers 1 and 2).
2. A government that tries to avoid responsibility by blaming external factors (Paper 2).
3. A lack of collaboration and coordination among relevant stakeholders, especially local actors (Papers 3 and 4).
4. Poor climate change communication that is not inclusive and is devoid of dialogue and deliberation is resulting in an adaptation plan that is difficult to implement (Paper 4).
5. The exclusion of sub-national government (state and local governments), local actors, women, youths, and other groups marginalised from the securitisation process and adaptation decision-making (Paper 2).
6. The limited capacity to carry out a comprehensive climate risk assessment, analyse climate change information and interpret climate risk assessment is due to a lack of comprehensive knowledge about climate-related problems and technical know-how (Papers 3 and 4).

2.4. Southeast Nigeria as a context

The southeast constitutes one of the six geopolitical zones in Nigeria. While other zones comprise six states, the southeast comprises five Igbo-speaking states: Abia, Anambra, Ebonyi, Enugu and Imo. The southeast is bounded to the east by Cross River State, to the west by Delta State, to the north by Benue and Kogi and by River State to the south. This study is mainly

about two states in the southeast: Anambra and Enugu. The region is particularly vulnerable to climate-related problems, especially floods, droughts, and soil erosion.

Figure 4. Map of Nigeria, showing the Southeast Geopolitical Zone



The south easterners are agitating for separation from Nigeria. This agitation dates back to the Nigerian Civil War (1967–1970), during which, Anambra State (which comprises the present Enugu State) was part of the secessionist Republic of Biafra, formed by Igbo nationalists. Anambra State was afflicted by a severe famine that devastated much of the population during the war. The agitation of the Biafran nationalists in Southeast Nigeria is rooted in factors such as inequality, long-term political marginalisation, and exclusion.

2.4.1. The risk and security impact of climate change in Southeast Nigeria

The southeast zone is vulnerable to climate-related problems, especially floods, mild droughts, and erosion. A large proportion of Southeast Nigeria has a long rainy season and high annual rainfall. The rainfall trend has shown a slight increase in the southern coastal area of the region (Odjugo, 2010). However, the distortion in rainfall patterns is seasonal. Frequent rainstorms and flooding will lead to high incidences of soil erosion and threaten coastal settlements less than 10 m above sea level (Odjugo, 2010; Matemilola et al., 2019). From the perspective of

climate security, floods, and mild droughts in the southeast affect agricultural production, which threatens water, food, and infrastructure security.

Apart from agricultural production, disastrous floods also destroy lots of properties and often register high casualties in the southeast. The drought in the north has also led to increased migration of herders into the more fertile southern part of the country in search of grazing land. Herders' migration to the south is leading to fierce competition and violent conflict with farming communities in the southeast over land resources. However, the history of farmer-herder relations reveals other complex social and ethnic-communal diversity (Chukwuma, 2020). With fewer green lands and poor access to open grazing fields in the southeast, the herders often lead their livestock to graze on farmlands. A situation in which farm products are destroyed by livestock is bound to lead to violent clashes over access to grazing land. The recurrent clashes between nomadic cattle herders and some farming communities have led to the loss of many lives, including those of herders and farmers. The herder-farmer conflict is also leading to the displacement of farmers from their farmlands and homes.

2.4.2. Anambra and Enugu as the study areas

Anambra State shares a border with Abia and Enugu States to the east and with River State and Delta State to the west. It is bounded by Imo State to the south, with a spatial extent of about 4,816 km². To the north, it is bounded by Enugu and Kogi States. Enugu State is bordered to the east by Ebonyi State, to the west by Anambra State, and to the north by Benue and Kogi States. It is bounded by Abia and Imo States to the south, with a spatial extent of about 7,161 km². Anambra is a populous state, despite being the second smallest state in the region. According to the 2016 census, Anambra has an estimated population of 5,527,809 while Enugu State has an estimated population of 4,411,119.

The two states share some similarities as regards vulnerability to climate change impacts. In both states, there is often flooding during the rainy season and a mild drought during the dry season. On the other hand, mild drought is more common in Enugu State, while flooding is more common in Anambra. In recent years, the increase in flooding has been due to increased rainfall. An increase in rainfall and flooding contributes to soil degradation and gully erosion (Odjugo, 2010). Flooding and soil erosion have led to the loss of arable lands, making it difficult for farmers to engage in the high level of agricultural production required by the population. Flooding and gully erosion have also led to the displacement of settlements and villages. Flood and gully erosion is most severe in the two states because sandy and light silt soil make them

vulnerable to corrosive rainfall. The effect of corrosive rain on soil erosion is multiplied by the poor drainage system. Poor drainage and waste management systems make it easy for overflowing waste and sanitation facilities to contaminate and pollute streams and rivers during flooding. An inadequate water management system makes it challenging for people to access clean water during flooding.

Figure 5. Showing participants' locations in Anambra and Enugu States



In the riverine area, especially in Anambra State, the lack of basic infrastructure, such as electricity, pipe-borne water, and good roads, makes life more difficult for the people, especially during flooding. People can go hungry for lack of dry fuelwood, especially when excessive rain makes it difficult to dry firewood. Due to poor access to electricity and inexpensive alternative energy, fuelwood remains the most accessible energy source for cooking and other activities in rural areas. The need for fuelwood leads to the excessive cutting of trees and deforestation. In turn, deforestation destabilises the soil and disrupts the ecosystem's cycle. Flooding can contribute to poor transportation and make access to the market challenging for farmers. Agricultural products not sold due to poor market access could be lost because of the lack of infrastructure for proper preservation. In the LGAs around the riverine area, boats are used for transportation during flooding, making people's movement from one place to another challenging.

3. Theoretical Framework

In this chapter, I will present the theoretical perspectives that will be used to analyse the results and discuss the research questions. I will operationalise frame, risk and security as concepts and theories in climate change communication. These concepts and theories will be used to demonstrate that, while climate change is real, how people understand, interpret, and respond to it depends on the frames actors use in communicating it.

3.1. Communication theory

Communication science is rooted in ideas about human and societal behaviour and investigates how and why people engage in interpersonal, group and mediated interactions in different contexts. Ballantyne suggests that communication science is widely applied in psychoanalysis, behavioural science, sociology, and other subfields, including mass communication, health communication, political communication, and environmental communication (Ballantyne, 2016). Communication is a social process, in which people share experiences, pass information, explain events, justify actions, and complain, leading to attitudinal or behavioural effects as a direct result of message stimuli and an appropriate response from receivers (Berger & Chaffee, 1987; O'Boyle, 2022). This is a functionalist stance, in which communication is seen as a delimited, linear act, with a well-defined beginning and end (Ballantyne, 2016).

The linear approach to communication is regarded by critics as a naïve simplification of the interactive, context-dependent nature of communication. Critics argue that, by studying the exchanged information alone, contextual factors that impact people's interpretation of the message and allow them to become co-authors or cocreators of meaning are ignored (Ballantyne, 2016). This is because information is often shared and received within an individual's socio-cultural group. For example, Fiske suggests focusing on the cultural and social influences on message meaning-making and subjective interpretation (Fiske, 2011). For Ballantyne (2016), the influence of cultural and social influence on communication is associated with the construction of meaning rather than the discovery of truth, where the sender can never exert control over the meaning of the message content and how it is interpreted. Ballantyne suggests that such a communication paradigm does not assume that meaning is immanent in the text or speech; rather, texts or information only contain meaning when subjectively interpreted.

3.2. Framing in climate change communication

Climate change, which emerges as an issue of science, has broad-ranging impacts worldwide and has potential mitigation and adaptation strategies that are significant to people across sectors, interests, and nations. Despite the impacts supported by scientific evidence, climate change is an abstract concept presented from a different perspective. While some individuals consider climate change a dangerous problem with an existential threat, others consider it a complex science with uncertainties (Lorenzoni, 2005). The complexity of climate change issues implies that the traditional fact-centred way of communicating climate change information may not necessarily suit all interests. Hence, research into framing, as a technique for tailoring climate change communication to engage a diverse public, has become important. Framing can be used to understand different social realities of climate change (Schäfer & O'Neill, 2017). This is because different actors in the climate change debate use frames for ideological and governance purposes to communicate and legitimise a particular interpretation of the social realities of climate change (Entman, 1993; Carvalho & Burges, 2005; Spence & Pidgeon, 2010).

Framing was first conceptualised by Ervin Goffman and presented as a set of concepts that actively classify, organise, and interpret our experiences, make sense of them, and guide our actions (Goffman, 1974). The concept of framing has theoretical and empirical contributions (Lecheler & de Vreese, 2019). At the heart of framing is the notion that the selective presentation of information can affect people's beliefs, decisions, and behaviours (Chong & Druckman, 2007). Framing is not concerned with what is communicated but with how it is communicated (Scheufele & Iyengar, 2017). For example, Shen and Edwards (2005) suggest that value identification can influence the framing effect for individuals and groups. This is because the values that an individual or group can access will be relevant in shaping that individual's interpretation of relevant information and subsequent judgement about the issue. They argue that this is why individuals and groups respond more favourably to frames presented by people or leaders they support.

Framing can affect people's attitudes, especially when it is used in communicating climate change that is considered ambiguous, complex, and multifaceted (Adarves-Yorno et al., 2013). Using competing frames to present an issue can cause two individuals to determine the cause and consequences of the same problem differently, depending on the level of support and trust they have for the presenter's underlying value. In the climate change debate, people often

interpret the cause in favour of their group, to protect their values and deny responsibility for the problem (Kitzinger, 2007).

More recently, Lecheler and de Vreese suggest that, when actors frame an issue, the consequences of such a frame can be conceived at the individual and societal levels (Lecheler & de Vreese, 2019). They add that it is the individual and contextual moderator variables that determine the effect of framing. They acknowledge that individual moderator variables are connected to the idea that our decision-making and behaviour are affected by our psychological states and traits, political disposition, religious beliefs, and values. Furthermore, they argue that individual moderator factors include personal knowledge, perception, expectation, or value regarding climate change. The contextual moderator factors under which framing can take place include the environment in which the frame is built, issue quality, the credibility of the source producing the frame and interpersonal communication during frame exposure. They argue that contextual factors can influence information framing at the societal level. Previous scholars have explored different types of frames in the climate change debate. In this study, I will concentrate on risk and security framing.

3.3. The criteria for risk framing in the climate change debate

The ideas used in framing theory will be used to operationalise the risk framing in climate change, since framing refers to how actors present certain events or problems. In this study, I acknowledge that climate-related hazards and the potential for risks are material facts. However, as soon as we ascribe meaning to them, they become part of the frame that individuals give meaning to. Thus, how we make sense of climate change as a risk depends on how meaningful and plausible the logic is and how much climate change contains key risk characteristics. Aven and Renn defined risk as uncertainty about and the severity of the consequences (or outcome) of an activity with respect to something that humans value (Aven & Renn, 2015: 706). They argue that a risk description of climate change is obtained by specifying the events of climate change and the consequences and using a description of uncertainty. From a hazard perspective, risk has also been defined as the likelihood of the occurrence of a hazard (Cutter, 1996). In this definition, scholars argue that risk occurs due to the interactions between hazards, exposures, and vulnerabilities (Cutter, 1996; Fuchs et al., 2012; Birkmann et al., 2013). The elements in both definitions must be present for an issue to be understood as a risk. I find those elements present in the IPCC's description of climate change.

The IPCC AR5 framework presented in Chapter 2 (see Figure 3) considers climate-related risks as a result of interactions between exposure to climate-related hazards (left) and vulnerability to socioeconomic processes, including mitigation and adaptation (right) (IPCC, 2014). The framework recognises that risk can be linear, complex, or ambiguous and will be characterised and perceived differently by people with diverse values (Mach et al., 2016). According to Wu et al. (2022), recognising the challenge of reducing uncertainties in future climate projections is the key to evaluating risk and climate change information for adaptation.

For Morton et al. (2011), uncertainty, which is an important element of risk, can influence behaviour through a range of processes. They argue that people may adopt an "I don't care" attitude and take no action when faced with uncertainty. They also argue that uncertainty (a) can trigger a feeling of threat in people and lead to denial and a sense of control over the issue, and (b) may allow people to maintain an optimistic stance about current behaviour and, in some cases, provide convenient justification for them to carry out self-interested actions. In communication, frames shrouded in certainty are easier to understand than frames shrouded in uncertainty (Tversky & Shafir, 1992). Despite the negatives in the uncertainty narrative, Morton et al. (2011) argue that uncertainty about the future of climate change may lead people to act in ways that seek to avoid negative outcomes. The uncertainty concept can present climate change as a distance problem, applicable in space, time, probability, and social distance (Liberman, Trope, & Stephan, 2008; Maglio et al., 2013), which can lead people to think that they have time to plan while neglecting the urgency of action. Other scholars argue that the psychological distance inherent in uncertainty can decrease the likelihood of people coming to terms with the reality of climate change and subsequently reduce their support for adaptation (Lorenzoni & Pidgeon, 2006; Newell et al., 2014). Previous scholars argue that uncertainty can affect people's collective imagining of the climate risk's impacts and cause people to question how they could do anything about it (Milkoreit, 2017; Toivonen, 2022). Milkoreit argues that it will be challenging for people to imagine a solution to a problem that is absent from their collective imagination (Milkoreit, 2017).

Other climate risk research has focused on the vulnerability narrative. Studies in socio-ecological interaction have pointed out that climate-related risk is a function of the interaction between hazards, exposure, and vulnerability, highlighting the social risks of climate change. The social risk approach presents climate change as a problem, solvable by individual lifestyle and system management (Toivonen, 2022). Pointing out that climate change is a social issue can increase the feeling of efficacy, which is a key determinant of action (Bandura, 1977).

Rayner and Maolone (1997) suggest that highlighting the social impact of climate-related disasters and risks will encourage people to act sustainably in mitigating those disasters. Scholars have argued that people can engage in effective action when they feel that they have the ability to act and that advocated behaviour could avoid negative impacts (Prentice-Dunn & Rogers, 1986; Ruiter et al., 2001). Along similar lines, previous findings indicate that focusing on the social impact of climate change will increase people's climate change perception and lead to positive action to adapt (Spence & Pidgeon, 2010). There are suggestions that action, as regards social impacts, may set a precedent for behaviour change and inspire change in underlying social norms and value systems that are leading to climate-related disasters (O'Brien et al., 2010). Hence, framing climate change as a social problem takes into account the socio-cultural and political factors that influence public perception of climate change. In risk governance literature, it is argued that individuals' and groups' perceptions of climate change information are central to many climate change behaviours (Lorenzoni & Pidgeon, 2006; Zia & Todd, 2010; Maesele & Pepermans, 2017; Sambrook et al., 2021). Individuals with high climate risk perceptions are more likely to respond to warnings and undertake preparedness than individuals with low-risk perceptions (Hung, Shaw, & Kobayashi, 2007; Ruin, Gaillard, & Lutoff, 2007). However, apart from information framing, other factors that influence risk perception include risk judgement, cultural bias, political interests, individual personality, knowledge about risk, experience, context, attitude, and social constructs reflecting values, beliefs, norms, and ideology (Weinstein, 1980; Wachinger et al., 2013; Slovic, 2016).

3.4. The criteria for security framing in the climate change debate

Since 1970, framing climate change as a security threat has grown in popularity and has been a successful attempt to introduce environmental concerns into the security agenda (Trombetta, 2008). The construction of climate change as a security issue is known as climate security, which points to the causal link between climate stress and societal instability (Scheffran, Link, & Schilling, 2012). Climate security proponents assume that climate change would worsen human living conditions and lead to national and international instability (IPCC, 2007).

What is security? Security is defined as “the assurance people have that they will enjoy those things that are most important to their survival and well-being” (Sooros, 1997:236 in Scheffran, 2011). Security framing in climate change challenges the narrow view of security and elevates the issues of climate change to high politics, where they would attract the priority and funding they deserve (McDonald, 2013). The security framing in this study is grounded in securitisation

theory. Since framing refers to the use of rhetorical devices to present an idea in the public sphere to influence response, it resonates with the work performed by securitisation actors (Carvalho, 2014). Securitisation theory was first introduced in the 1990s by the so-called Copenhagen School and has been expanded by the second generation of securitisation scholarship (Stritzel, 2014). The Copenhagen School draws attention to the subjective security perspective, by emphasising the intersubjective socio-political process within which security threats are framed (Buzan & Wæver, 2009). The main argument of securitisation theory is that, by designating an issue a "security threat", immediate attention is given to that issue if accepted by the audience (Buzan et al., 1998). There are steps to securitisation:

1. An actor presents an issue as a security threat, using a speech act.
2. The speech gets transformed through acceptance by the relevant audience.
3. The acceptance of the issue translates the issue into high-level politics that lead to specific policies.
4. In some cases, a successful securitisation move leads to the application of extraordinary measures.

However, Buzan et al. (1998) suggest that a successful securitisation move requires facilitating conditions. Such conditions include (a) the grammar of security used to construct an issue as having an existential threat, (b) the characteristics of the alleged threat as regards its threatening nature and the referent objects exposed to the threats (often the state), (c) the audience's perception of the issue, and (d) the social capital and the framing power of the securitising actor. Securitisation is, therefore, a rhetorical and linguistic process that impacts decision-making on an issue (Fischhendler & Nathan, 2014).

From a sociological standpoint, the securitisation process extends beyond speech act and audience to include other conditions such as textual meaning, language, setting, power relations and context, where meaning is created (Balzacq, 2005; Roe, 2008; Guzzini, 2011; Côté, 2016; Stengel, 2019). The conditions mentioned can contribute to the success or failure of securitisation. Sociological securitisation theorists argue that securitisation is a continuum and does not always occur because of high politics but can occur in the day-to-day routine. They also argue that the success and failure of securitisation depend on the securitising actors' motives and do not necessarily lead to the use of extraordinary measures (Floyd, 2016).

Climate change as a security threat has been discussed from national, international, and human security perspectives. The climate security argument is grounded in the social constructivist

tradition, does not reflect one absolute reality, and has an inter-subjective ontology. This implies that it is not often the severity of the impact that determines whether climate change is a security issue but rather how the issues are constructed within political discourse. The proponents of national security have presumed that vulnerability to climate-related hazards can lead to competition, political instability, social disorder, and conflict (Matthew, 2011; Meierding, 2013; Piguet, 2013; Trombetta, 2014; Salehyan, 2014; Buhaug, 2015; Theisen, 2017). This is expected in societies that are deeply split along ethnic identities, religious beliefs, and regional and class lines, with a discriminatory political system and limited financial power (Kahl, 2006; Theisen, Gleditsch & Buhaug 2013).

The national security logic has become very significant in many countries and has given birth to several policies, especially on using green energy. Applying the national security logic (this entails that the state is the major referent object) can complicate the climate change adaptation discussion, especially for vulnerable nations that lack adaptive capacity. Another issue with the national security argument is that climate-related hazards such as floods, droughts and storms bear little resemblance to the military violence that typical traditional state security issues will pose. This is not to claim that climate change will not affect state security. In some atoll countries, the state's survival is already in question due to climate-related sea-level rise.

Some scholars focus on the human security discourse, in which livelihood insecurities such as resource scarcity, food and water insecurity, inequality and poverty are linked to increasing climate-related disasters (Allouche, 2011; Sam et al., 2019; Bacon et al., 2021; Raj et al., 2022). The human security perspective discusses how climate change can lead to human migration and competition between different groups. Early work on environmental migration has presumed that physical vulnerability to climate-related hazards and disasters occupied a primary role in mobility patterns. The discourse of environmental migration led to the development of the concept of environmental refugees, where migration is seen as a consequence of climate change in developing countries. The pace of climate change increases climate change-induced migration (Hugo, 1996; Myers, 2002). In this view, climate change has been found to cause migration and exacerbate the risk of conflict. In some cases, migration results from adverse weather and the scarce resources that ensue from such events. In other cases, conflict is itself a consequence of climate-induced migration.

International security discourses within the climate change debate consider that, although humans and countries will suffer from climate-related disasters, the impacts are disproportionately distributed among the world's population. Hence, the equity issue related to

social structural inequalities is significant in the discourse on climate security, especially for the most vulnerable populations. The equity principle has three dimensions:

1. Intergenerational (fairness between generations),
2. International (fairness between states), and
3. National (fairness between individuals and communities) (IPCC, 2018: 55)

The principle involves procedural justice about how the costs and benefits of climate action are distributed. Three equity concerns dominate the adaptation debate. The first is in differential contributions to the climate change problem: the observation that the benefits from industrialisation have been unevenly distributed and those who benefited most have contributed most to the current climate problems and bear greater responsibility (McKinnon, 2015; Otto et al., 2017). The second concern is that the worst impacts tend to fall on those least responsible for the problem, within states, between states and between generations (Fleurbaey et al., 2014; Shue, 2014). Third, the worst-affected states, organisations, and individuals with the capacity to shape response strategies are not usually represented in adaptation decision-making (Robinson & Shine, 2018). The three concerns are applicable to the findings presented in Papers 2 and 3 of this study.

