



**Linneuniversitetet**

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Bachelor Thesis

# Climate Change: The threat multiplier in pastoral conflicts

*A case study on the pastoral conflicts in Nigeria*



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## Abstract

Agricultural communities in Nigeria have faced years of conflict between pastoralists and farmers. These conflicts have caused the lost of human life as well as affected resources such as crops and cattle negatively. Nigeria is also facing new challenges in the form of climate change that is affecting the pattern of these agricultural communities, possibly aggravating the current tensions between the actors. Pastoral conflicts have often been considered religious or ethnic conflicts however it is important to explore the possibility of other causes that can affect these conflicts such as climate change. Therefore will this study focus on pastoral conflicts in Nigeria and how climate change acts as a threat multiplier in this case. It is valuable to explore the possibility of climate change being an actor in conflict as it can help to further understand similar cases.

The pastoral conflicts in Nigeria will be studied in order to identify climate change as a threat multiplier. In addition, the identification will be done by exploring different categories such as *worsening livelihood conditions*, *worsening relationship between actors* and *the distribution of local resources*. These categories are based on different approaches of the theory of *relative deprivation* and will together create an analytical framework. That will help structure the data and to create an abductive text analysis where the case of Nigeria is placed in relations with this framework.

In particular, the findings of the study suggest that climate change can act as a threat multiplier in the case of the pastoral conflicts in Nigeria. The issues that can both be related to climate change and the pastoral conflict is that of land resources. Land resources is suggested by the findings to have significant role in the conflict between the farmers and pastoralists. It is also directly affected by the increased temperature that Nigeria have been experiencing the past couple years. Further research should focus on exploring and comparing cases that have has similar issues.

*Key words: Climate Change, Pastoralists, Conflict, Farmers, Threat Multiplier, Nigeria, relative deprivation*

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## List of Abbreviation

**FAO** - Food and Agriculture Organization

**ICG** - International Crisis Group

**IFAD** - International Fund for Agricultural Development

**IPCC** - Intergovernmental Panel on Climate Change

**NFDP** - National Fadama Development Project

**UN** - United Nations

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# 1. Introduction

Human societies has always been dependent on nature and all aspect of the human life stems from nature such as food, water, energy or shelter. Furthermore, humans have for centuries been exposed to different environmental and climatic conditions. Over time has these diverse climatic conditions posed different forms of challenges to the human society such as drought, heavy precipitation, wildfires and cyclones. The climate and the environment is coexisting with the human society and are also affected by our actions. We are today witnessing a change in both magnitude and speed of this climatic change which is the result of the human activities that altering earth's climate system (Mobjörk et al, 2016).

A global assessments of data since 1970 presents evidence of anthropogenic warming has impacted both physiological and biological system (IPCC, 2007. Referred in Mohamed Salih, 2009: 5). These evidences shows that many natural systems are being affected by regional climate change, especially rising temperatures. Furthermore, it states that the rising temperatures increases the precipitation in some regions thus reducing the access to drinking water (Mohamed Salih, 2009: 5). Access to proper and clean water is a key foundation to achieve the Sustainable Development Goals and it also affects other basic aspect of the human livelihoods such as food security.

According to Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2014) renewable surface and groundwater resources will be reduced due to climate change, especially in areas that are dry and in the subtropical regions. It also states that this will impact and intensify competition for water among sectors. Furthermore, the World Food Program (2014) also states that climate-related change and disasters such as drought, rainfall variability and floods have the potential to destroy crops and therefore unfavorably impact livelihoods and food security as well as exacerbating poverty. Climate change will act as a threat multiplier by exacerbating current vulnerabilities to food security such as diminishing agricultural yields and reduced production in vulnerable areas, and intensifying conflicts over scarce resources. In addition, this would also lead to new humanitarian crisis and increased displacement of people (IPCC, 2007).

Furthermore, studies that focus on less organized forms of violent conflict suggest that communal conflict is a more plausible outcome of environmental degradation than

large-scale violence between or within states. Several studies show how competition over scarce resources primarily reinforces low-intensity and long-lasting conflicts. This should be expected to be valid also for climate-related violent conflicts. Pastoral conflicts between herders and farmers have been widely discussed in the context of climate-related conflicts, Conflict between pastoralists and farmers has existed since the beginnings of agriculture, but low settlement densities kept the incidence of clashes at a low frequency until the twentieth century (McNeish, 2010).

The introduction of cheap trypanocides and other veterinary drugs in West Africa have increased herd sizes to levels that forced herders to seek pastures outside their traditional routes and range. Improved human health in West Africa has increased overall population and leading to increased pressure on arable land. However, the farmers and pastoralists have been able to coexist much due to the persistence of slash and burn agriculture which is typical in semi-arid and subhumid. The slash and burn technique created an opportunity for farmers and pastoralists to exchange crop residues for manure. However, This coexistence changed when the expansion of riverine and valley-bottom (fadama) cultivation emerged in 1980s which meant that pastoralists and farmers are now competing very directly for access to river banks with a consequent increase in conflict (Blench, 2010).

According to the report from the International Crisis Group (2017), thousands of people in Nigeria have been killed in conflicts between farmers and herders in the past five years. A precise number is difficult to find, however, a survey of open source reports indicates an annual average of fatalities to possibly reached more than 2,000 from 2011 to 2016, which also for some years exceeded the numbers of the Boko Haram insurgencies. Pastoral conflicts have caused the destruction of livestock, properties and crops as well as forcibly displacing thousands of people. The reactions from the Nigerian federal and state authorities have been lacking and a large portion of there capacity have been directed towards Boko Haram. Due to this, little have been done in order to address the issue of rural insecurities in the North.