The climate security issues would not otherwise have been considered without the political mobilisation of the security narrative concerning the threat of climate change. The IPCC has tied the possible extinction and destructive effects of some species and ecosystems to climate change (IPCC, 2019; 2022). Political leaders have also portrayed climate change as a matter of survival and an existential threat (Huggel et al., 2022), making threat the most widely used narrative within the climate security frame. Scholars have argued that framing an issue as a threat can make people act rigidly or try harder using well-established routines and procedures. Applying this to climate change may lead to doing more of what got us into trouble to begin with (Roberto, 2016). At the same time, climate change differs from other external enemies that need to be fought with guns and other types of weapons (Buzan et al., 1998). Another most widely used climate change narrative within the security frame is the apocalypse. The apocalypse narrative can instil fear and panic and seems to leave very little room for humans to operate (Toivonen, 2022). Such a narrative can produce a sense of powerlessness and less control to act in the face of climate-related threats. Fiskio tied the apocalyptic narrative to the collapse of civilization and argued that such rhetoric is often used to justify the need for policies of authoritarianism and exclusion (Fiskio, 2012). Climate change issues may require high politics to get the policies accepted, but adaptation is a local practice that requires the

involvement of all stakeholders. Despite the negative connotations, Hinkel et al. (2020) view the apocalyptic notion of climate change as a transformative rhetoric that will provide a strong ethical argument for mitigation and assist developing countries in meeting the cost of adaptation. Hinkel argues that security has been successful in helping to bring climate change onto the political agenda through the establishment of the United Nations Framework Convention on Climate Change, which has instituted a range of global agreements and principles. Such an agreement includes the 2015 Paris agreement, designed to aid effective mitigation and adaptation. Although not often binding, these frameworks are ratified by countries that are parties to the UNFCCC.

4. Research Methodology

This chapter outlines the methodological approach and strategy used in this research. It also summarises the strengths and weaknesses of the research methodology, as well as ethical reflections.

4.1. Exploratory research design

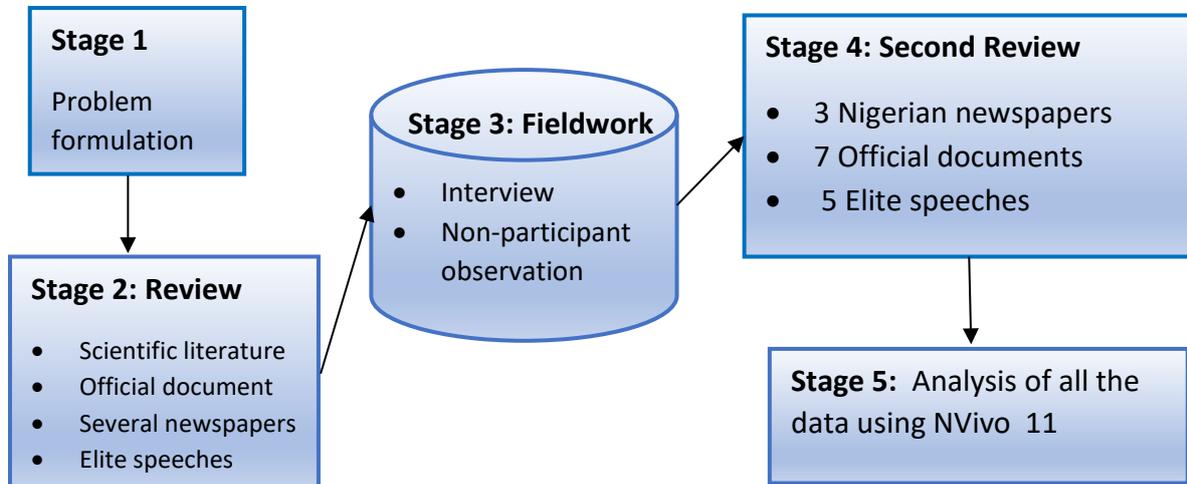
This study began with a sincere desire to analyse the impact of framings on climate change communication and adaptation action. To achieve that, I developed a structure, through which everything flows from the research design, including the idea, research questions and theories of use. Research design is often described as a linear process that begins with a researcher formulating an idea, gathering theoretical information, collecting, and analysing data, and reporting the results (Sarantakos, 2005). When the idea of this research was conceived, I formulated clear research questions and adopted theories in climate change communication, which include framing, risks, and security. Some of the research questions were modified as I obtained information through empirical data. Overall, this study has been less tidy, like many other studies with an exploratory approach. I started with the assumption that using security framing to communicate climate change concerns would improve adaptation action. Through exploratory study, I identified risk and security as popular frames in the climate change literature. I then examined how security and risk framings are used to communicate climate change in the Nigerian debate and the effect of each framing on adaptation action.

Whether climate-related or otherwise, security risk does not affect countries, communities, and people equally. Instead, the risk impact is contingent on the exposure, susceptibility, and vulnerability of affected people, which often systematically differ across socio-political and economic class, ethnicity, gender, and other factors (Neumayer & Plumper, 2007). Hence, I argue that people's knowledge about climate change and options for adaptation in Nigeria is contingent on perception and social experience, which take place through socio-cultural and institutional interactions and can be obtained through qualitative inquiry.

The qualitative data-gathering technique in this study includes semi-structured interviews, non-participant observation and document analysis. My choice to use the corroboration of findings across the three mentioned data sets is for triangulation and to reduce the impact of potential bias (Bowen, 2009). The research process is made up of five stages. I started with problem formulation and then carried out document exploration, before embarking on fieldwork. After

the fieldwork, I conducted a more extensive document analysis and uploaded all the data into NVivo 11 for analysis.

Figure 6. Research process



4.2. Data collection

The data were gathered from primary and secondary sources. By the nature of the study topic, all the participants were involved in climate change and adaptation. The documents and speeches are also about climate change and climate change adaptation.

4.2.1. Primary data collection

Primary data in this study are those gathered directly from observed situations and interview subjects to explore the impact of climate change framing on adaptation practices in Nigeria. Primary data comprise 62 semi-structured interviews and non-participant observation.

The interviews

The semi-structured interview method is used for an in-depth understanding of actors' perceptions and how they interpret the climate change-related floods and droughts taking place around them. This is mainly because certain information about people's perceptions and interpretations of climate change issues is ingrained in their minds (Merriam & Tisdell, 2015). I collected data through a conversational relationship with the participants during the interview.

Interview objects and the timeline for the interview

Table 1. Interviews and the timeline for the interview

Data	Data object	No of data objects	Number of participants	Timeline for interviews	Method of interview
Primary data semi-structured interviews	Local government level	<u>4 LGAs (Local Government Areas) in Anambra State</u> 1. Anambra East LGA 2. Anambra West LGA 3. Ayamelum LGA 4. Ogbaru LGA	16 (4 from each LGA)	October – November 2017	45-60 minutes face-to-face in the interviewee's office
		<u>4 LGAs in Enugu State</u> 1. Igbo-Eze South LGA 2. Isiuza LGA 3. Nsukka LGA 4. Udenu LGA	16 (4 from each LGA)	December 2017	45-60 minutes face-to-face in the interviewee's office
	State government level	<u>2 States in Southeast Nigeria</u> 1. Anambra State 2. Enugu State	10 (5 from each state)	November 2017	45-60 minutes face-to-face in the interviewee's office
	Federal government level	<u>2 Departments under the Federal Ministry of Environment</u> 1. National Emergency Agency 2. Department of Climate Change	10 (5 from each department)		45-60 minutes face-to-face in the interviewee's office
	Research institute	<u>3 Department at the University of Nigeria Nsukka</u> 1. Centre for Environmental Management and Control 2. Department of Geography 3. Centre for Climate Change	6 (2 from each department)	October 2017	45-60 minutes face-to-face in the interviewees' office
	Non-governmental organisation	2 Non-governmental organisations (NGOs)	4 (2 from each NGO)	November 2017	45-60 minutes face-to-face in the interviewee's office
Non-participant observation	Observed situations relevant to the research questions	Non-participant observation took place in all 8 local government areas	Observation before and after interviews	October–December 2017	When relevant

The study was conducted at the national, state, and local government levels. Two NGOs, research institutions and agencies under the Federal Ministry of Environment were selected at the national level. The State Ministry of Ecology, the State Ministry of Environment and Climate Change, the State Ministry of Works and the State Emergency Management Agency

were selected from Anambra and Enugu States in the southeast region of Nigeria. Eight local government areas (LGAs) were selected from the two states: from Anambra State: Anambra East LGA, Anambra West LGA, Ayamelum LGA and Ogbaru LGA; and from Enugu State: Igbo-Eze South LGA, Isiuzo LGA, Nsukka LGA and Udenu LGA. All the selected LGAs experience climate-related problems in different forms. The selected LGAs in Anambra State have been experiencing severe flooding and mild drought. The selected LGAs from Enugu State experience floods and mild drought. In each local government area, four participants were selected, based on their knowledge of climate change and adaptation.

Participants in the semi-structured interviews included ten from the federal government, ten from the state, 32 from local government parastatals, six from research institutions, and four from NGOs. These participants are labelled federal government participants (FGP), state government participants (SGP), local government participants (LGP), NGO participants (NGP) and research institution participants (RIP). Some details are not included in this thesis, to preserve the participants' confidentiality.

All the interviews took place face-to-face and lasted between 45 and 60 minutes. The interviews were conducted in the English language. In Nigeria, English is the official language and is spoken and written by the majority of the population. I am fluent in both written and spoken English. However, some respondents perceived themselves as less confident, happy, and intelligent when they speak English, which they consider a second language. At the same time, the cultural meaning attached to certain concepts, such as climate change, adaptation, disaster, risk, security, and governance, in different cultures in Nigeria could result in an unfair interpretation. To overcome this and ensure the accuracy and validity of qualitative interviews, Schoenberger (1991) suggests that the researcher learn how the respondents use language and what they mean by how they use it. I took this suggestion seriously, which led to a seminar being conducted to present the topic and the necessary concepts for clarity, before fieldwork. During the seminar, I found that some respondents connected the concept of security with the traditional state-centric paradigm and risk to financial risks. I clarified the context in which I used the two concepts and discussed them in as much detail as possible. Without the seminar, I would have spent more time clarifying the concepts while conducting the interviews⁵. The

⁵ I am from Nigeria, so I know a little bit about how people there communicate and how they understand different concepts. Although English is the official language, certain parts of the population view issues through the lens of their own language and culture.

interviews included questions on flood and drought, climate security issues, the determinants of climate security issues and climate change adaptation governance.

The quality of the semi-structured interviews

The semi-structured interview is based implicitly or explicitly on several philosophical assumptions. In this study, the semi-structured interview is based on constructivist epistemology. This type of interview is more sensitive to the contextual, historical, institutional, and strategic complexities embedded in risk communication, understanding and response. I found the semi-structured interview method appropriate for complex risks such as climate change that challenge traditional categories and theoretical principles. Semi-structured interviews enabled me to explore national, state, and local participants' feelings, beliefs, thoughts and experiences regarding climate change discourses and their influence on adaptation. This is because, despite international agreements and treaties, climate change adaptation is still a national and local practice that can be influenced by actors' perspectives on climate change discourses. The semi-structured interview allowed me to ask follow-up questions based on the respondent's answers. However, this method of data gathering has some methodological challenges.

The challenges of the semi-structured interview methodology

As a lone data-gathering method, the interview has been criticised as never simply raw but always situated and textual (Silverman, 2011 in Punch, 2014: 151). Hammersley (2008) points out that open-ended interviews that capture respondents' "genuine voice" are not experientially authentic truth. He notes that an interview is a constructed social product that emerges from its reflexive communicative practices and cannot reveal long-term attitudes or viewpoints that govern people's behaviour (Hammersley, 2008). According to Denzin and Lincoln (2018), interview data are not neutral tools since the interviewer creates the reality of interview situations to obtain answers. This implies that the interview produces situated understandings grounded in a specific interactional episode and often influenced by the personal characteristics of the interviewer, including race, class, ethnicity, and gender. Hence, a semi-structured interview gives much discretion to the interviewer and the interviewee. The discretion of the interviewer can affect the validity of interview responses. Conversational tone may prompt particular responses or inadvertently direct the answers to an unconscious process that is often difficult to avoid, even by a trained researcher (Iphofen & Tolich, 2018). Other issues that can affect the validity of an interview, according to Punch (2014), include the possibility of

interviewer bias and its effects, the accuracy of respondents' memories, people's response tendencies, dishonesty, self-deception, and social desirability.

Conducting a qualitative semi-structured interview in a multi-lingual country like Nigeria, with over 250 languages and diverse cultures, exposes me as a researcher to the methodological challenge of interpretation. This challenge manifested itself in different aspects of the research process, including constructing interview questions. As a Nigerian from the southeast region who has also lived in other Nigerian geopolitical regions, I admit that 'interview questions' may have reflected what Westwood (1992) refers to as the researcher's culturally informed interpretation of what is relevant and significant. The information and responses obtained through the interviews go through the researcher's perceptual process and can be misinterpreted (McDonald, 2000; Punch, 2014). There is also the danger of misunderstanding participants' opinions, due to cultural differentiation and the contextually sensitive ways in which they make sense of their world. Hence, the study analyses could have reflected what Schoenberger (1991) refers to as an interpretation of an interviewer's experience. However, I adopted a constructivist research approach, which enabled me to view the interview data as an authentic insight into people's beliefs, thoughts, and experiences. By adopting a constructivist stance, I view the interview data as a reality constructed by the respondent in response to the questions asked.

[Non-participant observation](#)

Table 2. Information about non-participant observation

Primary data	Issue observed	Location of NPO	Duration of NPO	Timeline of NPO
Non-participant observation (NPO)	<ol style="list-style-type: none"> 1. Situations relevant to the research questions 2. Actors' behaviour relevant to the research questions 	The non-participant observation took place in all 8 local government areas	One hour before the interviews	October–December 2017

The non-participant observation in this study has an important focus on situational context and is not a major data-collection methodology. I conducted non-participant observation every time I visited an interview site, especially one hour before the interview. Conducting non-participant observation one hour before the interview enabled me to debrief the observed situation and behaviour with interviewees. The non-participant observation was conducted in a manner that minimised the risk of participants being affected by my presence. I only took notes of the observed situations due to ethical issues and confidentiality agreements. I visited two federal

agencies, four state agencies and eight local government areas to conduct interviews. I also visited the federal capital territory four times to ask questions about adaptation policies, plans and projects. However, I only conducted non-participant observation in the eight local government areas, in order (a) to understand the differences between what the actors say and what they do and (b) to observe what the actors are doing and not doing.

In one instance, I witnessed the State Emergency Management Agency sensitising local community actors in one of the local government areas (LGAs) regarding flood incidents and the actions required for protection. The turnout was low, and the attendees seemed pessimistic about the flood warning from the state experts. When I probed, I found two important pieces of information. The first information is based on people's belief in the supernatural. Second, I learned that people do not trust information from state and federal government sources. In another instance, I observed the State Emergency Management Agency and a non-governmental organisation arrive with relief supplies for flood victims. The vehicle contained household supplies and food items. However, I did not see the victims of flooding at the local government headquarters. After a few minutes, about 50 members of the National Youth Corps came into the LGA headquarters, followed by the media. National Youth Corps members are college and university graduates taking part in the National Youth Service Corps programme for one year. Food items were distributed among the Youth Corp members in attendance. When I probed to know the reason why the victims of the flood were not invited, I learned that the local government staff, whose job it was to invite the flood victims, were not informed about the visit. I also observed that the Youth Corps members were not showing their caps and badges, for media coverage. Later that evening, I watched the distribution of food materials and how the Youth Corps members were referred to as victims of the flood on state television. I noted every observed incident and behaviour relevant to the study and included the relevant ones in the results. Using NPO helped me see some situations with my own eyes and kept me open-minded. At the same time, I might have misread some situations as someone watching from a distance and not part of the system.

4.2.2. Secondary data collection

Table 3. List and description of secondary data sources

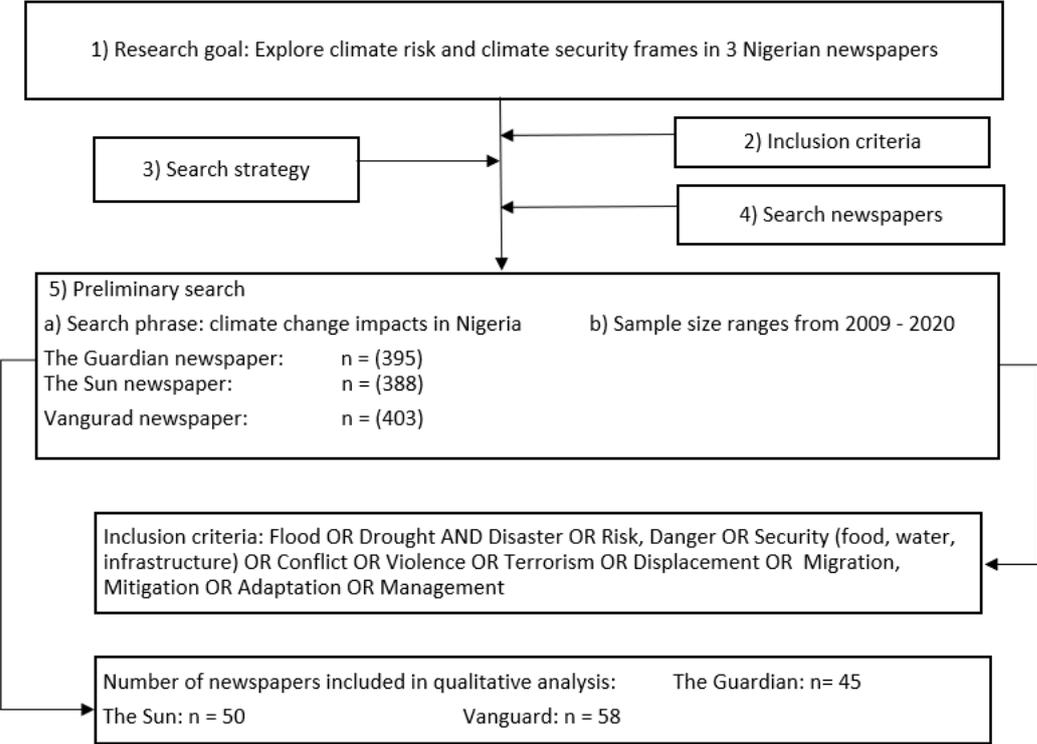
Secondary data	Data source	Number of data sources	Description of data sources
<ol style="list-style-type: none"> 1. Nigerian official documents 2. Nigerian newspapers 3. Elite speeches 	Nigerian official documents	7 official documents about climate change	<ol style="list-style-type: none"> 1. Nigeria's First National Communication (FNC) 2003 2. National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) 2011 3. Nigeria's Second National Communication (FNC) 2014 4. Nigeria's Intended Nationally Determined Contribution (INDC) 2016 5. Nigeria's National Adaptation Plan Framework (NNAPF) 2020 6. National Climate Change Policy for Nigeria 2021–2030 (NCCP) 2020 7. Nigeria's Adaptation Communication to the United Nations Framework Convention on Climate Change 2021 (NAC)
	Nigerian newspapers	3 Nigerian newspapers	<ol style="list-style-type: none"> 1. The Guardian (45 articles) 2. The Sun (50 articles) 3. Vanguard (58 articles)
	Elite speeches	5 elite speeches	<ol style="list-style-type: none"> 1. The General Assembly of the United Nations, High-Level Events on Climate Change, New York 2015 2. The 2015 United Nations Climate Change Conference, COP 21 /CMP 11, in Paris, France 3. The United Nations General Assembly 2016 4. The International Climate Change Summit in Paris 2017 5. Annual Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC) in Katowice, Poland, 2018

The secondary data include seven official documents, three newspaper articles, two documentaries, and five elite speeches. The official documents are: National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN); Nigeria's Intended Nationally Determined Contribution (INDC); Nigeria's National Communication Under the United Nations Framework Convention on Climate Change (NNC-UNFCCC); National Progress Report on the Implementation of the Hyogo Framework for Action (2013-2015) - interim drafted by the National Emergency Management Agency (NEMA); National Climate Change Policy Response and Strategy (NCCPRS); and Nigeria's National Adaptation Plan Framework (NNAPF). The two documentaries are based on the impacts of climate change in

Nigeria. The speeches were made by President Buhari from 2015–2020 at the United Nations General Assembly, Climate Change Summits, and Climate Change Conferences.

The three newspapers are: The Guardian, The Sun and The Vanguard. These are the most widely circulated and read newspapers in Nigeria, with a strong online presence and audience base. The Guardian has about one million print readers. The Vanguard has a circulation figure of about 130,000 (<https://www.vanguardngr.com/about/>). The Sun has a circulation printout of about 140,000 copies daily (Hotvibesmedia, 2021). The three newspapers are all Lagos-based and privately owned. The sample size for the newspapers is: The Guardian: 45 relevant articles; The Vanguard: 58 relevant articles; The Sun: 50. The sample ranges from 2009 to 2020. This is because the Guardian started online in 2009, the Sun started online in 2011 and the Vanguard started online in 2015.

Figure 7. Step-by-step guide to newspaper search and review



Document analysis

Document analysis as a qualitative method has been described as a process of evaluating documents in such a way that empirical knowledge is produced (Bowen, 2009). The decision to use document analysis in this thesis was strongly influenced by the weak constructivist theoretical framework adopted. Weak constructivism calls for methods that facilitate the

identification and analysis of frames. Document analysis in this study involves the careful reading and reviewing of government documents, newspaper articles and speeches. After reviewing the documents, I started analysing the linguistic construction of meaning and the narratives in the documents and speeches. To place the narratives within the security or risk frame, I studied the metaphors, catchphrases and rhetoric used in the message construction. This is because, as described in Chapter 3, frames make it possible to communicate a message with linguistic and rhetorical devices.

Document analysis is an efficient and cost-effective way of gathering research data. However, document analysis has both advantages and limitations in this study. One limitation is that the information included in the documents is static, rendering them unresponsive to follow-up questions. On the other hand, the static structure of the documents allowed me to read and evaluate them numerous times without changing the content. Some of the information included in the earliest official papers may not be accessible by observation or interview. Using existing documents provided access to information regarding climate change, since Nigeria joined the United Nations Framework Convention on Climate Change. The earliest official document in this study dates back to 2003 and reveals how climate change was conceptualised at the time. By reviewing the documents, I was able to familiarise myself with the study's setting, issues and core concerns regarding climate change as portrayed by the government, political elites, and the news media. The different documents provided background information and helped me track the evolution of climate change framing in Nigeria over the years.

4.3. Data analysis

I conducted a frame analysis of official documents, speeches, newspaper articles and interview data to uncover how actors use frames to construct climate change using rhetorical and discursive strategies. The rhetorical analysis emphasises the communicative purpose of a statement, text, or speech. According to Sameer (2017), rhetoric is a synonym for discourse, which seeks to explain the way in which language or other symbols influence an audience's thinking, feeling and actions. The discursive strategy is used to explore the cognitive processes and difficulties involved in the communication and comprehension of climate change discourse (Carvalho, 2005). I started by exploring the diverse and contested frames used in the climate change debate; then, I explored how the actors use frames to construct the issues of climate change, and then I explored the influence on adaptation options.

For analysis, data from the interviews, official documents, newspaper articles, speeches, and documentaries were collected, edited manually, and entered into NVivo 11⁶. NVivo 11 was chosen because it allowed me to code both noted interview and document files. The analysis started with the creation of a new project in NVivo, which I named "Framing in Climate Change Communication and Adaptation", and the opening of five source folders within the project for notes, transcripts, and documents. The source folders are government documents, speeches, newspaper articles, interview notes and notes from non-participant observation. After uploading the notes, transcripts, and documents, I read them to enable me to create the correct nodes. Since the analysis was driven by an inductive and data-oriented approach, I organised the data using nodes. I created nodes to house relevant excerpts or texts that are related to each other from the notes, transcripts, and documents. After I had gone through the excerpts and texts, I organised them into pre-defined themes, based on the three questions of the study. The themes used included climate-related hazards, impacts, vulnerabilities, exposures, threats, security (securitisation), climate risk, adaptation, communication, and collaboration. The empirical data contributed interesting insight into how frames used in communicating climate change conceptually influence how adaptation is understood and practised in Southeast Nigeria.

4.4. Ethical reflection and quality of the research work

This study was designed to make it possible to analyse and answer the research problem and questions. Before data collection, I embarked on a reconnaissance visit to the study country, to explain the purpose of the research. This was done by conducting a seminar to present the topic and useful concepts. The information obtained from the seminar was used to modify the research instruments and identify the target participants.

In a broad sense, gaining access to the research site is a big challenge, whether it is physical or cultural access. Originating from Nigeria did not make this easier, as I was seen as an outsider. However, knowing that research is a tool that can be used to improve things in Nigerian society was exciting and motivating. Nevertheless, my excitement waned in the first week of my stay in Nigeria. First, I understood that research into climate change adaptation is a political issue that requires approval from the Ministry of the Environment. This required submitting an

⁶ NVivo is a software program used for qualitative methodological research. It is useful in analysing texts, audio, video, interviews, focus groups, surveys and scientific articles. It is important to note that NVivo does not analyse data but was used as a data management package during the data analysis process.

interview request letter to the ministry to access interview material. After a month of waiting for an answer, I finally received permission to conduct research.

Expert interviews had been adopted and recommended as data gathering in a new research field such as the one that I embarked on (Meuser & Nagel, 1991; McEvoy et al., 2006; Otto-Banaszak et al., 2011). I adopted expert interviews since climate change adaptation is relatively new for researchers and policy communities in Nigeria. The notion of 'expert' refers to persons who usually have privileged access to information or are responsible for developing, implementing, or controlling solutions, strategies, or policies (Otto-Banaszak et al., 2011). The participants in this study are from various ministries and can be classified as experts in the issues of climate change and climate change adaptation.

The viability of expert interview data hinges on the willingness of the participants to be open with information. This is often difficult because gaining their trust is difficult, especially in an environment where their jobs are at stake. According to Hunter (1995), the power and ability of experts to protect themselves from intrusion and criticism make them "relatively unstudied" (Hunter, 1995 in Mikecz, 2012: 483). Civil servants at the federal, state, and local government levels distrust researchers and people who ask questions. I understood this as a reaction to the political nature of working for a government that is often not transparent. Given the political nature of the research topic, some participants were worried about their jobs, especially those in the public sector. Some participants claimed that saying something critical of the government or not popular could be detrimental and might make them lose their jobs, especially regarding a controversial issue such as climate change.

To prevent this methodological challenge, I discussed the importance of the research with participants before the interview. I negotiated with them, in order to create credibility and trust. I also held the interviews in the respondents' environment, listening to their stories and connecting what they said with their context (Creswell, 2007 in Mikecz, 2012: 488). Before the interview, I ensured that the questions were drawn from the themes and research questions. I also made sure that the questions were clear to the participants during the interview. Sometimes, I asked a follow-up question to ensure that participants had reflected on their answers. In other instances, I repeated the questions to ensure that participants gave an account they considered accurate. The participants were informed that their information would not be disclosed. Considering the large number of people working in each parastatal, I hope the information about the participants remains confidential. The interview was not recorded, but notes were taken.

However, a feedback method was employed, with participants being contacted to ensure that the written quotes represented their answers.

However, I understand that interviews are often more complex because questions can have alternative interpretations. To ensure the reliability of this study, I did my best to explain the research concepts and verify the research data honestly. I conducted a seminar to explain the concepts of climate change, adaptation, risk, and security. Within the local Nigerian languages, these concepts are not easily comprehensible. The respondents initially connected the concept of security with a military conflict and the concept of risk with financial risk. However, all the concepts applied in the study were explained during the seminar. To verify the primary research data, I employed secondary data. The use of documents from secondary data sources with similar information was helpful in cross-checking for accuracy. However, I find that most of the climate change information is based on different IPCC reports. This finding confirms that both risk and security framings used in Nigeria are mostly based on international climate change discourse.

While analysing the findings from the local governments in the southeast, I wanted to avoid producing an overly critical analysis of the federal, state, and local governments. Adaptation to climate-related issues is complex, given the urgency of other issues in Nigeria. The issue of uncertainties in the discussion of climate change also plays a role in poor adaptation strategies. The federal and state governments have contributed to climate change policies in many ways. Different adaptation actions at the local government level are functional to a certain extent, even though they lack strategic planning. The local expert cares about the safety of their communities, and they also work with the communities to ensure safety, especially during emergencies. Hence, my analysis has considered these issues to ensure fair representation.

4.5. Justification of qualitative methodology

The intent of the research is to understand the impact of climate change framings on adaptation policies and practices. Such intent fits with the philosophy of the interpretive paradigm and the strategies of qualitative methodology. Within the interpretive paradigm, there is a recognition that human beings can have multiple realities of the same issue by constructing meaning based on context, their experience, and frames of reference through which such an issue is communicated (Crotty, 1996). In line with this study, I acknowledged the qualitative process as messy, emergent, complex, and complicated. I recognised that, as a researcher and participant, I am incapable of total objectivity because reality is often constructed by subjective

experience (Erlingsson & Brysiewicz, 2013). I also acknowledge that the interview questions and the generated and interpreted findings are all value-laden. The lack of statistical data in qualitative research can impact its representativeness. However, I created an atmosphere in which the respondents could tell their stories and express their views directly on the topic of the study.

5. Results: The Impact of Security and Risk Framings on Climate Change Communication and Adaptation Processes in Nigeria

The central objective of this chapter is to present the findings based on the three main research questions. I will start by introducing the papers, their contributions, and the relationship between them. While the findings in the papers address the research problem, the second section of this chapter will give the research problem more specific treatment. This will be done by investigating three research questions. These are:

1. Why is security framing becoming more prevalent than risk framing in the Nigerian climate change debate?
2. How do the values in security framing influence the adaptation process in Nigeria?
3. How do the values and principles in risk framing influence adaptation in Nigeria?

5.1. Preview of the articles

This doctoral thesis contains the following papers:

1. Oramah, C. P., Pettersen Gould, K. A. & Olsen, O. E. (Submitted for publication and out for review) in *The Journal of Environmental Communication*). Effects of Risk and Security framings on climate change adaptation understandings: Assessing policies and strategies in Nigeria's climate crisis debate.
2. Oramah, C. P., Olsen, O. E. & Pettersen Gould, K. A. (2021). Assessing the impacts of the securitisation narrative on climate change adaptation in Nigeria. *Environmental Politics*, DOI: [10.1080/09644016.2021.1970456](https://doi.org/10.1080/09644016.2021.1970456)
3. Oramah, C. P. & Olsen, O. E. (2020). "Equity and Justice in Climate Change Adaptation: Policy and Practical Implication in Nigeria." *African Handbook of Climate Change Adaptation*, edited by W. Leal Filho et al., pg1767-1787. Springer International Publishing. https://doi.org/10.1007/978-3-030-45106-6_45
4. Oramah, C. P., Pettersen Gould, K. A & Olsen, O. E. (Submitted to *Local Environment: The International Journal of Justice and Sustainability*). The Role of Local Government in Climate Change Adaptation Process in Southeast Nigeria: Assessing the Impact of Contextual Factors.

5.2. Relationships between the articles

The connections between the articles are both conceptual and empirical. As stated in the methodology section, this exploratory study included conceptual and empirical analysis. This is because there is very little literature on the impacts of framing on climate change adaptation. Hence, while this study employed a wide range of theories, the focus has been on the empirical context. As shown in Table 4 in this section, findings from the conceptual analysis and empirical study have a common theme, in the sense that they explore different directions inherent in the influence of the climate change frame on the adaptation process. The papers are related, in the sense that Papers 3 and 4 set out to confirm the claim made in the first two papers.

The first two papers produce a conceptual foundation, while Papers 3 and 4 dig deeper, with empirical investigation.

Paper 1 is a background study in which we explored the frames of six policy actors' groups in the climate crisis debate and how the frames influence adaptation understanding, policies and strategies. The article identifies risk and security as the two main framings that affect adaptation processes in different scales, scopes, and methods. The risk framing emphasises uncertainty about the climate crisis and the implication of socio-political vulnerabilities. Risk framing accentuates an optimism that the climate crisis can be controlled through risk strategies, with a focus on adaptation based on predicting, analysing, evaluating, and managing climate risks at the national level. Security framing accentuates the link between climate change and climate security issues such as resource scarcity, conflict, and migration. Security framing also suggests pessimism about the controlling of climate change and gives adaptation a global dimension, by emphasising climate justice and environmental equity.

The second article is mostly conceptual and aims to verify the climate security claim made in the first article. This article investigates the securitisation processes, to determine the strength of such framing regarding adaptation policies and practices. The article indicates that security rhetoric has become common at international climate change summits, in the news media and in recent government documents and has attracted some adaptation instruments. However, practical adaptation is a complex decision-making process that requires the participation of relevant interest groups. The paper argues that people's level of vulnerability and adaptation to climate security issues is a function of deeper socio-political dynamics and processes that defy the political theatre of securitisation that occurs mostly at the international and national level.

The third paper is an empirical analysis of the implications of climate justice in local adaptation practice. Climate justice has become a popular concept, focusing on (1) how the impact of climate change is disproportionately distributed across communities, states, and regions, and (2) how the most vulnerable developing nations deserve support to meet their adaptation goals. Nigeria is among the most vulnerable countries to climate change, with the vulnerability to climate-related hazards being experienced mainly locally. This paper explores the principles of justice and equity in national adaptation policy and adaptation practices in eight local government areas in Southeast Nigeria. The article argues that some factors challenge the achievement of equity and justice in local adaptation practices. Those factors prevent the fair allocation of the resources required for local adaptation practices to the studied local government areas.

The fourth paper draws mainly from fieldwork conducted in Southeast Nigeria, to explore how contextual factors impact the role of the local government in climate change adaptation. This paper suggests that structural and socio-cultural issues complicate the role of local actors and their authority in the adaptation process. Regarding structural issues, the paper finds that governance structure has implications for how local actors participate in adaptation process. The paper finds that, in Nigeria, climate change institutions exist at the national and state levels but are lacking at the local level. We also find that the issues of trust and power relations are interlinked, making it challenging for people to acknowledge risk information from government agencies and experts. The local actors have more trust in their community leaders and religious leaders. In this paper, we suggest dialogue and deliberation as an effective communication strategy and the use of trusted sources in risk communication. We also find that cultural beliefs influence climate change awareness and adaptation behaviour. We suggest respect for local beliefs, which may help in more mutual dialogue and participatory adaptation processes.

Table 4. Relationship between the papers and their contribution in relation to the thesis

	Paper 1	Paper 2	Paper 3	Paper 4
Title	Effects of risk and security framings on climate change adaptation understandings: Assessing policies and strategies in Nigeria's climate crisis debate	Assessing the impacts of the securitisation narrative on climate change adaptation in Nigeria	Equity and justice in climate change adaptation: Policy and practical implications in Nigeria	Local Government Climate Change Adaptation Process in Southeast Nigeria – Assessing the Impact of Contextual Factors.
Level of analysis	Conceptual analysis, with the use of empirical data at the macro and micro levels (national, state and local government levels)	Conceptual analysis, with the use of empirical data at the macro level (national and state levels)	Empirical analysis at the macro and micro levels (national, state and local government levels)	Empirical analysis at the micro level (local government level)
Purpose of the paper	Background study to develop an understanding of how actors' climate change	Explorative study to confirm the influence of climate change	Explorative study to confirm the influence of equity and justice in local	Explore contextual factors that shape climate change understanding

	framing influences adaptation understanding in the Nigerian debate	securitisation on adaptation	adaptation in Southeast Nigeria	and climate change adaptation process from the local government and local actor's perspective
Paper's question	How do climate risk and security framing contribute to different adaptation understanding, policies and strategies?	What are the limits to urgent adaptation action even when a securitisation narrative is employed?	What is the perceived role of equity and justice regarding national adaptation policy at the federal level and adaptation practices in eight local government areas in Southeast Nigeria?	How do contextual factors impact the local government adaptation process in southeast Nigeria?
Contribution	Provides an overview of how climate change's risk and security framing influences adaptation understanding on different scales, scopes and measures	This represents the groundwork for my idea that climate change securitisation is a political rhetoric which has limited influence on adaptation, due to the exclusion of relevant audiences in securitisation settings	Systematises the theoretical idea that equity and justice, which constitute one of the arguments for climate security, are lacking at the local government level	Provides empirical evidence that local actors lack the knowledge required to understand climate change risks, the authority required to participate in climate change adaptation planning and resources required for practical adaptation implementations

5.3. Addressing the research questions

The three research questions that are at the heart of the research problem are implicitly addressed in Papers 1, 2, 3 and 4. However, in this section, I will present the results based on the research questions and indicate how they are addressed in the papers more specifically.

Why is security framing becoming more prevalent than risk framing in the Nigerian climate change debate?

The result of this study shows that risk or security frames in climate change discourses represent two interwoven strands of argument in the Nigerian debate. Each frame encompasses a wide range of positions in how they are used to communicate climate change issues. While the risk frame is used to present the primary issue of climate-related hazards, such as floods and droughts, the security frame is used to present secondary issues such as migration and conflict. I place risk framing within the contingency and preparedness discourse and security framing within the justice and protection discourse. Contingency and preparedness are about the management of present risks and preparation for future ones. Justice and protection are for risks that are already taking place and in a disproportionate manner. We find in Paper 1 that actors use uncertainty and vulnerability narratives to present the issue of climate change. In describing uncertainty, actors use cautious language such as "likely" and "possible", which are often linked to scenarios, projections, and climatic parameters. The way I see it, "likely" and "possible" have rhetorical characteristics that denote some elements of uncertainty and unpredictability. In Paper 1, we called this a "pessimistic stance". We connected pessimism to a lack of knowledge about certain issues of climate change, which can illicit people's unwillingness to address them. We also discuss in Paper 1 how uncertainty is used to discuss the global community response to the climate crisis. However, there is no uncertainty in the literature about the existence of climate change or its predicted future severe impacts. That is why we do not discuss how uncertainties might affect preparedness for climate-related issues in Paper 1. Instead, we discuss how uncertainty about future projections and scenarios could give policymakers optimism about their ability to control the climate crisis through risk management measures.

In Paper 1, when describing the impact of vulnerability in climate-related disasters, actors use language such as "contributing", to indicate that climate-related hazards are not the primary cause of climate-related disasters. The vulnerability narrative links climate-related disasters to contextual issues. I call this stance "optimism of control". In theory, hazardous events can translate into disaster risk when they interact with physical and socio-political vulnerabilities

existing in the Nigerian system. The vulnerability perspective is used to present climate change as a social risk, exacerbating the effects of the climate crisis in Nigeria due to poor development and instability. Within Nigeria, actors use the vulnerability narrative to present climate change as a social problem affecting the poor more, due to socio-economic inequality and marginalisation. Such a narrative is used to present climate change as an issue that can be prepared for and prevented with the right risk management tools.

In Papers 3 and 4, we situate what climate-related risks mean in Nigeria within complex socio-cultural dynamics. We establish that different actors in Nigeria have different understandings of climate change and the harm it might cause. While some actors believe that climate-related disasters are the result of supernatural forces, others believe that hazards and pre-existing vulnerabilities interact to cause climate-related disasters. We argue in Paper 4 that such disparities in understanding can influence people's perceptions of climate change. Therefore, there is a need to engage in dialogue with actors who attribute climate-related disasters to supernatural power, instead of dismissing such beliefs. Our findings indicate that all actors want an effective way of coping with climate-related disasters.

One significant finding in Paper 1 is that actors use the risk frame to designate climate-related disasters as local and national issues that can be influenced by structural and socio-cultural beliefs. In Paper 4, we discuss how Nigeria's existing exclusionary governance structure influences people's perception of climate change information and how an inclusive governance structure may have a positive result. We also discuss how socio-cultural beliefs about climate change could be overcome through improved climate risk awareness strategies. The strategies recommended include using credible sources to communicate climate change information. We recommended using respected community leaders for climate change information dissemination. We also argue that government agencies can be effective when they regain the trust of citizens and develop an effective two-way communication strategy that will encourage the participation of all people involved in the adaptation process.