The inability of the Nigerian federal and state authorities to act and address the insecurities in the North, which calls for more comprehensive studies that could lead to broader understanding. Therefore will this thesis focus on this case to help further the research on pastoral conflicts in Nigeria. In addition, research on pastoral conflicts are generally broad and focuses mostly on larger areas in Africa. The nature of pastoralism

makes these research relevant, however more specific case study research can bring in another dimension into these issues.

The research problem that has been identified regards the issue of mapping the causes of the tensions between the pastoral and farming communities. For instance, pastoral issues in Nigeria have earlier been reported as ethnic or religious clashes in Nigeria. This issue creates further misunderstanding of the conflict and effective solutions is therefore difficult to implement. However, studies (Mobjörk et al, 2016., ) has shown that pastoral conflicts in general often have their roots in struggles over land or water resources, and any research into these events needs to note this phenomenon. Struggles over land and and water resources are closely connected to the climate and any changes in this area can directly cause further pressure on the common resources. This thesis will therefore focus on identifying climate change as a threat multiplier in pastoral conflicts in Nigeria.

## 1.1 Research Objectives and Research Questions

The objective of this thesis is to identify and provide a more comprehensive understanding on the relationship between pastoral conflicts and climate change. This will be presented in a abductive text analysis focusing on the case of Nigeria. By looking at climate change as a threat multiplier one can argue that there are more to these conflicts than what has been reported. Climate change is a topic that is broad and therefore needs something to ground it to, such as pastoral conflicts. Therefore will the objective of this thesis also be to investigate the connection between pastoral conflicts and climate change. The questions that the thesis will provide an answer to are the following:

- *In what way can climate change be identified in pastoral conflicts in Nigeria?*
- *How can climate change act as a threat multiplier in pastoral conflicts in Nigeria?*

## 1.2 Previous Research

Environmental stress on resources, and its link to violent conflict have been discussed in several studies. In the early 2000s, different scholars brought the issue of natural resource related conflicts to the peace development sector (Buzan et al, 1998., Homer- Dixon, 1998., Collier, 2008). For instance security and environmental stress in the field of international security has been discussed by Buzan et al (1998: 84) which is based on the Copenhagen

School of Securitization. They underline the links between social conflict and environmental scarcity, and states that environmental stress emphasizes root causes of social threats and manifests itself in other sectors. For instances inadequate distribution of scarce water threatens basic human needs. Buzan et al (1998: 84) further states that slow environmental change such as erosion and overuse are not securitized even though it has contributed to conflict. Nevertheless, interstate wars, ethnic conflicts, or civil strife can be caused by environmental degradation.

Another scholar that has explored the topic on how environment affects social outcomes is Homer-Dixon (1999), who main focus is on scarcity of renewable resources such as water. He states that renewable resources combined with other social factors can contribute to violent outcomes on a macro-level such as insurgencies and ethnic tensions. Homer-Dixon further emphasizes ecological marginalization as an interaction of social outcomes and environmental effects. It occurs when abrupt population growth overlaps with existing inequalities to scarce resources. Furthermore, Homer-Dixon also states that environmental scarcities are already contributing to violent conflicts in many parts of the developing world. He further states that these conflicts and the violent nature of it will in the future be induced or aggravated by scarcity.

Gurr further follows Homer-Dixon notion and states that vulnerable societies will be more affected by environmental scarcities, and economic and social crisis they cause. The crisis environmental scarcities causes can in fact already be seen in poor societies in the form of water scarcity, deforestation, and especially the lack of fertile land. Furthermore, Barnett (2003) identifies environmental problems as a security problems and that it presents a significant risk to the livelihoods, culture and health of millions of people across the globe. His research mainly focuses on intra-state conflicts as these appear to be affected by environmental change more than inter-state conflicts. Barnett (2003), further states that past research on environmental-related conflicts have agreed on that there are a connection environmental change and violent conflicts. However, these links can be vague as well as ambiguous and it also not the only or most important factors leading conflicts.

Barnett (2003) research often refers to other widely accepted scholars such as Baechler (1999), Homer-Dixon and Percival (1996), and Kaplan (1994), which argue that scarcity of renewable environmental resources can contribute to violent conflicts. However, this argument have been criticized by for example Collier (2000) who argues that it is the

abundance of natural resources that pushes conflict. Through statistical modeling, de Soya (2000) and Collier (2000) both identifies scarcity of renewable resources to not correlate with political instability or ethnic tensions. Furthermore, it has not been shown that environmental change is the only factor that leads to conflict.

Pastoral conflicts have in recent years been an area of research when it comes to climate-related conflicts. For instance, Mobjörk et al (2016) state that pastoral livelihoods have due to climate change led to a change in their mobility patterns. Causing the pastoralists to move beyond their traditional herding ground, which further affects their livelihoods both economically and socially. Mobjörk et al (2016) identifies East Africa as a region where pastoral conflicts have been affected by climate-related factors especially drought. These conflicts arose due to changes in pastoral routes, which have traditionally been negotiated between pastoralists and other groups that would be affected by these routes.

In addition, there has been a great amount of research on pastoral conflicts in Kenya and areas surrounding. For instance, Omosa (2005) discussing conflicts over waters in pastoral communities. This findings from Omosa (2005) research concludes and confirms the assumption that water is a critical resources for pastoral livelihoods as it determines where and when people and livestock settles. Conflicts arise according to this research when there are a over-concentration of pastoralists in one area which will lead to competition of the scarce water resources. Eventually, resulting in conflict.

Recent studies regarding climate change have to a large extent focused on its relationship to security (Huntjens & Nachbar, 2015). However, Huntjens & Nachbar (2015) states that despite the increasing attention on climate change in conflicts, there are still no clear or definite answer of how global warming can affect security on various levels. The direct correlation between climate change and violent conflicts have been quantitatively measured by different scholars, however, the results of these research have been mixed (ibid). Lack of clear evidence of this issue have led to research that mostly focuses on how climate change can magnify existing socio economic issues, which in turn can threaten human security (Mobjörk et al, 2016). Despite of the growing amount of research in this field, more single cases studies are needed such as the one in Nigeria. More case studies can increase the knowledge of the issues that climate change has the possibility to create.