I consider a shift from risk to security framing as a move from contingency to protection. In Paper 1, we find that the security framing, which is a recent development, uses alarmist language to designate climate change as dangerous and threatening. We discuss how the media and government representatives primarily use the security frame, which has a political perspective, to communicate climate change as a justice issue. The current popularity of the security frame, as discussed in Paper 1, might have been a reaction to the increasing tension

resulting from climate-related resource scarcity, conflict, migration, and other security issues in Nigeria.

The result shows that actors use security framing to present climate change as an issue imposed by outside forces that Nigeria needs to protect itself from. In Papers 1 and 2, we show how this framing is done by linking climate change to secondary issues. The rise in security framing in Nigeria has traction within the international trend, as these issues are already established on the global political agenda as climate security issues. This is why we state in Paper 2 that the securitisation of climate change in Nigeria occurs mostly in international settings, where an understanding of climate security logic is already established among the audience. However, we also observe in Paper 2 that securitisation occurs through channels of communication unavailable to vulnerable people in the local communities. Hence, awareness of the threat that climate security frames advocate is lacking in local communities. Despite the low awareness of climate change threats at the local level, we find in Paper 2 that security framing has given importance to environmental justice for the countries that have contributed least to the climate crisis and has encouraged international instruments and agreements. However, there are worrying trends in using security frames to communicate climate change in Nigeria's debate. In Paper 2, we find that security framing, which is mostly environmentally deterministic, often neglects Nigeria's socio-political vulnerabilities, which contribute to climate security issues. Even the justice issues highlighted in Papers 1 and 2 are only advocated at the international level but are not being implemented within Nigeria. In Paper 3, we find that the local communities are most vulnerable and affected by climate security issues. In Paper 4, we discuss how local communities should be included in climate change discussions and the adaptation process.

[How do the values in security framing influence the adaptation process in Nigeria?](#)

The findings in this study pointed out that certain issues in security framing affect the adaptation process positively and, in some instances, negatively. In Paper 2, two issues stand out.

- There is a considerable distance between the setting of climate crisis securitisation and adaptation practice.
- Climate security arguments complicate adaptation accountability and responsibility.

The main contribution of this work pertains to the first issue, which is what I regard as the paradox of securitisation in climate change adaptation. In securitisation theory, the setting is

very important because most securitised issues take place outside normal politics for a particular audience. However, as discussed in Paper 2, securitisation of the climate crisis takes place in international settings for the audience that is required to provide instruments for adaptation. Such settings have made it easier for Nigerian government representatives to attract funding. However, as established in Papers 3 and 4, the adaptation process requires a collaborative process between international, national, and local actors. This is because adaptation agreements occur at the international level, adaptation planning occurs at the national level, and implementation is a local practice. As part of my critique of the securitisation of climate change, we argue, in Paper 2, that policymakers should communicate climate security at the local level, especially to those involved with adaptation implementation. In theory, a securitised issue requires urgency of action, but as established in Paper 2, adaptation action in Nigeria is lacking, as the audience involved in implementation is left out of the securitisation process. It is also established in Paper 2 that the media, which are often used as channels of securitisation, are often unavailable to the local audiences that are most vulnerable to climate security issues. In Paper 2, we observe that the link between climate change and security issues is complex, and securitising actors often do not take their time to explain the connection, making it challenging for people to understand.

The second climate security issue discussed in this study revolves around the issue of accountability and responsibility. In Paper 2, we establish that adaptation has become a global good, as seen through the international security and justice lenses. Seeing adaptation through an international security lens has led to the creation of adaptation funds to support vulnerable countries that cannot adapt independently. In Paper 2, we argue that the international security argument is providing Nigeria with the support and funding it needs to protect itself from climate security issues. However, treating adaptation as an international security issue complicates adaptation practice at the local level. In Paper 2, we discuss how government actors attribute the blame for climate security issues to the international community, while neglecting their responsibility as regards adaptation planning and implementation. We also discuss how security framing presents climate security issues as only resulting from climate variability. Looking at adaptation through the lens of climate variability can lead policymakers to ignore the non-climatic factors that contribute to flood and drought disasters in Nigerian communities. In Paper 3, we state that the justice issue surrounding adaptation is mostly an international discussion. This is because, in Nigeria, the local government areas that are disproportionately affected by climate security issues are not included in the adaptation process. In Paper 4, we

discuss how the local government's exclusion from the adaptation process is limiting the local authority, role, and resources, as regards adaptation planning and implementation. Security framing increases the advantage of viewing adaptation through global socio-political inequalities, even though an underlying assumption of this thesis is that adaptation efficiency is dependent on the socio-economic and political dynamics of each country.

[How do the values and principles in risk framing influence adaptation in Nigeria?](#)

Given the uncertainty narrative, communicating climate change adaptation through the lens of risk can be a barrier. We argue, in Paper 1, that uncertainty in risk framing can affect people's perception of climate risk and negatively influence their behaviour when it comes to adaptation. Such a narrative can also give policymakers the illusion that nothing needs to be done. However, we find in Paper 1 that, despite the uncertainties, future climate change scenarios and projections can provide policymakers with the information required for adaptation plans and strategies. We also find, in Paper 1, that the transboundary nature of climate change and the uncertainty about the capacity of developing countries to manage the impact on their own have given adaptation a global dimension.

The risk lens is also formidable, given its tendency to look at climate-related disasters through the vulnerability narrative. In Paper 1, we discuss how the rhetoric of risk could give weight to socio-political, economic, and other systemic dynamics that interact to cause climate security risks. Such framing prioritises preparedness planning, resilience, and other risk management methods.

The finding in Papers 3 and 4 that I want to highlight is the importance of collaborative risk management strategies to ensure an integrated adaptation approach. The main observation in Papers 3 and 4 is that Nigeria's governance structure is exclusionary and negatively influences local adaptation practices. We argue that, unless a more conscious effort is put into setting up an effective governance structure that can encourage an integrated approach to climate change adaptation in Nigeria, strategic adaptation implementation at the local level will continue to lag. Paper 4 establishes that, in such a governance structure, the local government must be granted the resources and authority to lead climate change adaptation efforts in their respective jurisdictions.

In Paper 4, we highlight the importance of credibility when it comes to information sources, especially in Nigeria, where people link climate-related disasters to "Acts of God". We discuss

how information sources could impact people's perceptions of climate change and increase their adaptation efforts. We also argue in Paper 4 that citizens can overcome their inhibiting supernatural beliefs through deliberative communication and trusted messengers in climate risk communication. The ideas of deliberation and trust, which are significant in inclusive adaptation governance, are mentioned as important for the local government adaptation process, in Paper 4. Perhaps the biggest value of communicating climate change as a risk is the recognition that socio-cultural values enormously influence how people perceive and understand risk information (this is discussed in Paper 4). I thereby argue that, unless a more conscious effort is put into understanding socio-political and cultural dynamics that interact with climate-related hazards to cause disasters and crises, the gap between risk experts and laypeople will continue to exist, impacting adaptation efforts.

6. Discussion

In this chapter, I will discuss the findings, using the theories presented in Chapter 3. There are three objectives for this chapter. The first objective is to discuss how the security framing in climate change communication has evolved between 1994 and 2020 in Nigeria. I will show how actors have used security framing to transform climate change from national and local risks to national and international security threats. The second objective is to discuss how the issues in security framing are impacting the adaptation process. The third objective is to discuss how the values and principles in risk framing are influencing adaptation.

6.1. Moving away from risk to security framing in Nigerian climate change communication

Despite several reports suggesting that climate change is a threat multiplier in Nigeria, the national debate on climate security tends to deflect attention from non-climate vulnerabilities such as poor governance, poor development, and poverty that contribute to security issues. Some of the reasons for such deflection are psychological and cultural and related to how climate change is communicated through framing. This study has demonstrated that several actors in Nigeria use framing to communicate and transform the abstract scientific and political phenomenon of climate change into everyday reality (Snow, 2004; Schäfer & O'Neill, 2017). In Nigeria today, the claim of climate security has become popular among academics, the news media, and political elites. In some ways, the shift from risk to security framing is new in Nigeria. It can be attributed to increased security issues such as conflict, migration, food and water insecurity, and a lack of adaptive capacity. Securitising climate change in Nigeria has elevated the issue to high politics and given it the priority it deserves (McDonald, 2013). The use of a security frame might have been designed to alter attitudes about climate change while shaping social processes, decision-making and collective action towards climate change issues (Lecheler & de Vreese, 2019). This is in line with findings in previous studies, which indicated that framing could be used for ideological and governance purposes (Carvalho & Burges, 2005; Spence & Pidgeon, 2010). Theory suggests that securitised issues that border on existential threat are often treated as a priority and given emergency action (Buzan et al., 1998).

The risk frame, which developed in science over time, uses scientific language that can be jargonistic, probabilistic, technical, and confusing to the public (Fischhoff, 1995; Raile et al., 2022). Apart from technical language, the risk framing follows the longer-standing interest in using cautious language to communicate the science of climate change. Nigeria's debate about

climate change in the late 1990s and early 2000s was marked by cautious language, indicating uncertainties regarding climate change projections and systemic vulnerabilities in how climate change threats were described. The presence of uncertainty in the climate change debate, especially in government documents, can help explain why the Nigerian population lacks climate change awareness. Previous scholarship argues that uncertainty may affect policymakers' imaginings of climate risk impacts and challenge their imaginings of solutions (Mikoreit, 2017; Toivonen, 2022). Not imagining climate change as an urgent problem could also lead them to maintain an optimistic stance about their current behaviour (Morton et al., 2011). People can only become aware of climate change when the government realises its urgent implications and engages with the citizens, using effective communication methods. Therefore, the popularity of the security frame can be credited to the use of apocalyptic, war and urgency narratives, which bring the problem of climate change closer and with greater certainty to people's imaginations. Previous scholarship has also argued that frames shrouded in certainty are easier to understand than frames shrouded in uncertainty (Tversky & Shafir, 1992). Hinkel et al. (2020) view the apocalyptic narratives as transformative rhetoric that will provide a strong ethical argument that will help to bring climate change onto the political agenda and ensure the establishment of global agreements and principles.

Another reason for the growing popularity of security framing is the national, human, and international security logic often applied. Nigerian actors have successfully argued that climate change is leading to livelihood insecurity, inequality, poverty, conflict, and migration, to mention just a few issues. Arguing these issues through international security logic brings in the principle of equity. Following the equity argument, Nigeria has contributed the least to the issue of climate change and should be exempted from bearing greater suffering and responsibility (McKinnon, 2015; Otto et al., 2017).

6.2. How do the values in security framing influence the adaptation process in Nigeria?

Despite all the positives of framing climate change as a security threat, security framing has some limitations, especially as regards adaptation action in Nigeria. I will discuss three limitations of security framing in Nigeria:

- The lack of facilitating conditions in Nigeria's climate security framing.
- The distance between the setting of the securitisation of the climate crisis and adaptation practice.
- Security framing complicates adaptation, accountability, and responsibility.

In theory, the securitising move requires facilitating conditions such as grammar, the characteristics of the alleged climate change threat, the audience's perception of climate change and the framing power of the securitising actors (Buzan et al., 1998). Starting with the grammar, the use of threat, war, and apocalyptic narrative to communicate climate change can lead people to do more of what caused climate change in the first place (Roberto, 2016). In Nigeria, people are still polluting the atmosphere with non-renewable energy since the government is not providing alternative energy. The blame might not be placed on the citizens; however, the politicians framing climate change as a security threat are not doing enough to counter the problem and aid adaptation at the local level. The blame can also be placed on the narrative of war and threat, instilling fear in these policymakers' minds and leaving little room for them to operate (Toivonen, 2022). The idea of portraying climate change as a dangerous enemy is designed to help shape public perception and attitude on climate change issues. However, discourse needs to be relevant and context-specific to affect perception (Lecheler & de Vreese, 2019). This is because the link between climate change and security issues is not linear, making the use of security metaphors a nightmare for many. Moreover, climate security issues such as food security and migration bear little resemblance to military threats or external dangers that can be fought with guns and other weapons (Buzan et al., 1998).

Regarding audience perception, the finding indicates that Nigeria's climate change securitisation often occurs at the international level. The audience in the international setting agrees that climate change has catastrophic consequences; hence, Nigeria has attracted some adaptation projects. However, the audience, at the grassroots level, is often not aware of how climate change causes security issues in Nigeria. The framing power of the Nigerian securitising actors is quite effective at international summits and conferences. However, securitising actors need more framing power within Nigeria, due to the contextual moderating variables under which security framing occurs, such as corruption, the poor credibility of Nigerian political elites, and people's lack of trust in the system (Lecheler & de Vreese, 2019).

In securitisation theory, the setting and audience play significant roles. Despite the importance of setting and audience for effective adaptation action, this thesis finds that, in Nigeria's climate change securitisation process, the local audience is often excluded. Securitisation takes place in an international setting in front of an audience that can provide financial instruments for adaptation. Despite international adaptation funding, implementation has been lacking in Nigeria. This is because the international audience is not involved in adaptation implementation. Adaptation is a local practice, meaning that local audiences are supposed to be

involved in the securitisation process. Without involving the local actors, the attraction of adaptation funds will not be enough to yield adaptation actions at the local level. Another problem with the securitisation of climate change is that the climate security argument is divorced from other traditional security problems in several aspects. This is because, while other traditional security issues are accorded high politics and emergency measures, climate change issues are still within the realm of normal politics, with a risk that seems to be in the future.

Security framing may be compromising accountability and responsibility in Nigeria. International security framing, which aspires to justice and the use of international instruments to ensure fairness, might make governments in countries like Nigeria neglect their responsibility (Oramah et al., 2021). Security framing necessarily evokes dramatized and reductionist tendencies, where the developing countries are presented as needing help with adaptation and where this help is always positive. Such beliefs often create specific yet fundamental worlds of trouble. The justice principle is positive, as it is meant to help countries that have contributed the least but are vulnerable with low adaptive capacity. However, Fiskio (2012) has argued that security rhetoric is often used to justify the need for authoritarian policies. In line with Fiskio, I argue that security discourse follows the same principles as colonialism by creating an extremely efficient apparatus for producing powerlessness and passivity in developing countries such as Nigeria with regard to the adaptation process. Depending on developed countries for adaptation will justify and broaden the scope of external social control regarding an issue that should be carried out at the local level. In reality, the securitisation of climate change has led to policies that are more political than practical and are naturally bound to amount to rhetoric stored away in hardcopy and electronic PDF documents rather than executable actions. However, climate security framing can result in practical adaptation if the ethos guiding security construction is centred on local realities and the inclusiveness of relevant actors.

6.3. How do the values and principles in risk framing influence adaptation in Nigeria?

In a world where people's actions are expected to contribute to effective adaptation, relevant audience acceptance of climate security framing and subsequent adaptation action rests on inclusive participation. This goes beyond using alarmist language to provide information about climate security. As Dryzek, Norgaard and Schlosberg (2011) point out in their analysis, providing only information has little impact on behaviour, and trying to instil fear about

possible impacts using threat language is also counterproductive. This study argues that alarmist language has been ineffective because some people do not perceive the threat of climate change as imminent. In Nigeria, where the security challenges of climate change constitute international climate change speeches, urgent action regarding adaptation is lacking at the national and local levels. I argue that framing climate change as a risk acknowledges that individuals filter risk based on their cultural and socio-political viewpoints, which helps them weigh risk options against available solutions.

However, there are barriers to risk framing, especially as regards uncertainty. Uncertainty can have a negative influence on people's behaviour when it comes to adaptation. This is because people's aversion to uncertainty has the potential to undermine effective adaptation action (Morton et al., 2011). Uncertainty can affect people's perception of climate risk and cause them to question how they could do anything about it (Milkoreit, 2017; Toivonen, 2022). Milkoreit argues that it will be challenging to imagine adaptation solutions to a problem they are unaware of in their subconscious (Milkoreit, 2017). Other scholars argue that uncertainty can create a "psychological distance" from the climate risk, which can decrease the likelihood of people coming to terms with the reality and implications of climate change and subsequently reduce their support for adaptation (Lorenzoni & Pidgeon, 2006; Newell et al., 2014).

Studying adaptation through risk is about the systems and frameworks that support the decision-making process. In mapping the value of risk framing on adaptation, this study finds that contextual factors where climate security risks are experienced play a considerable role in the adaptation process. Such factors include societies' pre-disaster conditions and cultural, social, economic, and political contexts (Dekens, 2007).

In Nigeria, the mentioned factors influence the inclusive adaptation process. Other factors include the governance structure, the existing political and socio-cultural factors, religious beliefs, and stakeholders' knowledge of and trust in climate risk information. Awareness and perception of climate change are significant factors in local actors' participation in the adaptation process. Adapting to climate change becomes challenging without consensus knowledge and the understanding of climate risk. This study highlights the need for coordinated strategies that reflect the dynamic nature of the climate change experience and adaptation process.

However, the reality of coordinating the adaptation process among relevant stakeholders is far from ideal. The lack of coordinated adaptation action is attributed to Nigeria's governance

structure, which excludes local actors from participating in essential issues. Such exclusion influences power relations when it comes to the adaptation process. This thesis argues that the principle of inclusive adaptation will enable the most vulnerable in the local communities to communicate their interests and needs and ensure that such needs are included in adaptation plans. Risk framing also recognises the importance of inclusive risk communication, where the sender and receiver of framed information are constantly engaged in context-specific dynamic meaning-making (Carvalho & Burgess, 2005).

7. Concluding Remarks

This chapter comprises the conclusion of the study and a discussion of its contribution and limitations, as well as an ethical reflection.

7.1. Conclusion

In this study, I find that our conceptual understanding of climate change adaptation is increasingly moving towards an understanding, incorporating climate justice, global responsibility, and urgency in favour of a climate security framing. The climate security framing is born of the idea that security issues such as resource scarcity, conflict and migration result primarily from exposure to climate-related hazards and disproportionately affect vulnerable developing countries. This study finds that, while climate security has achieved unprecedented prominence in the climate change debate, the security framing remains less significant in adaptation action.

For adaptation, it is necessary to draw on a risk frame of climate change that highlights the barriers to adaptation action. Effective adaptation hinges on inclusive communication and decision-making that consider the contextual vulnerabilities of those exposed to climate-related hazards. I discovered that a conceptual understanding in which politics takes precedence over pre-existing vulnerabilities hinders the response to adaptation. Climate risk framing exposes the significant effects of contextual issues, such as exclusionary governance structures, cultural beliefs, religious practices, social and political exclusion, and credibility and trust, that influence local adaptation processes.

The media, politicians, a few government documents, and federal and state participants widely employ the climate security frame. Few media outlets, government documents, local actors, NGOs, and research institutions support the climate risk framework. However, it has remained a powerful frame within the public debate in Nigeria. The influence of both frames on climate change can be traced to how they construct climate change issues. Climate risk uses cautious language to construct climate change as an issue with uncertainty, complexity and ambiguity that will interact with non-climatic issues to cause danger. In contrast, climate security constructs climate change as an existential threat, endangering human, state, and international security, using the language of war.

The influence of both frames on adaptation can be traced to the contingencies and political responses to climate change adaptation. Findings revealed that many political speeches and

media texts show security concerns about climate change. Media texts did well to address the problem and suggest an adaptation solution. While media frames can be seen as mainly for awareness and to hold the government accountable, political speeches are used to apportion blame, ask for adaptation support, and avoid government responsibility. Participants from the federal and state agencies were concerned about climate security issues but thought that adaptation was the developed nations' responsibility. Participants from NGOs, research institutions and local government areas have acknowledged the implication of socio-political factors on climate security issues. A far smaller proportion of respondents, especially at the local level, plans to include adaptive activities in their strategic plan. However, adaptation to climate change presents new challenges, requiring new tools. These tools need to be improved in terms of institutional and human resources, especially at the local level.

The imbalance between rhetoric and action is present within government documents and political speeches purporting inclusive adaptation governance, while national adaptation plans lack local knowledge of climate change problems. The study revealed that Nigeria had instituted new policies and plans of action to implement adaptation projects, but there were no local adaptation institutions. The lack of local resources has made it challenging to implement adaptation projects at the local level. While some of the projects are implemented, especially as regards erosion, others are yet to be accounted for. Without practical adaptation at the local level, the issue of fairness and justice in security framing is less practical. The imbalance between rhetoric and action was even more significant within the political sphere. Government officials purported to offer leadership on climate change adaptation, while their policies lacked practical merit. The government may deflect criticism of its failure to address the security issues in the country by attempting to shift attention to climate security. However, this effort has largely been unsuccessful, with some respondents constructing a government declaration of climate security as a diversion tactic.

Due to the settings and audience where climate security claims are made, climate security has gained popularity and attracted adaptation funding to Nigeria. However, so far, little action has been taken to address the climate security problem at the grassroots. Food, water, and infrastructure insecurity resulting from flood and drought, as well as Boko Haram insurgency and herders versus farmers conflict, continue to grow. In the southeast, people are still losing their livelihoods and places of residence to flood-related disasters.

The debate about what should be done to address climate change adaptation was contentious among the respondents. The federal and state government respondents remain hostile to

addressing climate change adaptation as a national and local responsibility. In contrast, the other respondents actively seek to engage in adaptation through national policies and local actions. Despite a few federal and state government participants arguing that existing vulnerabilities contribute to climate security issues, all state and federal respondents rejected national responsibility in favour of global adaptation responsibility. Depending on the global community for adaptation may solve the problem of equity and justice. However, it may be contributing to passivity and powerlessness on the part of the government as regards the adaptation process that should be carried out in the local communities.

7.2. Implications and contributions of the study

The research found that climate security and climate risk frames played a crucial role in shaping Nigeria's climate change adaptation debate. The two frames constructed the issue in dramatically different ways. The climate security framing presents climate change as a serious security threat. The fact that climate change discussion achieved unprecedented prominence, with a high level of political concern, government attention and media attention, can be seen as a success in the rhetorical framing of climate change. However, the security framing of climate change was less successful in translating into substantive adaptation action or instilling a sense of urgency about climate change adaptation.

This study found that securitisation occurs in settings often unavailable to the general public, with narratives that are not relatable to the general audience. Climate security framing can only impact adaptation if the process is made available to all relevant audiences, especially the vulnerable audiences in local communities.

On the other hand, climate risk exposes the underlying issues that influence adaptation, such as participation and trust in decision-making. Issues influencing local actors' authority and role in the adaptation process include religious belief, climate change awareness and understanding, political exclusion and poor communication strategy. Acquiring adaptation funds will yield fewer practical results until these issues are fixed. This thesis contributes to the scholarship on climate change communication, adaptation, security, and risk in four ways.

- A. First, by providing an analysis of the security and risk frames, this thesis makes an original contribution to the literature examining the role of frames in the climate change debate in Nigeria.
- B. The thesis contributes to the scholarship by illuminating the imbalance between security and risk in rhetoric and adaptation action.

- C. The thesis contributes to the scholarship on the role of inclusive adaptation governance in Nigeria. By providing an analysis of the factors that influence inclusive adaptation, such as trust in climate change information and deliberative communication, this thesis contributes to the contextual nature of adaptation governance.
- D. The thesis makes an empirical contribution to the scholarship on the role of actors, language, setting and audience in the securitisation process, especially for a complex issue such as climate change adaptation.

7.3. Limitations of the study

One limitation of this thesis is that it only examines expert respondents working in the public and private sectors at the national, state, and local government levels. There is the potential to extend the analysis to several top government actors, political elites, and the public. To examine the impact of the political frame on adaptation policies and practices, the political debate on climate change should be investigated. Furthermore, the vulnerable actors at the community level, who were not included in this study, should be examined, to explore the impact of security framing on the public adaptation debate. The second limitation of this thesis is that it examined one country. Although vulnerability depends on the context, community and nation, climate security risks have an international character. A cross-national study will contrast similarities and differences, to distinguish between national-specific and universal behaviours and practices. Hence, a comparative or cross-national analysis will contribute to international adaptation policy planning.

8. Future Directions

This thesis highlights several possibilities for future research. Despite the overwhelming scientific evidence that climate change is a security threat multiplier in Nigeria, climate change adaptation lacks practical urgency. Given the seriousness of climate change and the urgent need for action, it is crucial to study how ordinary people can connect scientific information with their cultural and religious beliefs. Scientific information is best received in polities that foster the free flow of ideas and information, while culture and religion rarely provide an environment for the free flow of ideas. Hence, in certain contexts, especially in Nigeria and other developing countries in Africa, where religion and culture influence people's beliefs, disseminating scientific information will require open and deliberative communication. Consequently, research into Nigeria's adaptation limits should explore more measures to prevent religion and culture from interfering with free and open discussion of the recurrent challenges of climate change.

It is also essential to determine what the political elites mean when using security rhetoric. Such knowledge may disclose issues that constrain effective responses. As such, there is a need for future research to investigate the issues that prevent security rhetoric from translating into action from a political and practical point of view.

Furthermore, this study underscored the need to move from rhetoric to action in climate change adaptation. As a result, additional studies should be conducted to determine how adaptation might be made more actionable by mobilising and motivating the local population.

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Appendix A: Interview Request

Centre for Risk Management and Societal Safety
University of Stavanger
Date: August 10th, 2017

Dear Participant,

REQUEST FOR INTERVIEW.

I am a researcher at SEROS (Centre for Risk Management and Societal Safety), Department of safety, economic and planning, University of Stavanger. I am currently carrying out a research work titled “The securitization and risk framing of climate change: a study of climate change adaptation in Nigeria”. The project will involve the participation of stakeholders at different level of government in Nigeria. However, there is a special focus on the local stakeholders at local government areas in the southeast Nigeria. The attached semi-structured interview questions is to elicit necessary information from you. Kindly go through before the interview is conducted. You are free to omit any question on the time of interview. Please be assured that all information that you provide will be treated confidentially and anonymously.

Note: Your participation is voluntary and you are free to withdraw anytime.

Thank you.

Yours faithfully,
Chinwe Oramah
PhD Candidate University of Stavanger, Norway.

Appendix B: Interview guide

Introduction: I/We appreciate the time you have taken to take part in this interview. The data we will collect is only meant to identify tendencies and not you as individual. Note that due to anonymity, I will not be asking for personal information, but I will take note of interview answers and will be using this as a quote where applicable.

Background information

- Can you briefly explain your job position?
 - your role
 - how many years you have been in your current position.
- Can you explain your role in climate change adaptation?
 - Your role in flood management
 - Your role in drought management
 - Your role in any other management activity you consider adaptation.

Construction and understanding of climate change.

1. Can you describe what you understand by climate change?
 - How are you getting information about climate change?
2. Do you think the people are aware that climate change is taking place?
 - If the answer is yes why and if no why?
3. Where do you think people get information about climate change?
 - Can you explain what you think about the channel of information?
 - Can you explain what you think about the language of climate change information?
 - Is climate change information effective (if yes how and if no, why?)
4. Do you think that climate change is a major problem?
 - If yes, why? and if not why?
5. Do you think that climate change is causing security problems such? Give reasons for your answer.
 - Scarcity of water
 - Scarcity of food or other resources
 - Infrastructure damages
 - Conflict or violence
6. What do you understand when they says that climate change is a security challenge?
 - The government
 - The politicians
 - The media

- Other experts
- 7. Do you think that security challenges will cease if climate change cease?
 - If yes why and if no why?
- 8. How do you think politics is affecting climate change?
 - the way people talk about climate change.
 - The way people receive information about climate change.

Rational for local government adaptation process

1. Do you think flooding and drought are increasing in Nigeria?
 - If yes, why
 - and if no why?
2. Can you describe the consequences of flooding and drought in this local government area?
 - Describe the people mostly affected by flood and drought.
 - Why do you think these people are most affected?
 - What do you think can be done to avoid huge losses during flood?
3. Why do you think flood and mild droughts are having major consequences?
 - In this local government
 - In this state
 - In Nigeria
4. What do you understand by climate change adaptation?
5. Describe the adaptation process and practices you are aware of or have participated in.
 - The role of local people in adaptation process
 - The role of your department or ministry
 - The role of local government in adaptation process
 - Describe the corporation between the local government, state and the federal government.
6. Who do you think should be responsible for adaptation?
 - Planning and implementation
 - Paying for the cost of adaptation
7. Can you describe the corporation between the local government, the state and the federal government in adaptation process?
 - Do you think there is fairness when it comes adaptation here?
 - If yes why and if no why
8. Do you think the global attention given to climate change is affecting the way adaptation is planned and practiced in this country?
 - If yes how
 - and if no why
9. Where will you place development issues in comparison with climate change challenge?
 - in this area (communities and local government)).
 - in Nigeria as a whole?
10. What do you think is the biggest challenge with climate change adaptation her and in Nigeria as a whole?

PART 2

**Article 1: Effects of Risk and Security framings
on climate change adaptation understandings:
Assessing policies and strategies in Nigeria's
climate crisis debate.**

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Article 2



Assessing the impact of the securitization narrative on climate change adaptation in Nigeria

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Assessing the impact of the securitization narrative on climate change adaptation in Nigeria

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ABSTRACT

In Nigeria, the threat posed by climate change is leading policymakers and the media to frame climate change as a security threat that warrants support for adaptive actions. We draw upon securitization theory to examine how security narratives affect climate change adaptation. Using primary and secondary data, we find that although securitization arguments are easily identified in climate change policies and action plans in Nigeria, the implications of securitization for adaptation policy and practice are harder to discern. We find that adaptation is not as urgent a policy as would be expected from the logic of securitization. The transformation of security framing into urgent adaptation actions appears difficult because there are no urgent adaptation measures. We also find that people's level of vulnerability and adaptation to climate change is a function of deeper socio-political dynamics and processes that defy the political theatre of securitization.

KEYWORDS Climate security; securitization; climate change adaptation strategies; vulnerability; Nigeria

Introduction

As politicians and policymakers grow more concerned about the impacts of climate change in developing countries, they are employing narratives that are more effective in attracting adaptation support (Peters and Mayhew 2019). They use narrative and framings, which specify how social and political actors rely on interpretation to understand and respond to risks (Reese 2001). In Sudan, Nigeria, and other African countries, resource scarcity, forced migration, and conflicts are framed as climate security issues that can lead to national insecurity with broader global implications (Mazo 2009, Nwauba 2018). According to Brzoska and Frohlich (2016), framing migration and violent conflict as climate security issues in Africa is often done with limited evidence.

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Such framings are enabled by what Hulme (2011) describes as climate reductionism, in which climate change is regarded as the primary determinant of system behaviour or response.

This does not mean that climate change will be irrelevant for future patterns of migration and violent conflict. There is evidence that environmental degradation and resource scarcity can contribute to the likelihood of violent conflict when coinciding with other factors such as ethnic polarization, weak political structures, and a low level of economic development, but climate change alone is not causing violent conflict and migration (Brzoska and Frohlich 2016). However, the way an issue is framed can have a significant impact on which solutions are seen as plausible. Bettini (2013) has highlighted, for example, the use of security narratives to motivate social contracts that underpin developing countries' demand for assistance due to their higher vulnerability and lower adaptive capacity. That developing countries are entitled to adaptation support has become the globally dominant view to ensure social, ecological, and economic justice for those developing countries that have contributed least to climate change but are likely to be most affected by it (Saraswat and Pankaj 2016). This is because the unequal distribution of negative climate change impacts and low adaptive capacity is seen as a hindrance to development that risks turning into a humanitarian catastrophe that will lead to resource scarcity and loss of livelihood (Bettini 2013).

Although the precise links between climate change and insecurity are unclear, these insecurities are projected to be particularly severe in vulnerable countries experiencing political and economic challenges, and where there is a failure to address economic loss from disasters and resource scarcity, service delivery, and marginalization of communities (O'Sullivan 2017).

Nigeria has been forging the concept of climate security both at the domestic and international levels through media, official documents, and political speeches. The use of a climate security narrative in Nigeria is appropriate because climate-related issues also exacerbate the rates of desertification, erosion, resource scarcity displacement, and conflict (Olufemi and Samson 2012, Folami and Folami 2013, Haider 2019). One example of climate security framing in Nigeria is the recent connection between climate change and the terrorist insurgency around Lake Chad Basin. Rainfall variations and desertification caused by climate change around Lake Chad is undermining the welfare and livelihood of people who depend on Lake Chad. Moreover, the situation offers the Nigerian Islamist Insurgent group 'Boko Haram' ideal recruitment conditions, which in turn has increased insecurity in the region (Agbiboa 2017, Vivekananda *et al.* 2019, Owonikoko and Momodu 2020).

Another example is the connection between climate change and the growing conflict over increasingly scarce fertile land due to desertification between the Northern Fulani herdsmen and farming communities in Southern Nigeria that has claimed many lives and loss of property (Nte 2016, Oke and Olawale

2019). As the Fulani Herdsmen experience droughts and desertification, which affects pasture and water availability for animal consumption for their cattle, they become compelled to move from northern Nigeria down south. Unfortunately, this migration often leads to the destruction of farmlands and agricultural products in the host communities, causing conflicts and loss of lives of those involved in the conflicts.

Through employing a securitization narrative, adaptation issues evolve beyond national politics to global politics where vulnerability is seen as resulting specifically from climate change (Dupuis and Knoepfel 2013). Such a framing separates climate security issues from existing social vulnerability. This separation is misleading as it ignores socio-political issues that lead to disasters and the inadequate capacity to adapt to these disasters as an essential factor in the gradual process of securitization.

Thus, a critical yet under-researched area is the implications of applying securitization narratives to non-traditional security issues, such as climate change adaptation, where vulnerability based on socio-political dynamics are hard to ignore. In this article, we examine two questions. First, we ask: how is Nigeria framing climate change as a security threat? Second, we ask: what are the limits to urgent adaptation action even when a securitization narrative is employed? We organize the paper as follows. First, we explore the theoretical connection between securitization and climate change adaptation. Then, we analyse the impact of using securitization narratives on climate change adaptation in Nigeria. Finally, we assess the challenges of a securitization narrative on climate change adaptation more broadly.

Materials and method

The study location is scattered across the federal and state levels in Nigeria. We selected 30 experts using purposeful sampling at the federal parastatals, two states in the southeast, NGOs, and research institutions. The informants are distributed across the following state agencies: the State Ministry of Ecology, Environment, and Climate change; the State Ministry of Works; the State Emergency Management Agency and The Federal Ministry of Environment; and the Department of Climate Change. The experts also represent NGOs and academia. We selected 10 federal government experts (FGE) from the Federal Ministry of Environment, five Anambra state government experts (ASGE), and five Enugu state government experts (ESGE). We also selected four NGO experts (NGE) from two NGOs and six research institute experts (RIE).

We adopted a qualitative methodology, using primary and secondary data for macro-micro analysis. The micro-level analysis provides an overview of security narratives and how it affects adaptation in Nigeria. The macro-level analysis provides an overview of how the securitization narrative in Nigeria

intersects with global politics on climate change. The primary data consists of semi-structured interviews conducted between October 2017 and January 2018. The secondary data consist of official documents, newspaper articles, conference speeches, scientific articles, NGO documents, and policy documents. Specifically, to understand how climate change is framed as a security threat in Nigeria and how such a framing is affecting climate change adaptation, we examined the following documents: National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN); Nigeria's Intended Nationally Determined Contribution (INDC); Nigeria's National Communication: Under the United Nations Framework Convention on Climate Change (NNC-UNFCCC); National Progress report on the implementation of Hyogo Framework for Action (2013–2015)- interim drafted by National Emergency Management Agency (NEMA); National Climate Change Policy Response and Strategy (NCCPRS); and Nigeria's National Adaptation Plan Framework (NNAPF).

We used the feedback method to confirm the informants' point of view by presenting our preliminary results in some of the informants in a seminar. To maintain the anonymity of the informants, we invited both the interviewee and other experts. We also obtained new information during the seminar and added this information to our results. We adopted an inductive and data-oriented approach, seeking to identify and categorize strategies as they appear in the data. The data was then uploaded and coded using Nvivo 11.

Theoretical perspective: securitization theory and climate change adaptation

We employ securitization theory to understand the link between a security narrative and climate change adaptation in Nigeria. A security framing was initially employed in climate politics to encourage countries to address climate change through mitigation. However, as climate impacts continue to increase in developing countries without any consensus on mitigation criteria, the security narrative is increasingly used to frame climate change adaptation.

Securitization theory challenges the traditional narrow military aspect of security to include economic, social, and environmental issues that can lead to a security issue. This theory argues that security threats are socially constructed through the intersubjective process between securitizing actors and audiences (Wæver 1995, Buzan *et al.* 1998). The Copenhagen School of securitization initially views the state as the referent object and places securitized issues beyond normal politics through discursive practices and limited to state actors in authority. With the widespread nature of trans-boundary risks, the view of the referent object has been extended from the state to other referent objects at other levels (Buzan and Hansen 2009).

According to Buzan *et al.* (1998) securitization is the speech act where a securitizing actor designates a threat to a specified referent object and declares an existential threat implying a right to use extraordinary means to fend it off. They argue that, an issue is securitized if the relevant audience accepts this claim, which grants the securitizing actors the right to use emergency measures they deem appropriate. They further argue that some issues presented as security issues, end up being politicized due to the lack of extraordinary measures that accompany such claims.

Guzzini (2000) suggests that intersubjective rules and norms guide how actors designate security threats. Intersubjective belief is often activated through language, which operates as a mediating and communicative instrument (Côté 2016), and established through social and group interaction with such power as to be able to facilitate interpretation, create social reality, and inform behaviour (Guzzini 2000). Hence, Guzzini (2011) warns against the mistake of assuming what securitizing actors present as security is, in fact, a geopolitical reality.

The securitization approach outlined above has attracted some criticism that raises an important dilemma of securitization. From a sociological standpoint Balzacq *et al.* (2016) argue that securitization should not be reduced to speech acts only, as one must consider other conditions. One condition is the textual meaning as well as the constitutive language through which the plot of security is constructed successfully. Another condition is the social capital that may be cited as supporting evidence of a threat, the context in which meaning is socially produced and understood, as well as the audience, which can contribute to the success or failure of the securitization process. Floyd (2015) argued that the requirement for securitization success is not solely on security practice. Securitizing actors might consider their responses as a security policy even without addressing a threat with extraordinary measures. Others argue that securitization often takes place behind closed doors (Neal 2009), and in more common routinised day-to-day practice rather than through specific exceptional speech acts and events (Booth 2005, Bigo 2008, McDonald 2008, Salter 2008). However, other scholars have warned against the performative role of security, mostly when it is employed as a political technology to re(order) society, preserve power relations and oppress or exclude some groups or opposition (Booth 2005, Huysmans 2006). This is because securitizing actors often define threats with legitimate authority, following a circular logic of defining a threat to counter such threat politically and practically (Warner and Boas 2017).

Applying securitization to an environmental and political issue such as climate change adaptation has its challenges as climate security lacks an intentional external enemy that can be defeated through high politics (Buzan *et al.* 1998). To overcome this challenge, Corry (2012) suggested the use of risk mechanism to overcome the indirect link of climate change to security issues. He argues that the language of risk legitimates

taking measures to reduce the harm directed to the referent object as risk issues are more conducive to being managed, in contrast to being eradicated, with a premise built on the precautionary principle.

The objective of securitization is to protect a referent object which is often the state. However, in climate security, von Lucke *et al.* (2014) identified three referent objects, territory (threat to the territorial boundaries of a state), individual (threat to human livelihood and survival) and the planet (threat to the ecosystem and the planet as a whole). Different referent objects, in contrast to only the state, creates a paradox for climate security (Balzacq *et al.* 2016). Günay *et al.* (2018) argued that one of the paradoxes lies in the increasing reliance on ecologically destructive methods of production, which has a socio-ecological effect seen through environmental deterioration that threatens the industrial economy that it underpins. Another paradox with having the state as the referent object in climate change is due to the global nature of climate security. National security framing suggests a micro-level analysis where climate change is directly responsible or will aggravate existing problems such as resource scarcity, social tension, and state stability (Rashid *et al.* 2011). Such a framing demonstrates an assumption that the nation-state plays a crucial role in governing adaptation as the national government is central in providing adaptation policies and practices. National security is the ability of the country to pursue the development of its internal life without serious interference from foreign powers (Ikenberry and Slaughter 2006).

Thus, the state-centric climate security framing fails to account for justice and equity concerns in climate change adaptation, where states might not be capable of protecting themselves in isolation, especially for those countries that have contributed minimally to climate change but are most impacted. The issues in state-centric climate security have led to the adoption of international climate security. International climate security centres on the global binding obligation to deal with both the causes and effects of climate change with a sense of urgency (Khan 2014). Such a framing demonstrates an assumption of governing climate risk beyond the state (Bulkeley *et al.* 2012, Dalby 2013) and leads to global financial accountability for adaptation, especially for countries like Nigeria that are expected to be hit the earliest and hardest, although this financial accountability is not yet binding (Khan 2014). Despite all the value of international institutions in climate change issues, Mearsheimer (1994) argues that international institutions have minimal influence on state behaviour.