### 1.3 Methodological Framework

This study will be conducted as an abductive text analysis as it is an analytical process where climate change as a ‘threat multiplier’ in conflicts will be understood with the use of an analytical framework. A qualitative research strategy was selected for this study is based on the nature of the research question as it can not be answered in a quantitative research. Furthermore, this thesis will adopt an abductive reasoning, as the findings will be used to identify how climate change can act as a threat multiplier in the this case. The method of structured, focused comparison as been adopted in this thesis. It is a method that include includes a set of general questions which are generated based on the analytical framework and research objective.

### 1.4 Limitations and Delimitations

One of the limitations of this study is the choice of only focusing on one country which can provide a deeper understanding of the case. However, it will not be possible to make any generalization about how climate change can act as a threat multiplier as the result will differ from country to country. The conclusion from this study might not be the same as the conclusion of another study that used another country as a case. Nonetheless, it will enable an understanding that can contribute to further studies on this topic as well as provide a broader knowledge about climate change. To conduct a desk-study is also another possible limitation as I will rely on data collected by secondary sources and therefore will there be a limitation to the findings of the study.

### 1.5 Analytical Framework

The theory of relative deprivation (RD) will in this research be used as a base for the analytical framework. RD is a theory that have been widely used in different fields of study such as political science (e.g., Gurr, 1970) economics (eg., Yitzhaki, 1979) and history (e.g., Snyder & Tilly, 1972). The theory of relative deprivation have been interpreted and used in different fields of study. This thesis will be using the RD used by Gurr (2010) and Smith et al (2012) in order to outline that most comprehensive theoretical framework.

Both Gurr (2010) and Smith et al (2012) have moderately similar approaches to RD except for some structural differences. For instance, Smith et al (2012) interprets RD from a individual level compared with Gurr (2010) who interprets it from a collective group level.

Smith et al defines it in terms of three steps, *cognitive comparison*, *cognitive appraisals* and *justice-related affect*. In order to feel relative deprived the individual have to experience these three steps which as an outcome can lead to violent behaviour. Gurr (2010) on the other hand describes RD as the gap between what people think they deserves (*value expectations*) and what they actually think they can get (*value capabilities*). The gap or discrepancy that is created can according to Gurr potentially lead to tensions and frustrations. Even though both Gurr (2010) and Smith et al (2012) have significantly different views of RD, they still share moderately similar outcomes.

The analytical framework will use these two approaches as well as part of Mobjörk et al (2016) framework on climate related security risks. Together they will create categories that will be used as a tool of analysis as well as structuring the data in clear and understandable way. These categories will have a set of questions that will be act as compass in this study. Both the findings and the analysis will be based on these categories which will limit the outcome of the results.

## 1.6 Structure

This study will in the second chapter provide a more detailed description of the research method used in this thesis, such as text analysis and abductive approach. In addition, this chapter will also mentioned the sources that the data have been collected form. It will be followed by a third chapter that will entail an analytical framework where two approaches of relative deprivation will be provided in detail. The third chapter will also include the framework that has been broken down into different categories, it will also entail a description on the usage of the categories. Moreover, the fourth chapter will provide definitions of the main actors in the conflict as well as the background of the current situation. The fifth and sixth chapter will focus on the findings and the analysis of the findings. In these chapter the categories chosen for this study will be guiding the reader through the text. Finally, a conclusion will be provided with some recommendation for further research.

## 2. Method

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This chapter will explain and justify the choice of methods, research design and sources. As well as discussing the limits and delimitation of this thesis.

### 2.1 Qualitative Research, Desk Study and Text-Analysis

This study will be conducted as an abductive text analysis as it is an analytical process where climate change as a ‘threat multiplier’ in conflicts will be understood with the use of an analytical framework. The aim is to explore how climate change acts as a threat multiplier and to identify the causal factors to how climate change can increase the risk of violent conflicts in the chosen case. A qualitative research strategy was selected for this study is based on the nature of the research question as it can not be answered in a quantitative research. The data available on climate related conflict are quite broad and do not cover specific cases. Therefore is the possibility of conducting quantitative research on this topic not in line with the aim of this research.

Further, this thesis is interested to identify and provide a more comprehensive understanding on how climate change can act as a threat multiplier in pastoral conflicts. Due to this objective, a qualitative research strategy is suitable, as yes and no questions cannot generate sufficient answers concerning the possible effects of climate change in pastoral conflicts. Therefore, will this research strategy produce insight instead of numbers, in other words an adaptation of a qualitative research strategy before a quantitative one (Bryman, 2012:35-37).

### 2.2 Abductive Reasoning

This study will be an abductive study which according to Bryman (2016) is when the researcher grounds a theoretical understanding of the studied people and its context with their own worldview. By understanding the worldview of the participant, the researcher must have a social scientific view of the social world as seen from their perspective. Abduction is the theoretical account being grounded in the worldview of the participants, this to be able to have a wider perspective of the findings (Bryman, 2016: 401).

This thesis will adopt an abductive reasoning, as the findings will be used to identify how climate change can act as a threat multiplier in the case. The analytical framework that has incorporated two different approaches of the theory of relative deprivation as well as Mobjörk et al (2016) study on climate change as a threat multiplier, will be used to guide the research and enable a deeper understanding of the issues in the selected case. Furthermore, an abductive reasoning is most suitable for this thesis as the aim is not to test theory but to understand and analyze the findings through the view of the analytical framework.