In contrast to the high politics of military threat and emergency measures, climate adaptation is complex in terms of who formulates security, the audience to be accommodated, and how those who formulate security can do so. Adaptation takes place at the local level, while the politics underlying such practices are often formed at the national or international level. The different actors have different expectations and different methods of

operation. For instance, whereas United Nations members and intergovernmental agencies institute treaties, agreements, technological and financial support, it is national governments that formulate adaptation policies, and local governments, civil society and individuals that implement adaptation actions.

Findings: securitization of climate change adaptation in Nigeria

In this section we use securitization theory to analyse: (1) if the logic of securitization is fulfilled in climate change adaptation in Nigeria; (2) who the audiences of climate security narratives are; (3) what action has been taken; and (4) the impact of securitization on other socio-political issues.

We start with a qualitative analysis of the threat narrative in Nigeria's climate security by examining political speech acts, national news media, and official government documents. We assess the threat narrative along two dimensions: securitization approach/audience and referent object (Table 1).

The use of securitization narrative in climate change

Our results show that frequently identified referent objects used by securitizing actors in Nigeria. The referent objects that mostly relate to speech acts are territorial threats and individual threats. Individual threats are referred to when people's daily food and water supplies are threatened, while territorial threats referred to an increasing threat of civil and interstate war due to the long-term effects of climate security. These threats often play into each other, as expressed in the following example from President Buhari in 2017 at a climate change summit. In front of an audience comprising the head of states, state representatives, policymakers, environmental activists, intergovernmental organizations, NGOs, civil societies, climate change experts, and the general public, Nigeria President, Buhari, delivered one of the most notable speeches in framing climate change in security terms. His speech expressed climate change as the major cause of livelihood insecurity, forcing millions of Nigerian citizens into migration and asserting that climate change is the major cause of deadly attacks between Fulani herders and local farmers. President Buhari's assertions are supported in the literature, which for example demonstrates how climate change is causing livelihood insecurity as many communities are heavily dependent on natural resources for their well-being (Nte 2016). As drought and desertification increase in the North, the Fulani herdsmen migrate to the South, where they often engage in conflict over fertile land with farming communities in Southern Nigeria (Nte 2016, Oke and Olawale 2019). Indeed, the conflict between the farming communities and the Fulani herdsmen claimed the lives of at least 1,229 people in 2014 and was labelled the second most significant security challenge confronting Nigeria



Table 1. Securitization narrative on climate change in Nigeria.

Securitizing actor	Securitization approach & audience	Referent object
Speech act	<p>International speeches to international audiences often comprising heads of state, other government officials, intergovernmental organizations and NGOs.</p> <ul style="list-style-type: none"> a) Climate change conferences b) Climate change summit c) Security meetings <p>Internal official speeches to audiences comprising stakeholders, policymakers, local organizations and civil actors:</p> <ul style="list-style-type: none"> a) Media interview b) political rallies 	<p>Territorial threat</p> <p>Individual threat</p>
Media	<p>The use of pictures and texts in showing damages caused by sea-level rise floods, droughts and erosions to national audiences comprising of experts, local politicians, stakeholders, policymakers, NGOs and general public</p> <p>The use of videos to show disaster risk damages</p>	<p>Individual threat</p> <p>Planetary</p>
Official documents	<p>The government uses official documents such as National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) of 2011, INDC of 2016, Nigeria's National Communication: Under the United Nations Framework Convention on Climate Change (NINC-UNFCCC), NEMA and NNAPF of 2020. These documents attract audiences comprising intergovernmental agencies, policymakers, experts, NGOs and general public</p>	<p>Territorial threat</p> <p>Individual threat</p> <p>Planetary threat</p>

(Nte 2016). Further, between January 2016 to October 2018, Amnesty International recorded 310 attacks between the Fulani herdsmen and local communities, resulting in at least 3,641 deaths in 56 villages in 5 states within the Middle Belt and Southeast region (Amnesty International. 2018).

At the same summit, President Buhari told his audience that shrinking Lake Chad and the parching of fertile arable lands around the Lake Chad basin caused by climate change has taken jobs and rendered people poor and vulnerable. Buhari reminded his audience that shrinking Lake Chad is the major cause of terrorist insurgencies of Boko Haram around the Lake Chad Basin, which is leading to inter-related political exclusion, a breakdown in the social contract, and insecurity around the area. Buhari's speech reflects earlier assertions that communal conflicts triggered by climate change can engender state failure (Nte 2016) and/or threaten traditional livelihoods thereby forcing some individuals to explore membership of armed groups, such as Boko Haram (USJFCOM 2010). Buhari assured his audience that lives would be saved, and wars averted if adaptation support were to be provided by the international community (Buhari 2017).

Media in Nigeria mainly uses a securitization frame that points to the security of individuals, groups, and the planet as referent objects of climate security. For example, in 2015, The Guardian newspaper analysed how climate change is intensifying floods with negative impacts on the security and welfare of millions of Nigerians (Adeoye 2015). The Nigeria National Broadcasting Television Station (NTA), the national news network, declared climate change a food, water, and health security problem by linking it to the devastating Benue flooding in 2017 (Solomon 2017). In emphasizing the use of the planet as a referent object of climate security, Herbert *et al.* (2013) show that the dominant frame of climate security in Nigerian media is deforestation, gas flaring and environmental degradation, which can be mitigated through emission reduction and alternative energy use.

Finally, in official documents, we found the three referent objects, the territorial threat, the individual, and the planetary threat. The 2013 Nigeria National Climate Change Policy Response and Strategy (NCCPRS) has the objective of helping Nigeria implement mitigation measures that will promote low carbon and strengthen national capacity to adapt to climate change. According to National Emergency Management Agency, as reported in 2013 Nigeria Post-Disaster Needs Assessment, the 2012 flood severely impacted 30 of 36 states in Nigeria, causing 363 deaths, 5,851 injuries, destruction of 597,476 houses, displacement of over 21 million people and an estimated loss of USD 19.6 billion (The Federal Government of Nigeria. 2013). Nigeria's official INDC report emphasizes the livelihood security issues of climate through soil erosion, severe landslides, sea surges, tidal waves, sea-level rise in the South as well as degradation of habitats, and desertification in Nigeria. The document also indicates that climate change poses a significant



Table 2. Securitization of climate change in Nigeria: Actors, strategies, challenges, and responsibility.

Actors	Security perspectives on climate change	Adaptation strategies	Challenges of adaptation strategies	Perceived adaptation responsibility
Federal government experts (FCE) and State government experts (SGE) NGO experts (NGE) and Research institute experts (RIE)	<p>climate change having a direct impact on security issues such as:</p> <ul style="list-style-type: none"> ● conflict, migration, national and international security. <p>Climate change has non-linear link to security:</p> <ul style="list-style-type: none"> ● Variability-oriented perspective where climate security is often connected to climate-related risks such as: ● flooding, drought, and erosion. ● Vulnerability-centered perspectives where climate change is often connected to risks and vulnerabilities such as: ● poor development, socio-political issues, physical exposure. 	<p>Adaptation strategies</p> <ul style="list-style-type: none"> ● Raise awareness about low adaptive capacity ● Institutionalization of adaptation policies ● Attract international support through funds, bonds ● UN council Lake Chad resolution 2349 ● Attract adaptation funding. ● Direct attention is paid to underlying issues causing vulnerability to climate-related risks. 	<p>Challenges of adaptation strategies</p> <ul style="list-style-type: none"> ● Lack of immediate counter action measures ● Neglect of local adaptation actors. 	<p>External actors: International non-governmental organizations</p> <p>Federal, state and local government responsibility.</p>

threat to the achievement of development goals, especially those related to eliminating poverty, hunger and promoting environmental sustainability (INDC 2016). According to NASPA-CCN (2011), the negative impacts of climate change in many rural areas can be expected to contribute to increased migration, which may lead to social conflicts and create a new class of environmental refugees. Nigeria's National Adaptation Plan Framework (NNAPF) explains that climate change is causing damage to infrastructure and ecological systems, and stresses that the scarcity of biodiversity resources, especially in marginal places, as a contributing factor to the current communal conflict and a high degree of insecurity in the northern region (NNAPF 2020).

The impact of securitization narrative on climate change adaptation in Nigeria

Our results further illuminate the differences in security-driven adaptation perspectives, as well as the differences in how informants describe adaptation-security links depending on whether they work within or outside the public sector (Table 2).

Our findings indicate that the securitization narrative in Nigeria acknowledges two different adaptation perspectives. While the FGE and SGE participants mainly recognize adaptation where vulnerability is seen as resulting specifically from climate change, the NGE and RIP recognize adaptation where vulnerability is affected by socio-political problems.

The various climate security issues identified by FGE and SGE informants are conflict, migration, national security, and international security. FGE and SGE participants explained that climate change is affecting most of the Nigerian population through the threats it poses to natural resources and infrastructure security, such as poor agricultural yield, food security, and damage to roads and houses. One participant stated, "Flood disasters in the Southwest and drought in the North caused by climate change are affecting agricultural produce which our people rely on for survival and economic growth" (ASGE 2). Another participant argued, 'climate change-related floods are causing transportation problems, damage to infrastructures such as houses, roads, and power grids' (ESGE 1). FGE and SGE participants also portrayed climate change as the major cause of conflict between the Fulani herdsmen and local communities in the South. A conflict that, at present, is increasing food insecurity. As one participant opines, 'crop farmers produce the majority of Nigeria's food; the interference from herders is affecting the food security as well as the livelihood of farmers who constitute the majority of the informal economy' (FGE 8).

All the FGE and SGE participants are of the opinion that the industrialized societies caused climate change and should therefore be accountable for adaptation. According to one participant, *'Nigeria needs help to cope with climate change challenges as Nigeria as a country has not contributed to it'* (FGE 2). FGE and SGE participants explained that the link between climate change and an increasing security threat is not just affecting international politics but also national environmental politics. One participant noted, *'Nigeria since when the president of the country became vocal about the security implication of climate change, has instituted few adaptation policies including mainstreaming climate change into relevant sectors'* (FGE 3). Nigeria has instituted different policies, including Nigeria's Drought Preparedness Plan, National Policy on Erosion, National Water Policy, National Forest Policy, National Health Policy, National Policy on Drought and Desertification; Flood Control and Coastal Zone Management, and National Biodiversity Strategy and Action Plan. As a result of the climate security argument, Nigeria has attracted some Clean Development Mechanism projects and projects financed by the Adaptation Fund (INDC 2016). Also, following the relaunch of a task force that was established in 1998, Nigeria is currently prioritising regional cooperation, particularly with the neighbouring Lake Chad Basin Commission Countries, namely Cameroon, Chad, and Niger, as well as Benin, in the operationalization of Multinational Joint Task Force (MNJTF) (Mohammed 2016).

As illustrated in Table 2, the NGE and RIE participants identified climatic extremes such as flood, drought, and erosion as physical events that can lead to security issues when people exposed to these issues lack economic resources and socio-political resilience. These participants are mostly opposed to the use of securitization narrative on the basis that such a framing obscures how socio-political vulnerabilities and adaptive capacities exacerbate climate security issues. They explain that climate security impacts in Nigeria are linked to non-climatic factors such as poverty, social inequality, weak social security, negligence of citizens' welfare, poor governance, and injustice. They claim that the most vulnerable people are often more at risk of climate-related hazards and that a more equitable sharing of resources can reduce people's exposure to climate security impacts. As one participant opines, *'the main victims of climate-related disasters are the poor, jobless, and vulnerable population with less access to good livelihood resources due to lack of basic amenities to live a meaningful life'* (NGE 3). The NGE and RIE participants view reflects the position that in the absence of a disaster risk management effort aimed at reducing flood and drought risk, and failure to promote adaptation, climate change will lead to damage to the ecological system and built infrastructure, as well as loss of life and property (Ogbo *et al.* 2013).

According to NGE and RIE participants, blaming the conflict between the Fulani herdsmen and local communities solely on climate change ignores the political and economic motivations for the conflict by pushing natural factors to the forefront. As one interviewee argued, *'the current problem between the Fulani herdsmen and local communities' rests more on the political tension between the North and the South rather than on scarce resources'* (NGE 4). Nigeria consists of different cultural and ethnic groups merged as one political territory where ethno-religious politics influence the distribution of resources and often leads to conflict between the different groups (Ajodo-Adebanjoko 2017).

They argue that climate security arguments as put forward by the federal and state experts seem to be an attempt to deflect attention away from the underlying developmental issues that cause human insecurity in Nigeria and the socio-political tensions causing conflict between different ethnic groups. As one participant asserts, *'politicians and government agents are merely playing politics by making certain claims about climate change. I think that these people do not care for the Nigerian population'* (RIE 5). They claim that the government employs any favourable narrative to attract global attention, support, and adaptation funds. Another participant claims, *'climate change has become so political that the mere mention of it attracts attention globally'* (NGE 2). Another participant argues that *'once you mention that you want to carry out an adaptation project, funding from international agencies is almost guaranteed'* (NGE 1). As of 2015, Nigeria has received 25 million USD in aggregate funding and 227.5 million USD in aggregate co-financing from Climate Investment Funds (CIF) (AFDB, 2015).

All the NGE and RIE participants suggest that climate change adaptation requires the effort of all stakeholders (the government, nongovernmental organizations, and civil society) for effective action. As Nigeria, like other postcolonial societies, is characterised by weak institutions, corruption, and poor governance, coordination between policy planning at the federal and state level and implementation at the local level is difficult (Olajide *et al.* 2018).

The NGE and RIE participants argue that the adaptation challenge lies in the application of the top-down approach, which creates a gap between the national level where adaptation policies are formulated and the local communities where adaptation implementation takes place. As one participant noted, *'adaptation policies and decisions are often made without involving all the people vulnerable and affected by climate change problem'* (RIE 2). Another participant claims, *'my people have survived some of the hardest flood disasters in this country, yet the federal and state often act as if they know our territory more than we do'* (ASGE 2). These participants suggest that the majority of the Nigerian population excluded from adaptation decision-making have an essential contribution to adaptation policies and practices. *'When disaster strikes, it is the communities and the affected individuals that*

bear the burden. These communities should contribute to adaptation policies' (RIE, 1). Federal and state actors should utilize local knowledge and expertise of affected communities for inclusive adaptation policies and practices. A participant asserts, *'Federal and state institutions need local input and knowledge in institutionalizing adaptation policies, but there is no hope that this will happen anytime soon'* (RIE 4). The participants argue that securitizing actors often lack knowledge of the local problems they securitize. However, these actors want to maintain existing power structures, status, and position.

Discussion

Our qualitative analysis of the securitization narrative in Nigeria reveals a complex process where security framing takes place through speech acts, media, and official documents by different securitizing agents. The official documents covered climate security in reference to territorial, individual, and planetary threats. In the speech act, the individual and the territory are the referent objects, so the speeches have the potential to elevate the state-centric security agenda even though there were claims of international security as a concern. On the other hand, the media paid less attention to territory threats while emphasizing livelihood security and ecosystem security. Nigeria's climate security arguments are not made in isolation since they coincide with the endogenous effects of global climate change predictions concerning vulnerable countries (IPCC 2014).

Balzacq *et al.* (2016) argue that the constitute language used to construct security, context, setting, and the social capital that may be cited as supporting evidence of a threat can alter the conduct and process of securitization. We find that climate securitization narratives used in a particular setting can generate a feedback loop that is more likely to encourage deeper engagement with climate change adaptation. Some of these securitization narratives are presented during conferences, meetings, interviews, and news with language and videos containing a great deal of conviction and attitude, which operates as a mediating and communicative instrument (Côté 2016). Securitizing as an issue in such settings is possible, as inter-subjective belief is often established through social and group interaction with such power as to be able to create social reality and inform people's behaviour (Guzzini 2000). This might be the reason the issue of Lake Chad has attracted attention even though some scholars have argued that the contested shrinking Lake Chad is not the problem; instead, people's lives and livelihood are being undermined by climate change that is aggravating the political and economic conditions that gave rise to the violence in the first place (Vivekananda *et al.* 2019).

Through various securitizing approaches in Nigeria, climate change was defined as a security threat. A plea was made by President Buhari to constitute political responsibility, and the construction of means to adapt to the threat was proposed. The above analysis highlights an important question regarding how the settings that allow climate security claims are created. By taking a view of the audiences as active participants in the securitization process, the answer to how the setting that allows climate security can be found in the audience participating in international climate change summits and meetings where Nigerian policymakers could easily lay claim to climate security without questions. If the acceptance of the validity of climate security claims by audiences depends on the setting, a climate security claim made at a climate change meeting might attract positive interest. At these international summits and meetings, Nigeria's climate security concerns are mostly presented to international audiences that play little or no role in local adaptation practice. However, adaptation is a local practice that requires the participation and effort of the local audience to ensure that the means to adapt are successfully implemented. This suggests that discussing climate security issues at conferences and summits at the grassroots with a local audience may be a productive way to influence adaptation action.

Using media and official text raises a further issue. Employing a security narrative in specific climate problems does not necessarily equate to its significance as a security issue, especially when such issues are not open to public scrutiny (Williams 2008). Securitizing moves are apparent in political speech, the media, and the official document; however, the logic of securitization did not continue as the narrative anticipated. Apart from the Lake Chad Joint Task Force and few adaptation projects, the policies pursued were ordinary with little contention.

The differences between the FGE and SGE participants and the NGE and RIE participants are visible in relation to the impact of climate security on adaptation. FGE and SGE participants echoed the securitization narrative employed by the government through political speeches, national media, and official documents. In FGE and SGE's view, developed countries responsible for climate change are also responsible for the adaptation of countries like Nigeria. More specifically, NGE and RIE participants emphasized poor development, socio-political issues, and other vulnerabilities as the major contributing factor to Nigeria's security concerns and think the federal government is accountable for adaptation. These participants also differ in their views regarding the limits to adaptation in Nigeria. FGE and SGE participants blame adaptation capacity specifically on lack of financial and technological resources as the country's resources are dedicated to more urgent and pressing developmental issues. The NGE and RIE participants

pointed to the neglect of the local communities in policy creation which can open the issues of climate change adaptation to debate and include the voices of the vulnerable groups. Specifically, pointing to socio-political and developmental factors can enable the underlying issues to be discussed, which can play an essential role in de-escalating tension between different groups as well as help to reduce people's vulnerability. The neglect of local communities reflects the performative role of security when it is employed as a political technology to preserve power relations and oppress or exclude some groups or opposition (Huysmans 2006). It is not surprising to note that FGE and SGE participants have been utilising a security narrative to refer to adaptation in a way that is not balanced, as the representation of an issue as security can serve as a tool to limit participation in decision-making. Our application of a securitization narrative to climate change adaptation reveals that the role of the audience is marginalized in certain situations, especially in regard to the vulnerable groups that are most impacted by climate security. This is problematic as the audience is fundamental in the inter-subjective process of securitization, and their limited participation might be significant in the lack of urgent adaptation actions.

Despite the dominant use of securitization narrative, the adaptation policies that have been instituted were rather typical in terms of the regular dynamics of Nigerian politics. The need for adaptation in Nigeria has not resulted in urgent and exceptional action that the logic of securitization would expect; instead, the predominant practice is risk management, which is applied to reduce the harm directed to the referent object as risk issues are more conducive to being managed, in contrast to being eradicated (Corry 2012). The securitization narrative at the political level has done little to impact practical adaptation as adaptation is a complex process that mostly takes place at the local level. However, we are warned by Floyd (2015) against setting the requirement for securitization success too high by placing the threshold of its success purely on security practice.

Furthermore, securitization narratives tend to deflect attention from existing socio-political issues and other vulnerabilities that contribute to security issues in Nigeria. Even the INDC report recognizes adaptation as an integrated component of sustainable development, which contributes to reduced vulnerability, disaster risk reduction, and enhanced resilience and adaptive capacity (INDC 2016). In any case, the data reveals that the existing conflict in Nigeria is caused mainly by the failure to share limited resources, which implies that the growing shift in temperature, rainfall, storms, and sea-level rise, if unaddressed, could throw already scarce resources such as land and water into shorter supply and thereby increase conflict that dots the country's landscape (Lekwot *et al.* 2014).

Conclusion

Climate change adaptation in Nigeria and the more general question of security in adaptation practice reveals the limits of urgent action even when a securitization narrative is employed. Politics and the structural dynamics of climate change adaptation are too complex for securitization narratives alone. In traditional security issues, there is often a focus on who construct security and where they construct security, as well as what the security practices being constructed are. This is not the case in a non-traditional security issue such as climate change adaptation, especially as it relates to our findings. In climate change adaptation, security construction is not done by a specific actor but by different actors to various audiences through different channels such as speech acts, the media, and textual documents. In the case of Nigeria, the most crucial audience (the local public) is often not included in the discussion especially by the media. The media is a contested space, often devoid of deliberative interaction, where the most powerful group can establish a dominant specific message (Happer and Philo 2013). Few people are included in the formulation of media content which brings into focus the power relations that are embedded in the securitization process. This means that the attempt to apply a securitization narrative to climate change adaptation has resulted in few practical actions. Much of what is being done in the name of climate change adaptation in Nigeria is risk-related. Apart from the recent prioritizing of the regional corporation in the Multinational Joint Task Force (MNJTF) with the neighbouring Lake Chad Basin Commission, and the support for some Clean Development Mechanism projects and projects financed by the Adaptation Fund, adaptation practices are carried out by ordinary government and non-governmental institutions, civil society and individuals. Adaptation processes and practices in Nigeria are driven not merely by a logic of crisis, emergency, and exception, but also through risk principles which seek to regulate and manage climate-related risks. Climate security must therefore be considered in the context of the numerous other institutions that take part in climate change adaptation.

This study has shown that although securitizing moves are easily identified in climate change in Nigeria, the implications for policy and practice is much harder to discern. This is partly because of the complexities of climate change adaptation as well as the numerous interest groups required. Our findings do not discount the importance of securitization in climate change, but it problematizes the claims that securitization narrative affects adaptation practices, especially at the local level. The complexity of adaptation far exceeds that of the political theatre of securitization and should be concerned with processes that are both effective and not controversial. We conclude that the use of

securitization narratives run the danger of doing little to address underlying issues that affect people's vulnerability and exposure to climate security issues. This is because the political theatre of securitization narratives often ignores the socio-political dynamics that determine people's vulnerability and exposure to climate security.

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Article 3
(Book Chapter)



Equity and Justice in Climate Change Adaptation: Policy and Practical Implication in Nigeria

Chinwe Philomina Oramah and Odd Einar Olsen

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Abstract

Over the past decade, justice and equity have become a quasi-universal answer to problems of environmental governance. The principles of justice and equity emerged as a useful entry point in global governance to explore the responsibilities, distribution, and procedures required for just climate change adaptation. These principles are designed primarily through the establishment of funding mechanisms, top-down guides, and frameworks for adaptation, and other adaptation instruments from the UNFCCC process, to ensure effective adaptation for vulnerable countries like Nigeria that have contributed least to the issue of

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climate change but lack adaptive capacity. Global adaptation instruments have been acknowledged for adaptation in Nigeria. Climate change has a detrimental impact on Nigeria as a nation, with the burden falling disproportionately on the local government areas. As Nigeria develop national plans and policies to adapt to the consequences of climate change, these plans will have significant consequences for local government areas where adaptation practices occur. Although the local government's adaptation burden raises the prospects for justice and equity, its policy and practical implication remains less explored. This chapter explores the principles of justice and equity in national adaptation policy and adaptation practices in eight local government areas in southeast Nigeria. The chapter argues that some factors make it challenging to achieve equity and justice in local adaptation practices. With the use of a qualitative approach (interview (n = 52), observation, and document analysis), this chapter identified some of the factors that constraints equity and justice in local government adaptation in southeast Nigeria.

Keywords

Adaptation policy · adaptation practices · environmental justice · equity · Nigeria · local level

Introduction

The gap between the developed and developing nations as regards development is extending to the risks and security issue of climate change. While almost all countries are affected by the risk and security impacts of climate change, it is widely recognized that developing countries are more vulnerable, lacks adaptive capacity (Tabbo and Amadou 2017), and would suffer disproportionately (Stallworthy 2009; Rübhelke 2011). This is particularly the case for developing countries in Africa living in poverty (IPCC 2014). Wide recognition that industrialized countries are overwhelmingly responsible for climate change has slowly led to conceptualizing adaptation as a global issue with a formidable dilemma of equity and justice in developing countries such as Nigeria (McManus et al. 2014; Thomas and Twyman 2005). Scaling adaptation as a global issue recognizes an international responsibility to provide financial support and funding for undertaking adaptation at the national or local level in developing countries (Benzie and Persson 2019; Ciplet et al. 2013; Saraswat and Kumar 2016). Despite the funds obtained by some developing countries for climate change adaptation, implementing adaptation at the local level continues to be challenging.

Many of the impacts of climate change, such as floods and drought, are experienced at the local level (Rauken et al. 2015). As a result, the burden of climate change adaptation practices falls disproportionately on the local government area. Adaptation is a localized phenomenon that addresses local circumstances with the need for local solutions and actions (Corfee-Morlot et al. 2011; Measham et al. 2011;

Moore 2012; Nalau et al. 2015). Conceptualizing climate change adaptation as a local phenomenon is based on the principle of subsidiarity, which is a belief that tasks should be trusted with the lowest level, where the local actors are always able and willing to govern their natural resources effectively (Lockwood et al. 2009). This approach to adaptation assumes that local actors have the required resources to practice adaptation in isolation.

However, local government in Nigeria is embedded in a broader multiscale governance context comprising a range of government actors from the state, the federal, and global levels. Thus, current thinking poses that adaptation plans should be understood and developed at national and subnational levels, practiced at the local level, and funded via international institutions (Benzie and Persson 2019). As a result, local adaptation is increasingly supporting and driving adaptation initiatives and policies within the framework provided by national and state-level legislation (Vogel and Henstra 2015). The extent to which these adaptation policies consider vulnerabilities and impacts of climate change at the local level as well as the extent to which local government participates in instituting national adaptation policies and frameworks are debatable. Against this backdrop, different scholarly voices have emerged over the years, arguing that adaptation decision-making at policy and practical levels has justice and equity implications (Few et al. 2007; Paavola and Adger 2006; Thomas and Twyman 2005).

Nigeria has instituted national adaptation plans and policies as well as established climate change institutions to aid adaptation. Despite the adaptation policies and institutions, some local government areas struggle to cope with and respond to climatic impacts. This is because there are no regulations and institutions designed to foster climate change adaptation in the local government area (Oulu 2015). Presently, the local government institutions carrying out adaptation, such as the ministry of environment and planning, department of works, and local emergency management agency (LEMA), are not designed for climate change challenges. This chapter discusses prospects for justice and equity principles in Nigeria's national adaptation policy and local adaptation practices. This chapter affirms that equity and justice are the important normative goal in both national and local climate change adaptation, but argue that the practice of equity and justice in climate change adaptation is often embedded in the illusion of inclusion. Without due consideration of equity and justice at all levels of governance, there would be a tension between the underlying principle of fair adaptation and participation by the local governments and vulnerable groups in Nigeria. Alternatively, a more instrumental approach to appropriate adaptation at the local level is more likely to succeed as long as local government inclusion is made explicit from the outset.

This chapter discusses the perceived role of equity and justice regarding national adaptation policy at the federal level and adaptation practices in eight local government areas in southeast Nigeria. With the use of a qualitative approach through interview and document analysis, this chapter explores the principles of equity and justice in policies and practices of climate change adaptation in Nigeria.

Conceptualizing Justice and Equity as It Relates to Climate Change Adaptation

Climate change issues give concern for different types of justice: distributive, procedural, recognition, compensatory, and restitutive justice (Ciplet and Roberts 2017; Khan et al. 2019; Klinsky and Dowlatabadi 2009; Rawls 1971). The basic structure in the subject of climate change justice here is that different communities experience differentiated impacts of climate variability in part by the political system as well as by economic and social circumstances. This differentiated physical and social vulnerability to climate change impacts create deep inequalities between developing and developed countries. Vulnerable developing countries lack the tools and adaptive capacity required to develop the appropriate response to climate risks. The development of tools and adaptive capacity both at the local and national level has been a significant focus on global adaptation, especially regarding equity and justice. However, equity and justice issues of adaptation are more readily discussed at the global, regional, and national levels than at the local level (Thomas and Twyman 2005), even though adaptation practices are undertaken at the local level.

At the global level, the differentiated vulnerability to the impact of climate issues was brought to the international community's attention in November 2006 at the United Nations Framework Convention on Climate Change (UNFCCC) held in Nairobi, intending to identify situations that increase or reduce the capacity to adapt (Vogel et al. 2007). It was then argued that adaptation would promote benefits that can lead to equitable and sustainable development (Adger et al. 2009). The 2015 Paris Agreement includes a global goal on adaptation through reducing vulnerability to climatic impacts, reinforcing adaptive capacity, and strengthening resilience (International Summit on Climate Change held in Paris 2015). One of the commitments of developed countries under the UNFCCC is to assist developing countries to meet their adaptation cost. If more impoverished country gains access to adaptation funds through equity and justice schemes, adaptation can be improved. Global governance is considered especially relevant for Nigeria and other developing countries, as these countries are already struggling to meet climate change's security challenges (Nightingale 2017; Nath and Behera 2011). The principle of environmental justice is focused on the existence of inequity in the distribution of environmental hazards, where the environment is understood to create a condition for social justice (Schlosberg 2013). As climate change increases, environmental justice is given more broad consideration with a growing focus on sustainability and transformative politics and practice to affirm the socio-ecological unity and the interdependence of all species.

There are essential points to why equity and justice have become two crucial concepts in climate change adaptation discourse at the global and national levels. First is the principle of justice, which emerges as a reaction to the claim that devastating climate extremes such as flood, drought, and desertification made worse by climate change pose additional negative implications for vulnerable developing countries and poverty-affected communities (Nay et al. 2014). The

susceptibility to climate risk goes beyond biophysical vulnerability to include human well-being, social, economic, and political factors underlying social vulnerability (Kelly and Adger 2000; Otto et al. 2017), which put vulnerable countries in a constant state of crises. Therefore, adaptation should be evaluated based on justice criteria that would benefit all groups of society as well as the future generation by providing the information and resources needed for adaptation, especially for those most vulnerable to climate change impacts.

Second, equity is a concept referring to fairness in the distribution of outcomes or distributive equity (Miller 1992). As regards climate change, Nay et al. (2014) argue that developing economies depend more on climate-sensitive activities that are more impacted by climate variability. They argue further that these developing economies also lack the political and organizational capacity to adapt to climatic impacts. Thus, the outcome of the equity principle should ensure that:

- The vulnerable are treated fairly for unduly bearing the burdens of climate change impacts
- There is an inclusive decision-making process
- There is an inclusive framework for taking and facilitating adaptation action
- There is a relationship between climate change adaptation and other factors that affect livelihoods (McManus et al. 2014)

However, within these developing countries, the social, institutional, and political structures can play an essential role in climate change adaptation. The relationships that exist between the individuals, the communities, and the state are also essential. Thus, adaptation at the local government is often enabled or hindered by other issues such as social structures, power relations, political and institutional structures, as well as the broader higher level of governance arrangements (Lawrence et al. 2015; Simonsson et al. 2011). These relationships often reaffirm the status quo and are likely to influence the issues of equity and justice in local adaptation practices. According to Eriksen et al. 2015, injustice and unfairness exist when the politically powerful actors set up institutions that advance agendas that exclude local knowledge, needs, and voices of the marginalized in adaptation decision-making. These powerful actors with authority further influence adaptation by claiming the right to legitimize or undermine different types of knowledge (Eriksen et al. 2015). Adaptation policies are often designed at the national level and may disproportionately affect vulnerable communities if they are excluded during policy design (Urwin and Jordan 2008). Understanding the local context of vulnerability through local participation in adaptation policies is essential for equitable and justifiable adaptation. This implies a process of social interaction and joint decision-making by stakeholders across governance scale in adaptation. However, from a systems perspective, one of the challenges facing such provision is associated with the complexity of social interactions involved in multilevel adaptation decision-making.

Climate Change in Nigeria

Nigeria is one of the most vulnerable countries and is highly dependent on climate-sensitive sectors. The country is located in the tropics that give her a hot tropical climate, consisting of variable rainy and dry seasons depending on location. Given the country's climatological cycle and size, there is a considerable range in total annual rainfall across Nigeria, from south to north, and in some regions from east to west. Wet and dry season prevails in the east and west, while a steppe climate with little precipitation is found in the far north. Temperature and humidity remain relatively constant throughout the year in the south, while the season varies considerably in the north (Ajayi et al. 2019). The most significant total precipitation is in the southeast along the coast around Bonny (south of Port Harcourt) and east of Calabar with annual rainfall around 4,000 millimetres (mm). The regularity of drought periods has been among the most notable aspects of Nigeria's climate in recent years, particularly in the north's drier regions (Akande et al. 2017; Haider 2019). These droughts indicate the considerable variability of climate across tropical Africa and severely affect the drier margins of agricultural zones occupied primarily by pastoral groups.

The southeast is one of the most developed regions in Nigeria, with the second-highest population density. In 2015, the southeast had a total population of 40 million. Southeast Nigeria falls within the latitude of 6' N and 8' N and longitude of 4'30'E and 7'30'E, describing the country's inland region. Southeast Nigeria is of the wet tropical type climate with mean annual temperatures between 21 °C and 34 °C. The temperature is highest around March in the southeast (Iloeje 2009). The mean minimum temperature is relatively close to the coastal area, with annual rainfall exceeding 3500 mm (Njoku 2006; Nwagbara et al. 2013). In recent years, rainfall has become significantly more substantial in the southeast. In 2012, River Niger reached a record of 12.84 m above sea level. Water levels have also risen in upstream Cameroon, Mali, and Niger. These countries feed the River Niger and River Benue, which flow through Nigeria. River Niger flows through the southeast region leading to severe flooding. In 2012, flooding led to two million displacements and three hundred and sixty-three (363) deaths. In 2017, 12 states, including states in the southeast, were severely affected, leading to 200 deaths and over 600,000 displacements (Orji 2018). As climate change leads to more rainfall, floods disasters are becoming more devastating in Nigeria, especially in the southeast region. The southeastern region is also exposed to mild drought during the dry season.

Preparing for Climate Change Adaptation in Nigeria

Nigerian started showing a keen interest in climate change issues since 1994. The first national climate communication in 2003 was aimed at shedding more light on the consequences of climate change and its impact on developmental goals. With the support of development partners such as the United Nations Development Program (UNDP), the European Union (EU), United States Agency for International

Development (USAID), as well as intergovernmental, regional organizations and nongovernmental agencies, several climate change adaptation strategies and policies have been designed and approved. Nigeria initiated a comprehensive planning process for adaptation by developing the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN). Prioritized adaptation measures in the NASPA-CCN report tend to focus on agriculture, forestry, water resources, human health, human settlement, energy, transportation and communication, industry, disaster and security, livelihoods, vulnerable groups, and education. In NASPA-CCN report, there is a recognition that climate change adaptation can best be achieved through multilevel effort requiring global, national, state, local government, nongovernmental, and civil society coordination (BNRCC 2011). In addition to this, Nigeria has instituted policies and established climate change institutions to aid adaptation. Policies such as National Policy on Erosion and Flood Control, National Water Policy, Nigeria Drought Preparedness Plan, National Forest Policy, National Health Policy, the National Policy on Environment supports (for prevention and management of disasters such as floods, drought, and desertification) and Nigeria's Agricultural Policy were developed to protect agricultural land resources from drought, desert encroachment, soil erosion, and floods (BNRCC 2011). Nigeria has established a climate change framework such as the National Framework for Application of Climate Services – NFACS (to reduce communities' vulnerability by implementing the National Agricultural Resilience Framework for the agricultural sector). Nigeria has also established a climate change department under the federal ministry of environment. The country relies on NIMET (Nigerian Meteorological Agency) and NEMA (National Emergency and Management Agency) for climate-related disaster warnings, prevention, and response. At the state level, departments of climate change are functional in some states and non-functional in others. There are no known climate change departments at the local government areas; hence, existing ministries are carrying out adaptation actions.

Exploring the Equity and Justice Perspective of Climate Change Adaptation in Nigeria

This section of the chapter takes an equity and justice perspective of adaptation policy and practice in Nigeria, which provides a useful framework for understanding the factors that promote or hinder local government adaptation. The local government areas that are the focus of the chapter are situated in the southeast zone, where the population is (a) vulnerable to climate-related floods and mild droughts, (b) lack adaptive capacity, and (c) agitating for separation from Nigeria due to poor social and political representation. Interviews, observation, and document analyses were used as the primary data sources to explore the perceived impact of equity and justice on national adaptation policies and local adaptation practices in southeast Nigeria. This chapter analyzed the national adaptation plan and other important documents. The key documents analyzed include the National Adaptation Strategy and Plan of action on Climate Change for Nigeria (NASPA-CCN) and

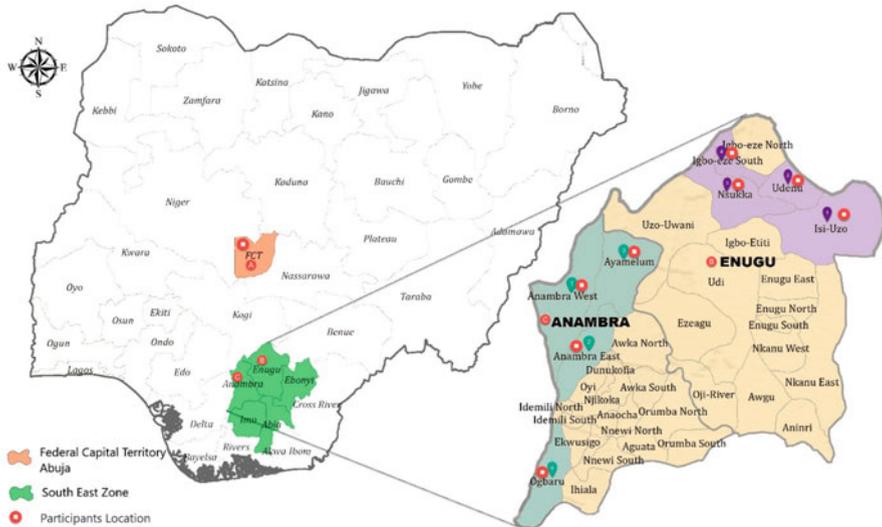


Fig. 1 Map of Nigeria showing the participant's locations

Nigeria Intended Nationally Determined Contribution (INDC 2016). Other documents include scientific articles, policy documents, newspapers, conference speeches, and media contents (Fig. 1).

Interviews and observations were carried out between September 2017 and January 2018. The interview was conducted ($n = 52$) with actors working at the federal, the state, and the local government parastatals. At the national level, ten participants from the federal department of climate change were interviewed. These federal-level participants are labeled FGP (Federal government participant). At the regional level, ten participants from two states in the southeast (Anambra and Enugu state) were interviewed, where five participants were selected from each state. These participants are involved in adaptation across the state ministry of ecology, environment and climate change, the state ministry of works, and the state emergency management agency (SEMA). The state-level participants are labeled SGP (state government participants). At the local government level, 32 participants were interviewed from eight local government areas in southeast. Four experts were selected from each of the eight local government areas. These local government-level participants are labeled LGP (Local government participants). Among these participants are engineers involved in areal planning and infrastructural management, officials engaged in environmental protection, and local emergency management agencies (LEMA). Four of the local government areas, Anambra east, Anambra west, Ayamelum, and Ogbaru, are situated very close to water bodies. With the majority of the population living near the riverine area, flooding is the largest source of climate-related losses. The other four local government areas, Igbo-Eze south, Isiuo, Nsukka, and Udeniu, are situated in highlands where both floods and mild droughts are sources of climate-related losses affecting the population.

Flood and drought in the southeast impact livelihood, health, crop production, livestock, groundwater dryness, and infrastructure damage. Interview questions focused primarily on how fair adaptation policies are for local government adaptation practices.

The observation was used to collect data on the adaptation practices and activities designed to cope with climate-related disasters. Data obtained through the observation method were noted and analyzed based on a follow-up question for confirmation. The interview, observation, and document analysis data were coded and categorized using Nvivo 11. The data was identified and categorized thematically using the inductive and data-oriented approach. The findings will be analyzed using the following questions as a structuring tool: what are the physiological and social vulnerability of climate change in the eight southeast local government areas in Nigeria? How is Nigeria adapting to climate change impacts? Who is responsible for adaptation policies and practices? What role do the principles of equity and justice play in adaptation in Nigeria's local government areas? These questions would be explored in three subsections. The first section will give an account of the vulnerability of local government areas to climate change. The second subsection will explain how global adaptation is affecting Nigeria's adaptation policy and practices. The last section will then explain the effect of global equity and justice on local adaptation practices.