An abductive research compared to a deductive or inductive research has the possibility to interpret the findings more freely. It also avoids the weakness that deductive research can have such as the lack of clarity when it comes to how to choose theory to be tested through formulating a hypothesis. Furthermore, abductive research also avoids the issues that comes with inductive research such as the notion of “no amount of empirical data will necessarily enable theory-building” (Saunders et al, 2012).

### 2.3 Structured, Focused Comparison

Structured, focused comparison is a method that includes a set of general questions which are generated based on the analytical framework and research objective. These questions are asked systematically to a set of cases and each case is asked the same set of questions, in order to compare findings on the same basis. The method is used to detect patterns and moves away from the ideas of separate studies of a phenomenon (George & Bennett, 2005:67-72).

This method have been adopted to this thesis in order to analyze climate change as a threat multiplier in the case of the pastoral conflicts in Nigeria. However, instead of comparing different cases, it will be used to structure the case and focus on certain aspects of the theory. The case will be structured into different categories which will be based on previous research and the theory of relative deprivation, which will be the analytical framework of this thesis. In addition, the categories are based on the found qualities in previous research and chosen theory, that are indirectly affected by climate change and are essential in violent conflicts.

In order to further structure and focus this thesis, certain questions will be asked. The intention of these question is to guide the reader through the findings and will be based on the nature of the categories. These questions will be asked systematically to the three outlined categories in order to identify how climate change can act as a threat multiplier in pastoral

conflicts in Nigeria. However, these questions asked will not be the same for each category and will only reflect the categories that has been chosen for this thesis.

## 2.4 Case Study: Limitation and Delimitation

This study will be done as a case study which will be useful as it enables a deeper understanding of the subject. Single case study is also useful for understanding and explaining how context influences certain cases as well as answering questions about causal attribution and contribution. According to Bennett & George (2005), case studies have the potential to achieve high conceptual validity as well as identifying and measuring the indicators of the chosen theoretical concept. Compared to statistical studies which are using a larger sample of cases and therefore runs a higher risk of “conceptual stretching”.

The case was firstly selected based on it being a country that have experienced pastoral conflicts, secondly, it is one of the sub-saharan countries that have been affected by the climatic changes and lastly, specific research done on climate change and pastoral conflicts in Nigeria are limited. Therefore will further research on this case contribute to a deeper understanding of this type of conflicts. This choice will however also delimit this research and the outcome will only reflect the situation of the chosen case. Furthermore, the delimitation to focus on pastoral conflicts was done due to the it specific nature and that it has in recent years been connected to climate-related conflicts (Mobjörk et al, 2016).

## 2.5 Choice of Sources

The data used for the study will be based on secondary sources, the findings will therefore be limited to the data collected by others on the topic. The secondary sources will be reports and other written documents by for example UN (United Nations) regarding the case, as well as climate change and conflicts in general. This study has also used data and documents from electronic databases such as Google Scholar and EBSCO as well as World Bank reports. It is important to take into consideration that this study as it is based on secondary sources, has already been analyzed ones before and the result could therefore be significant different if another research method would be adopted (George and Bennett, 2005).

The sources used on the case of the pastoral conflicts in Nigeria are produced between the years 1992-2017 and consists mainly of academic journals or reports. It also contains the different aspects of climate related changes in the country both direct and indirectly. The

quantity of sources specifically targeting climate change and its affect on pastoral conflicts in Nigeria was limited, which may not be an absolute representation of the situation in the country. Furthermore, the sources used in this study are mostly in English and sources regarding pastoral conflicts in Nigeria in other languages has been excluded, which will limit and delimit this study.

### 3. Theoretical Framework

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The analytical framework that will be provided in this thesis is composed of two different approaches of relative deprivation. This chapter will first discuss the theory and the usage of the theory in this thesis as well as some criticism of the theory.

#### 3.1 Relative deprivation

Relative deprivation (RD) as a concept explaining violence has been discussed by different scholars (Stouffer, 1949., Merton, 1957., Pettigrew, 1967). It has been widely used across different fields such as political science (e.g., Gurr, 1970), economics (e.g., Yitzhaki, 1979) and history (e.g., Snyder & Tilly, 1972). The theory has been incorporated to suit these different fields of study, focusing on the most necessary aspects of the theory. According to Smith et al (2012) sociologists have viewed RD as a social comparison between people (interpersonal) and within a group (intergroup), while political scientist emphasizes people's present situation compared with either their past/future desires or deserves selves (Gurr, 2010). However, the basic structure of RD is moderately similar across the different social science disciplines.

##### 3.1.1 Smith's Approach

It is defined by Smith et al (2012) in terms of three steps. Firstly, an individual must compare itself to others, if this comparison is not made, there is no RD, also called *cognitive comparisons*. In order to feel relative deprived one must compare oneself to either another group or another individual. Secondly, the individual must perceive itself or his/her ingroup to be in a disadvantage, called *cognitive appraisals*. According to Carpenter (2016, referring to Lazarus & Folkman, 1984), cognitive appraisals is the process by which potentially stressful events are evaluated for meaning and significance to individual well-being. There are two major forms of cognitive appraisals: a) primary appraisals and b) secondary appraisals. These forms explains how an individual is evaluating a potentially stressful event, taking personal well-being into account. As well as assessing the situation and determining how it can be changed, accepted, understood and avoided. Primary appraisal is formed by factors based on personal thoughts and situations, for instance, personal beliefs and commitments

Finally, the perceived disadvantage must be viewed as unfair, and that the ingroup the perceiver belong to is thought to deserve better. This can in turn lead to angry resentments towards the outgroup, thus *justice-related affect*. Justice-related affect presented by Smith et al (2012) as a requirement for comparing situations to another possibility of what 'ought to be'. It further states that this step is what distinguishes this form of RD from other forms of psychological theories, as it largely emphasizes entitlement or 'deservingness'. The role of deservingness is broadly defined in RD, political science research illustrate deservingness as people's comparisons with themselves at different points in time.

The outcomes of RD according to Smith et al (2012), will possibly lead to intergroup attitudes and collective actions as it is one of many responses to deprivation. Four categories of RD outcomes are presented, *collective behavior, intergroup attitudes, individually oriented behaviors and internal responses*. Firstly, collective behavior had been widely criticized as it focuses on intentional acts of riots such as eagerness to blocking roads, spike trees and join strikes. Secondly, intergroup attitudes focus on attitudes towards political policies, for instance immigration. The types of outcomes regarding these attitudes can be prejudice toward outgroup vs ingroup identification such as nationalism. Thirdly, individually oriented behavior, which includes deviant behavior such as absence from work, bullying and crime. Finally, internal responses such as psychological stress and physical health, for instance, depression and anxiety, and disorders.

### 3.1.2 Gurr's Approach

Scholars such as Gurr (2010) have further developed this concept and present it as the relationship between frustration and aggression as the psychological dynamic between intensity of deprivation and the potential for collective violence. Relative deprivation (RD) is here defined as the "*discrepancy between what people think they deserve (value expectations) and what they actually think they can get (value capabilities)*", which can potentially lead to tensions and frustrations. Gurr (2010), compared with Smith et al (2012), applies the RD theory in the context of political violence, especially violence by men as a collective group. He uses the terms *values* to describe desired events, objects and conditions

which men strive to achieve. It is also the main goal for the human motivation as it also is closely linked to the basic 'needs' or 'instincts' of humans.

Gurr (2010) presents two different values that will be used in this study. Firstly, *welfare values* which contribute directly to physical well-being and self-realization, including physical goods such as life-food, shelter, health services and physical comfort. Self-actualization have according to Gurr (2010:25) been argued by Maslow and Davies as an end itself for many men. He further refers to Maslow's hierarchy of needs (2013) when evaluating some of the welfare values. Furthermore, Maslow's model presents the most fundamental human needs as physiological need and states that an individual that has lost everything such as food, safety, love and self esteem is more likely to first turn to the most basic of need such as food before any other need.

Secondly, *power values* which decides the extent to which one can influence the actions of others without having unwanted interference by others in their own actions. It relates to the individual's desire for self-determination and security, such as political freedom or freedom from disorders (Gurr, 2010). Maslow refers to these power values as safety needs and states that if the physiological needs are gratified, the emergence of new needs will be come to fore. However, if the society of the individual is well structured and gives them the sense of safety from criminals, tyranny and extreme temperatures, then safety needs becomes less important. Furthermore, Maslow argues that in order to see these safety needs one has to turn to the economic and social underdogs who share the common preference for a job with ownership and protection.

According to Gurr (2010), there are different patterns of relative deprivation. One of the patterns called decremental deprivation which is often created due to the decline in the production of material goods, the insufficient work of the political elite to resolve conflicts and it may also occur when losing scarce resources. Furthermore, the deprivation gap in decremental deprivation is when the perceived right to goods or conditions is constant, while the attainable goods or conditions substantially decline. Value position, defined by Gurr as the total amount of value actually obtained, may fall when material goods and capacities are declining. However, value capabilities have the possibility to fall among different parts of the society which is due to conflicts with other groups over scarce values, leading to an absolute loss. Decremental deprivation is stated by Gurr (2010) as being most

probable in traditional societies and that these societies are vulnerable to natural disasters as the possibility of violence increases.

Gurr concept of decremental deprivation is influenced by Sorokin's, *The sociology of revolution*, which holds similarities with Marx theory of revolution. In the article, *Toward A theory of Revolution*, Davies (1962) presents Marx precondition for widespread unrest and revolution. One of Marx most frequent beliefs is that degradation produces revolution and presents similar concepts as Gurr (2010) and Smith et al (2012). Instead of *values*, Marx speaks directly of needs and satisfaction, and that the gap between the want and what they get will lead to social tensions. Furthermore, the gap that is created will not necessarily lead to revolution, however, when the variable of the 'what they get' decreases, the gap expands and can therefore result in revolution. Marx argues that this type of degradation occur due to sharp change in the economic and social development of a society (Davies, 1962). While Marx presents economic and social development as the main causes of social tension, Gurr (2010) specifies these as not only political loss but also as resource loss.

### 3.3 Used in Research

The analytical framework used in this thesis is based on these two aspects of relative deprivation. RD together with other aspects of climate related frameworks will form categories which the analysis will be based upon. This will be presented in the chapter below along with explanations of the usage of RD.

## 4. Analytical Framework

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The conceptual content of the categories have been based on the theory of relative deprivation and other case studies on climate-related conflicts. These variables presented below will be subjects for exploration in this study. This section of the study will first discuss the criteria for identifying the categories. Furthermore, in the presentation of the categories, a set of general questions will be attached to each of the categories. The categories conceptualisation and nature will also be discussed as well as the justification of it. All of the categories that are examined in this study share important criterias that represents qualities that are indirectly affected by climate change and are essential in violent conflicts. These categories are based on the theory of Relative Deprivation, however, it will not delimit other intervening factors that can influence pastoral conflicts.

Some of the criterias outlined by Smith et al (2012) regarding relative deprivation are that there must be a *cognitive comparison*, a *perceived disadvantage* and *justice-related affect* in order for people to feel relatively deprived. These criteria establish the foundation of the main variables of *worsening livelihood conditions*, *competition over scarce resources* and *elite exploitation of local tensions*, which are directly linked to Gurr's (2010) different *values* that were outlined in the theoretical framework. The categories have been found to be interconnected and affect one another; therefore will these ties be mentioned and discussed. Furthermore, this following section is also partially based on Mobjörk et al (2016) study of climate-related security risks.