Vulnerability and Impact of Climate Change in Nigeria

Climate change in Nigeria leads to changes in the frequency and intensity of weather and climate extremes. Nigeria's climate extremes hit people in multiple different ways. Warm temperatures cause more evaporation of water, while changes in precipitation lead to heavy rain but also swings into drought conditions. Nigeria is one of the most vulnerable countries to climate variability (IPCC 2014). The most frequently cited vulnerability is sea level rise, floods, droughts, sandstorms, landslides, erosion, intensified desertification, and general land degradation (Medugu et al. 2010). These extreme events have broad consequences for farmlands, livestock, and built infrastructures such as buildings, roads, and railways, as well as fundamental societal concerns, such as disputes over environmental resources, food security, water security, health implications, loss of livelihoods, internal and external migration, and loss of life (BNRCC 2011; IPCC 2014). The broad consequences of climate change make it imperative to assess the level of a country's vulnerability to climate change and capacity and readiness for adaptability. This chapter identified vulnerability to climate change at the national, regional, and local levels. Some vulnerability factors are frequently identified across all three scales: poverty, access to resources, livelihood opportunities, and health. Vulnerability to climate change is distributed disproportionately in Nigeria. The northeast and northwest zones are vulnerable to desertification, heat wave, loss of freshwater, intensive drought, bush burning, loss of arable lands, and livestock loss. The southeast and southwest are vulnerable to sea level rise and salinization, intensive rainfalls, floods, and damages

to built infrastructures. It would be nearly impossible for preparation to be made towards adapting to these changes if the vulnerability is not adequately understood, especially from the angle of the most affected parties at the local level.

The IPCC conceptualizes vulnerability as a function of the state of a social system and the biophysical nature of climate change effects that the system face (IPCC 2007). Vulnerable to climatic impacts, Nigeria covers different frameworks. These include risk hazards, political ecology, and socio-ecological system frameworks. Within the risk and hazard field, vulnerability is the susceptibility of people and things to losses attributable to a given level of danger, a given probability that a hazard would manifest itself in a particular way, and with a particular magnitude (Alexander 2002: 29). This field of vulnerability often neglects to address how human contribute to climatic hazards as well as the societal context in which climate hazards takes place. In political ecology, vulnerability is a characteristic of a person or group and their situation that influences their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard (Wisner et al. 2004). In the social-ecological system framework, vulnerability is a state of susceptibility to harm from exposure to stress associated with environmental and social change and the absence of capacity to adapt (Adger et al. 2006). Multiple factors such as environmental exposure, socioeconomic, political, and cultural factors operating at different levels drive vulnerability in Nigeria's local government areas. Climate hazards only lead to disaster if there is biophysical or/and social vulnerability. Biophysical vulnerability to climate change is understood as a function of environmental exposure, while the social vulnerability is a function of socioeconomic, political, and cultural characteristics of a society (Otto et al. 2017).

In Nigeria, vulnerability plays out locally. This chapter attempt an assessment of some local government areas' vulnerability to climate-related flood and drought around two dimensions, biophysical vulnerability and social vulnerability. Results show some similarities in the participant's perception of climatic impacts and adaptation measures.

Table 1 shows that flooding is the largest source of climate-related losses in four low land, local government areas in the southeast, as the participants explained. With an estimated 30% of the population living near the riverine area, in Anambra east, Anambra west, Ayamelum, and Ogbaru, loss of house settlement, loss of farmland, transportation, limited energy supply, and erosion are constant plight experienced by local communities. Out of 16 participants from low land, local government areas 14 have experienced vulnerability to flooding while 2 knows people that have experienced flood vulnerability. LG participants explained that during flooding, the only transportation system is local boats. However, they argue that using resilient structures such as iron and other metallic products to construct roads and bridges can make the situation better. Flooding causes desperate living conditions leading to the temporal fleeing of millions of people. The electric power supply in the southeast is limited at ordinary times. Flood hazards negatively influence the already limited power supply, forcing households and businesses to use generators that emit CO₂ and other dangerous gasses to the detriment of human health and environmental safety.

Table 1 Local government physical and social vulnerabilities and adaptation strategies

	Local Government Area	Climate change hazards	Biophysical vulnerability to climatic hazards	Social vulnerability to climatic hazards	Effects of climatic hazards	Adaptation strategies
Lowland	1.1) Anambra east 2) Anambra west 3) Ayamelum 4) Ogburu	Floods	Very vulnerable to exposure	1) Economic 2) Governance 3) Infrastructures	1) Loss of farmland, 2) Loss of housing 3) Erosion 4) Poor transportation 5) Energy 6) Migration	1) Flood management 2a) Avoid building on flood plains 2b) Use resilient infrastructure 3) Soil management 4) Resilient infrastructure and drainage system. 5) Energy and infrastructure management
Highland	1.1) Igbo-Eze South 2) Isiuo 3) Nsukka 4) Udenu	Mild droughts Floods	Very low Moderately vulnerable to exposure	1) Lack of economic resources 2a) Dysfunctional government structure 2b) Lack of important institutions	1) Agriculture, 2) Water distribution 1) Agriculture 2) Erosion 4) Transportation 4) Water security 5) Energy 6) Migration	1) Irrigation 2) Use of deep water and boreholes 1) Improve the agricultural system 2) Conservation agriculture and soil management 3) Use of resilient materials and functional drainage system 4) Water resource management 5) Energy and infrastructure
		Mild drought	Moderately vulnerable		1) Agriculture 2) Water distribution	1) Irrigation technology 2) Use of underground water

Table 1 illustrates the frequently identified adaptation strategies used to adapt to the effect of climatic hazards. The various adaptation measures identified by LG participants are flood management, town planning, and waste management. Flood management takes place through the construction of an effective drainage system. LGP participants explained that the local communities' drainage system is weak as some drainage systems are poorly constructed. Rainwater leads to overflow and flood incidents because the drainage systems are often not appropriately channeled. Poor town planning leads to improper house settlements where people construct houses on floodplains. LGP participants agree that communities must adhere to town planning to avoid the loss of house settlements. Proper town planning discourages people from building on floodplains and using resilient structures that can withstand extreme weather variability. Poor waste management leads to people's disposal of waste when it is raining. These wastes block the drainage system and contribute to flooding.

Erosion is another hazard linked to climate variability in the low land, local government areas of southeast. LGP participants explain that people have lost their houses and farmlands to erosion. They also explain that erosion losses are not as severe as losses from the flood as erosion occurs slowly. LGP mentioned soil management and planting of trees as necessary measures used to reduce erosion. In Anambra east, Anambra west, and Ogbaru, the LGP participants explained that trees' planting is not sustainable due to firewood consumption.

Slow onset events such as drought are also having a substantial impact on crop production, livestock, and water distribution in low land, local government areas but at a deficient level. The use of irrigation and digging for clean water is common in these local government areas during drought. However, LGP explained that the use of irrigation is constrained by limited irrigation facilities based on available resources.

In the local government areas located in highlands, mainly: Igbo-Eze south, Isiuzo, Nsukka, and Udeno, the LGP participants explained that households are not often in danger of losing their homes due to moderate flooding instead, it is agriculture, gully erosion, road infrastructures, and energy distribution that are impacted. There is an uneven distribution of rainfall, and participants noted that the length of dry periods is on the increase. LGP participants in the local government located in highlands note that drought is a climatic hazard, leading to water shortage, with notable negative impacts on the farmers' crops, livestock, and income. These participants suggest that rainfall is often not sufficient for their agricultural production and household needs. Field observation revealed that different household sources water from streams and boreholes.

Table 1 illustrates that apart from massive flooding in the low land local government area, there are similarities in climate change challenges as well as similarities in adaptation measures in both the low and high land local government areas. The most remarkable difference between the low land local government areas and the high land local government areas is their preparedness. LGP explained that even though climate change is leading to unpredictable rainy seasons, those in riverine areas are often more prepared, which inspires more proactive adaptation strategies. In the

Anam community, people come together to construct tall buildings to adapt to floods. Households are often not caught off guard as they proactively get temporal housing settlements and their boats ready for transportation as soon as flood starts.

In all the local government areas, it was indicated that the adoption of the adaptation measures frequently mentioned is moderate due to lack of resources. Though communities in the southeast are already implementing numerous strategies to cope with climate change, LG participants agree that the adaptation measures are carried out on individual, group, and community levels. The reasons given for low adaptive capacity vary from access to funds, lack of climate change awareness, and lack of human resources in the face of climate change. Nigeria context throws light into how physical vulnerability interacts with social vulnerability in climate change adaptation issues. Looking at climate change as both biophysical and social problems allows political and socioeconomic measures to evaluate the effects on the poor and vulnerable.

Adaptation Policies and Practices in Nigeria

Policy Implications of Adaptation Governance in Nigeria

Since UNFCCC first conference in 1995, nations have convened to institute and implement binding climate agreements, either as regards to mitigation or adaptation. These binding agreements have lasting impacts on how global climate treaties and national climate policies evolve. These agreements also help determine how financial resources to adapt are distributed (Gurwitt et al. 2017). Nigeria has been engaging in international climate policy negotiations since 1994 when the country becomes a party to the United Nations Framework Convention to Climate Change (UNFCCC). Nigeria ratified Kyoto Protocol in 2004 and submitted the first national climate communication in 2003 and the second national communication in 2014. United Nations Framework Convention on Climate Change provides funding to developing countries with National Adaptation Plans of Action (NAPAs). Under such treaties, countries are required to develop NAPA to adapt to climate change. Nigeria prepared its National Climate Change Action Plan in 2011, which led to the Nigeria Climate Change Policy's approval in 2012.

NAPA provides Nigeria and other least developed countries (LDCs) with an opportunity to meet their urgent and immediate needs for adapting to climate change. In 2015, Nigeria prepared its Intended Nationally Determined Contribution (INDC) and signed the Paris Agreement in 2017. These policy documents' common objective is to demonstrate political commitment to adaptation and communicate the overall government approach to adaptation. Nigeria's policy plan helps identify climate change impacts and vulnerabilities and identify areas where the country's adaptive capacity can be improved (INDC 2016). Adaptation policy targets different sectors of Nigeria's society such as agriculture, freshwater, coastal resources, forest, biodiversity, health and sanitation, human settlement, energy, transportation and communication, industry and commerce, disaster, migration and security, livelihood, education, and vulnerable groups. Nigeria Climate Change Action Plan and INDC

report recognize that achieving an adaptation goal would require international support due to its low adaptive capacity. As explained in (BNRCC 2011), Nigeria National Adaptation Strategy and Plan of Action on Climate Change, Nigeria seeks to:

- Detail financial needs assessment to accurately determine the economic costs of climate change adaptation
- Revise the National Fiscal Policy to incorporate the cost of climate change adaptation
- Create a national financing mechanism to support real adaptation needs
- Access necessary international adaptation funding and technologies and manage those funds well

The above are top-down measures that would trickle down to the local level. Within the Nigerian climate policy document, the role of the federal government, the state government, the local government, the private sector, and civil society are made explicit. The federal government is responsible for instituting policies while the local government is responsible for implementing adaptation policies. The issues emphasized in Nigeria's Plan of Action are issues of collaboration, transparency, and finance. BNRCC (2011) report indicates that the federal and state governments would collaborate with the local government to strengthen communities' adaptive capacity by providing:

- Information and technological know-how, facilitating financial and other measures
- Put in place adaptation communication to allow all stakeholders to participate actively in climate change adaptation (NASPA-CCN, 2011)

However, FG participant notes that Nigeria's adaptation policy is increasingly influenced by intergovernmental organizations, as the submission of these documents and reports is relevant to obtain proper support. FG and SG participants explained that adaptation policies encompass climate change issues affecting all Nigerians and strategies to solve those issues. On the other hand, LG participants indicate that the adaptation policy is a one-fit document that lacks knowledge of local problems and solutions. Proposals for an international climate change adaptation policy recognize local representation, even though there are hardly any inquiries to ensure local representation inclusion.

Actors Perspective on Adaptation Governance in Nigeria

FG, SG, and LG participants were asked about their role in climate change adaptation practices. All the FG participants claim that they have engaged in different adaptation practices. Twenty percent of SG participants admitted that they had taken no action but are aware of several adaptation projects. The LG participants claim to

have engaged in different adaptation activities such as road construction, house construction, helping community members during rescue operations, and helping to deliver aids.

When asked about who is responsible for climate change adaptation practices, FG and SG participants were quick to point fingers to developed nations. They claim that Nigeria has benefited from international climate change adaptation funds; however, LG participants explain that individuals and groups carry out adaptation practices on a low scale, as the funds have not translated into effective adaptation practices in the local government areas in the southeast. All participants perceived the role of local government in different ways. The FG participants thought that the local government is getting the necessary resources to help communities address climate change issues. The SG participants are aware of the local government plight as it relates financial and technological resources but insists that the local government is in the position to help local communities adapt.

Interestingly, LG participants think that local government programs to address climate change are indigent. The main reason for this perception appeared to be communication and governance issues. Communication issues bother on perceived lack of consultation and transparency on the part of the state and federal government. The reason for the governance issue included the perception of autonomy and mistrust of the state and federal government. LG participants expressed that federal and state government interferes in local government matters.

When asked about the collaboration in climate change adaptation, the FG participants rate collaboration between the three government levels as excellent. The SG participants rate the relationship between the federal and state government levels as good and state with local government as fair. The LG participants thought there is almost zero collaboration between the local government and other government levels. Eighty percent of LG participants describe the collaboration between the local and the other government levels as servant–master collaboration.

Equity and Justice in Adaptation Policies and Practices in Nigeria

Global equity and justice are essential to plan and mobilize the resources needed to implement adaptation actions. However, it could not be straightforward for international policy to lay claim in sovereign affairs taking place within a sovereign territory. The dilemma of equity and justice in climate change adaptation takes different dimensions in Nigeria. In Nigeria, like many developing countries, contributing minimally to climate change issues, climate variability has become a significant threat to survival and sustainable development, especially for vulnerable individuals and communities (Ilevbare 2019). Nigeria is vulnerable to climate security issues with low adaptive capacity.

On the one hand, there is a top-down international rule system to promote adaptation ambition and accountability. On the other hand, climate change implicates domestic sensitivities in Nigeria. There is a diverging perception of how global equity and justice scheme is impacting Nigeria adaptation policies and practices. The

result indicates that there is a fundamental difference between interpretations of equity and justice by FG, SG, and LG participants.

In this section, a perceived overview of adaptation policy and adaptation practices will be presented. A shared perspective on equity and justice is essential not only for transparency but also for ensuring that fair and just adaptation reaches the most vulnerable people. Those at the federal and state level view adaptation as the responsibility of the developed country that has contributed most to climate change issues, while those at the local level think adaptation is the responsibility of the national and state government. This view is reflected in the policy report, which indicates that Nigeria needs assistance from international, regional, and non-governmental organizations to reach its intended adaptation goals (INDC 2016). LG participants indicate that the vulnerable local government is struggling to meet adaptation requirements despite the fund Nigeria government acquires for adaptation projects. Results show that there are several reasons why justice eludes the vulnerable communities. FG participants claim that Nigeria, as a country, still lacks the technological and financial resources despite funding from international and regional agencies. SG and LG participants agree that resources for adaptation are lacking in all government levels but argue that other factors play a significant role in poor adaptation practices. The common factors mentioned are the institutional context, social structure, power relations, and fiscal capacity for the effective management of natural resources and adaptation funds.

In Nigeria, social structure can be viewed through institutionalized relationships organized around family, religion, education, politics, media, and economy. These institutions organize the social relationship of the southeast to other regions of Nigeria. The southeast and southwest are predominantly Christians, while the northeast and northwest are predominantly Muslims. The different zones with various ethno cultural groups merged into one country in 1914. The different zones have different tribal groups, languages, and cultures. The differences in culture, politics, and tribal identification affect people's relationships with one another. Culture and ethnoreligious politics influence the distribution of resources in Nigeria (Brown 2013).

It was previously found that political corruption and bad leadership affect the southeast zone (Ogundiya 2010). Southeast is a zone where an estimated 50% of the population feel that they are not part of Nigeria. This resentment can be attributed to the Biafra Civil War that killed millions of southerners from July 1967 to January 1970. The southeast feels marginalized, leading to some citizens advocating for fresh separation (Olajide et al. 2018). LG participants explained that due to Nigeria's political structure, the southeast lacks resources and infrastructures, which makes adaptation more difficult. Unequal policies and patterns of government structure driven by national and regional political and economic priorities benefit a particular segment of society while making others more vulnerable. Another issue in the southeast is that the service and industry sector are paid more attention at the expense of small-scale agriculture and fisheries (Nzeadibe et al. 2011), even though LG participants note that the farming communities are the most vulnerable in the southeast.

Nigeria operates federalism with an overconcentration of power at the national level (Akinsanya 1999). In this aspect, the politicians at the national level hold a more considerable amount of power to determine what happens to the vulnerable local population as regards climate change impact. Local government lacks autonomy and depends on the state and national government. This dependency leads to weak institutionalization and local government underutilization, allowing constant intervention from the state and federal government (Acheoah 2018). Adaptation policies are formulated at the state and national levels while adaptation practices take place at the local level. LG participants explained that local knowledge is often not sought during policy formulation, making it challenging to implement such policies in practice. When the state and federal government neglect the most vulnerable participation at the local government, vital communication that encourages collaboration is lost.

Interview and field observation indicate that Nigeria's institutional capacity for climate change adaptation at the federal, state, and local government level is undeveloped and weak. Oulu (2015) argues that establishing effective institutional frameworks is crucial for climate change adaptation. Even with the presence of adaptation policy and climate change department at the federal level, adaptation practices are carried out by the existing National or State Emergency Management Agency (NEMA and SEMA). These two agencies were not designed for climate change adaptation. Only two of the local government areas in the southeast have a Local Emergency Management Agency. NEMA is an existing risk management agency that takes the issue of climate change adaptation as one of its many functions. Climate change adaptation and mitigation goals are now assigned to the ministry and department of the environment. However, LG, SG, and FG participants explain that proven competencies and technological resources in the existing institutions are low.

The budgetary constraint is one of the factors inhibiting adaptation in local communities in Nigeria. However, participants from the federal, the state, and the local government areas have different explanations on how budget constraints hinder adaptation. FG and SG participants claim that budgetary constraints are because of Nigeria's poor economic condition. The LG participants attribute budget constraints to the local government's lack of financial independence. LG participants suggest that the local government also lacked autonomy that contributes to its lack of financial independence required to tackle the issue of climate change adaptation. Fieldwork observation indicates that local government relies on SEMA for relief and settlements for internally displaced people. LG participants explain that the local actors that know the communities well are often not consulted during these visits.

Conclusion

This chapter recognizes that adaptation practices in local governments in southeast Nigeria have equity and justice implications. Environmental equity and justice focus on ensuring that the most vulnerable communities and countries are not left to bear the burden alone. It was argued that climate justice should include mechanisms to ensure that most impacted at the local level have their interests considered (Thomas

and Twyman 2005). However, this chapter found that vulnerability to climate change is mostly experienced at the local level, with the burden of adaptation falling disproportionately on the local government areas. Though Nigeria has developed adaptation policies that detail strategies to reduce and avoid climatic impacts, the local government is excluded from decision-making in adaptation policies, and thereby their vulnerability is often not reflected in the policy documents. This is because climate change adaptation policies and practices at the national level of governance are not open for representative dialogue, especially with the local government's participation. This chapter argues that by excluding the local government in the southeast in adaptation decision-making, the national adaptation plan and policies ignore local adaptation needs and knowledge and do not reflect local vulnerability. Beyond local participation, the interaction between the national authority and local knowledge needs to rely on fairness and accountability. Unless the most vulnerable adapt, risks associated with climate change could increase vulnerabilities, and more inequality.

Financial and technological resources remain crucial in helping the poor and vulnerable communities adapt to climate change risk and climate security issues. Access to these resources is vital for adaptation practices. The United Nations Framework Convention on Climate Change (UNFCCC) provides funding to ensure that the most vulnerable countries are not left to deal with climate change alone. The inclusion of local government in adaptation decision-making will ensure that global funding is easily translated into local practice and that adaptation resources are correctly channeled. This chapter also indicates that it is essential to understand issues such as social structure, power relations, institutional context, and budgetary constraints and how they affect local government adaptation. Thus, local government adaptation practices are not independent of preexisting sociopolitical and governance structures in developing countries like Nigeria. This chapter recommends the local government's inclusion in decision-making and formal adaptation governance to encourage partnership and transparency.

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**Local government climate change adaptation process in southeast
Nigeria – assessing the impact of contextual factors.**

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