<b>CATEGORY</b>	<b>WORSENING</b>	<b>LIVELIHOOD</b>
<b>CONDITIONS</b>		
QUESTION 1	How has climate change affected livelihood conditions?	
QUESTION 2	Is the impact negative or positive?	

Worsening livelihood conditions relates to Gurr's (2010) *welfare values*, defined as physical well-being which includes having physical goods such as food, water and shelter, also referred as 'basic' needs. It is a cognitive comparison as the studied group must be relatively deprived and compare itself to others (Smith's et al, 2012). It is therefore necessary to look at

poverty, as worsening livelihood conditions often relates to economic hardship (Mobjörk et al, 2016).

Worsening livelihood conditions has previously been used as an indicator in climate-related conflict research. Mobjörk et al (2016) states that increased risk of violent conflict can under certain circumstances be affected by economic hardship (ibid). Climate change can then act as a threat multiplier by exacerbating the worsening conditions. Worsening livelihood conditions can according to Gurr (2010) also be aggravated by the perceived disadvantage of an identified group. For instance, socioeconomic differences can be perceived as unfair by one group and tensions as well as frustration towards an outgroup can emerge. In the context of climate-related conflicts, socioeconomic differences can be aggravated by environmental stress, and therefore can climate change act as ‘threat multiplier’.

<b>CATEGORY</b>	<b>WORSENING RELATIONSHIP BETWEEN THE ACTORS</b>
QUESTION 1	How has climate change affected the relationship between farmers and herders?
QUESTION 2	Is the impact negative or positive?

Worsening relationship between the actors relates to Gurr’s (2010) decremental deprivation which presents the dynamics between the perceived rights to goods and the achieved goods. Furthermore, the deprivation in this case is when the perceived rights stay the same while achieved goods decreases, resulting in a gap. Resources that used to provide them a sustainable livelihood might in the case of climate change decrease or become stagnant. This variable will examine situation where the perceived rights to goods stay the same while achieved goods decreases leading to potential migration.

According to Mobjörk et al (2016) people often migrate because they can no longer sustain themselves. Regional migration can in some cases result in violent struggles over natural resources. Changes in pastoral mobility patterns can be identified as a form of migration because of their transhumant livelihood. The main source of livelihood for most pastoralists are mainly by herding livestock and therefore rely heavily on mobility as a way

of coping with different climatic conditions. Migration per se is not what is important for pastoralists but the fact that they are forced to deviate from their normal mobility patterns, due to climate-related change, threatens their livelihoods.

<b>CATEGORY</b>	<b>DISTRIBUTION OF LOCAL RESOURCES</b>
QUESTION 1	How have climate change affected the distribution of local resources?
QUESTION 2	Is the distribution fair?

Distribution of local resources relates to Gurr's (2010) *power values* which refers to self-determination and the security of it, as well as *justice-related affect*. The redistribution of local resources can be perceived as a disadvantage that is unfair. This perceived unfairness, loss of power and security, can lead to possible resentments and social unrest. Elite exploitation of local tension is a variable that will specifically look into how local tensions have been exploited by the elite and if these local tensions are rooted in environmental stress on resources.

According to Mobjörk et al (2016) fueling inter-group violence can sometimes be viewed by political elites as an effective mean to divert attention away from their own issues, crushing political opponents or ensuring the continued support of their constituencies. Local struggles over scarce resources can in these situations be favorable for elite exploitation. Existing grievances and tensions can therefore be capitalized by the elites, this is possible due to the already present organizational structures that is necessary for violence.

## 5. Background

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In order to understand the relationship between pastoralist and farmers, a background of the conflict will be provided in this chapter. As well as short definition of two actors.

### 5.1 Defining Pastoralists

Pastoralism are often defined as the “*people who derive more than 50 per cent of their incomes from livestock and livestock products*” (Hassan, 2017), as well as “*social organization based on livestock raising as the primary economic activity*” (Merriam-Webster, 2018). These people are called pastoralists and live mostly in dry, remote areas. Pastoral systems are dependent on the well-being of their livestock and the intimate knowledge of the surrounding ecosystem. The livelihoods of pastoralists are adapted to the different natural, political and economic environments, which also can make them vulnerable to certain shifts in the climate.

Pastoralism can be divided into different categories which is defined by the pattern of their livelihood. For instance, pastoral mobility that is high and in irregular patterns is called nomadic. It is also most practiced in climates that can produce seasonal pasture but not sustain agricultural life (Barfield, 2011). The term transhumant is closely linked to nomadism except that there are a more regular movement to fixed locations. It is also the most dominant mobility system in West Africa (Ayantunde et al, 2014). The term sedentary can be used for pastoralists but it will in this thesis mainly be used for the farmers as it commonly is defined as being seated or still.

Furthermore, pastoralists generally inhabit zones where the potential for crop cultivation is limited due to low and highly variable rainfall conditions, steep terrain or extreme temperatures. Pastoralists that roam these areas which are unpredictable, vulnerable and dynamic have developed successful mechanisms of adaptation to maintain an ecological balance between themselves and the natural environment. It is therefore a system that is well adapted to the harsh and dry condition of West Africa.

### 5.2 Defining Farmers

Farmers are often defined as “a person who cultivates land or crops or raises animals (such as livestock or fish)” and sometimes even “a person who pays a fixed sum for some privilege or

source of income” (Merriam-Webster). This thesis will focus on the farmers that are mainly practicing crop cultivation. Most farmers in Nigeria are smallholders and uneducated farmers with low technological advancement, that practises rain-fed agriculture. Smallholders is defined as having farms that are smaller than 500 hectares (Calcaterra, 2013). Nigeria is considered to be a country with great agriculture potential however with low intensive agricultural practises the country seem to not experience any high productivity (Saraki, 2011). The farmers in Nigeria is generally poor as well as being one of the more disadvantaged and vulnerable groups (Apata, 2010).

### 5.3 Pastoral conflicts in Nigeria

Violent conflict between nomadic pastoralists and sedentary agrarian communities in Nigeria have in recent years escalated, threatening the security and stability of the country and have resulted in approximately 2,500 deaths in 2016 (International Crisis Group, 2017). However, the relationship between pastoralists and sedentary communities have historically been friendly, as both groups were interdependent on each others livelihoods. For instance, herders’ would in exchange for grazing rights fertilize the farmers’ land with their cattles. Tensions have over the past decades grown between these groups and violent incidents have emerged in at least 22 of Nigeria's’ 36 states (ibid). The factors that tend to trigger these disputes are related to land and water use, obstruction of traditional migration routes, livestock theft and crop damage. These issues could be linked to drought and desertification that have degraded pastures, dried up many natural water sources across Nigeria’s far-northern Sahelian belt.

In Nigeria there has been reported clashes between pastoralists and local farmers. For instance, violent incident between farmers and pastoralists in the village of Udeni Gida erupted when herdsmen led their cattle into rice fields which resulted in the death of a farmer. Following this incident, the local authorities in Borno and Plateau state decided to expel 700 pastoralists from the Borno state in the northeast and 2,000 from Plateau (Odoh & Chilaka, 2012). Other conflicts between herdsmen and their host communities had been reported in over 20 villages in Nigeria such as Ago Nla, Ago Kekere, Idi Ope Kekere, Olukore, Olokuta, Apena, Jaramosan, Akeeran, Alagigo, Aaaro, Temidire, Iya Ibadan, Ideto, Apapa, Akele, Agwo, Bodija, Olufayo, Oko Teku, Moniya, Oke Ogun, Shaki, Egbedore. Ilobu, Efon Alaye, Alu, and Iya moye (ibid).

Furthermore, there have also been reported cases of conflict between Fulani herdsmen and farmers during the years 2000 to 2015. For instance, the area of Benue-Plateau has experienced incidents where Fulani herds have crossed the lands of the farmers which have caused violent clashes. In addition, different news sources have also reported different incidents regarding violence of Fulani herdsmen. These sources stated that 28 people were killed by suspected Fulani herdsmen in Benue as well as other attacks in the area including the mentioned actors (Abugu & Chinwe, 2015).

The Fulani herdsman owns approximately 90 percent of cattle in Nigeria. They also constitute the core of traditional pastoralists (Aderinoye-Abdulwahab & Adefalu, 2012). Moreover, the Fulani is an ethnic group that are mainly engaged in pastoral production such as keeping herds of cattle as well as sheep and goats (Gefu, 1992). The annual herding cycle of the Fulani begins with southward movement of the herds from October to December, this marks the beginning of the dry season. When the end of the dry season begins the cattle herds will start their movement North. In this period, the herds are producing more milk which results in shorter grazing hours and therefore coexist more with crop farmers. Conflicts during this period between herders and farmers become more prevalent (Iro, 1994).

As conflict increases in Nigeria's pastoral and farming communities, the federal and state authorities of the nation have showed little to no interest in addressing these issues (International Crisis Group, 2017). The federal security and enforcement agencies have not established any early-warning or rapid response mechanism, such as arresting and prosecuting perpetrators or offered compensation to victims. Furthermore, improvements to livestock management practices which can minimize friction agrarian communities have not been prioritized or even discussed. Efforts to improve the situation have been short-sighted and initiating as well as encouraging community dialogue have not been done. To encourage the community to start conversation is an important step for peace building, however, such encouragement has not been made and therefore are herders and farmers taking matters into their own hands (ibid).

Although there is significant variability in social, economic, ecological parameters from one area to another, conflict is usually greatest where populations are most dense and competition for fadama land highest. The distribution of fadama cultivation is very uneven. Areas where there are abundant flood-plains, especially along the Benue river, are still

relatively unexploited in terms of dry-season cultivation and most land is still in the hands of fishing and pastoral communities .

## 6. Findings

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This chapter will focus on the findings regarding climate-related changes and the effect on the relationship between pastoralists and farmers. The findings will be structured based on the categories

### 6.1 Worsening livelihoods conditions

The risk of violent conflict can significantly increase when people experience economic hardships (Mobjörk et al, 2016). Drought, rainfall, diminishing soils and reduced vegetation cover can have negative effects on livelihood conditions in this Nigeria, where a large part of the population relies on rain-fed agriculture and pasture (FAO, 2017). With their livelihoods threatened, people sometimes believe that they have less to lose from using violence (Mobjörk et al, 2016).

- a) *How have climate change affected livelihood conditions?*
- b) *Is the impact negative or positive?*

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The main source of livelihood for most Nigerians comes from the agriculture sector (FAO, 2017), it is estimated that approximately 70 percent of Nigeria's population is engaged in the agriculture sector (Cervigni et al, 2013; Ayoola et al, 2011). Previous research on climate change in Nigeria shows that it has an impact on the agriculture sector, including crop husbandry and livestock (Ayinde et al, 2011; Ayoola et al, 2011; Saul, 2015; Bello, 2012; Cervigni et al, 2013). The impact of climate change varies between zones and seasons in Nigeria (Apata, 2011; Bello, 2012; BNRCC, 2008) and it was concluded in a study by Akpodiogaga (2010) that Nigeria has in general experienced increased temperature and decreased rainfall over the past 105 years. However, the result varies across regions and that the coast of Nigeria is experiencing a rise in the sea-level while desert enrichment in the North, specifically around the Sahel, have increased due to variability in rainfall. The result is compatible with IPCC prediction which identified the region around the Sahel to be experiencing more drought due to reduction in total precipitation while the coastal areas are more prone to wet years resulting in the occurrence of flooding (Akinsanola & Ogunjobi, 2014).

These changes in the climate can affect the livelihoods of people indirectly and directly. The direct effect of climate change can be identified in agriculture, which is the source of livelihood for most people, such as increased temperatures and decreased rainfall. This can for instance directly affect the quantity and quality of pasture, grain and forage which indirectly affects livelihoods (Ayinde et al, 2011). Direct effect of climate change on livelihoods can be seen in the rising sea-level which are estimated to displace 14 million people (Akpodigaga, 2010). However, a empirical study conducted by Apata (2011) concluded that climate change had in most scenarios a positive impact on Nigeria's agriculture. It is further stated that the positive and negative impacts varied across regions. For instance, in the Southern region the climatic impact was mostly positive while in the Northern region the impact on agriculture was mostly negative.

Furthermore, the North are facing a climate induced threat in the expansion of the Sahel desert which is reducing viable agriculture land and crop production by burying arable land under sand dunes (Akpodigaga, 2010). Other climatic factors that also have been identified to affect crop production is unpredictability and variation in the pattern of rainfall and high temperatures (Ayoola et al, 2011). As most of the Nigerian farmers are engaged in rain-fed agriculture, the rainfall variability have caused difficulties in predicting the start of rainfall which also have limited the growing seasons (Adejuwon 2008; Odekunle 2004). In addition, the agriculture sector is dominated by small-scale resource-poor farmers operating in 0.1 to 5 hectares with low-level traditional technologies (Ayoola, 2011). Low-level harvest continues therefore to be affected by irregular and unpredictable rainfall

These climatic variabilities is predicted to affect the productivity of pastoral resources such as open rangelands, wetlands, watercourses and rivers (Adamu, 2008) which is an important source of livelihood and food security as cattle, goat and sheep perform economic functions (Ayanda et al, 2013). As earlier mentioned, livestock production is an source of livelihood in Nigeria, especially for pastoralists, both to those who have established a permanent livelihood in one area and those who are engaged in seasonal transhumance. Livestock breeding becomes important for these people's socio-economic, cultural and political organisation (Gefu, 1992). The productivity of pastoral cattles have over the years been low due to inadequate supply of water and pasture, furthermore, climate change have exacerbated the situation by exposing herds to tougher weather conditions such as drought (Ayadan et al, 2013).

Furthermore, it has been noted that pastoralists usually live in the rural areas, mostly in order to be able to access pasture for their animals (Ayadan et al, 2013) but it has also to do with poverty. People in rural areas in Nigeria are generally more poor than those in the urban areas (IFAD, 2001) and pastoralists are no exception. This could be due to low income levels, low access to technology lack of access to inputs, credit and market facilities in the rural areas (Leeuwis and Pyburn, 2002).

## 6.2 Worsening relationships between actors

When people can no longer sustain themselves due to diminishing resources, their natural response is to move to areas where there are more resources available (Mobjörk et al, 2016). Migration can lead to violence as groups from different regions clash and they often lack common conflict mediation mechanisms to peacefully resolve conflicts over resources. Groups with a strong sense of identity are also generally better at mobilizing people for violent purposes (ibid).

- a) *How has climate change affected the relationship between farmers and herders?*
- b) *Is the impact negative or positive?*

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According to the National Meteorological Agency (2008) the annual rainy season over the past 30 years dropped from an average of 150 to 120 days in Nigeria's arid and semi-arid region in the far north. This has caused desert encroachment in these regions and the phenomenon is progressing southward, specifically in the Bauchi, Borno, Gombe, Jigawa, Kano, Katsina, Kebbi, Sokoto, Yobe and Zamfara states. Millions of pastoralists and others have been forced to migrate south due to these environmental changes. The southward migration is also due to the search for more productive land as the availability of pasture has decreased in the North due to the mentioned environmental changes (ICG, 2017).

However, seasonal migration is part of the pastoral mobility pattern as it is a way to cope with the different climate conditions, but when these patterns change due to climate variability it can cause migration into other group regions (Mobjörk et al, 2016). As well as staying in the south longer and sometimes permanently (ICG, 2017). Furthermore, high population growth over the past four decades has increased the pressure on farmlands, especially in regions where migrating herders are moving into. Resulting in more frequent disputes between farmers and herders over land and water use, crop damage, water pollution

and cattle theft and with the absence common mediation platform, that are mutually accepted, these tensions can turn violent (ibid).

The changing patterns of pastoralists have resulted in the establishment of new practises. Some have adopted more sedentary lifestyles (ICG, 2017) and others have changed to other cattle breeds with other patterns (Muhammad et al, 2015) . For instance, the Fulani herders were due to vanishing grass forced to change from Bunaji cattle breed to Sokoto Gudali, which readily browses (FAO, 2001). In addition, crop farmers have expanded into previously uncultivated land with the help of the government, for example the National Fadama Development Projects (NFDPs) have since 1993 helped farmers exploit wetlands for dry season irrigation agriculture. This have caused cattle herders to lose access to grass-abundant wetlands which have previously been used and guaranteed that livestock would not stray into farmlands (Muhammad et al, 2015). The reason for the expansion of agriculture land is partially due climate change which caused crop failure and food shortages (Bello, 2015) as well as population growth that are pressuring the food production (FAO, 2001). The expansion of agriculture farmlands and the vanishing grazing lands have resulted in herds veering into farmlands and destroying crops (Muhammad et al, 2015). Resulting in more competitive and confrontational relationships between farmers and herders (ICG, 2017).

According to Azuwike & Enwerem (2010), the Fulani herders from the North are now staying in the South for a longer time and as earlier mentioned adopting more sedentary livelihoods. The newly found practises comes with cost of worsening relationships with the farming host. Furthermore, Azuwike & Enwerem (2010) also states that the tension is promoted by the destruction of crops by the herder's grazing cattles, this were very evident in the South according to the research. The tensions in the South have led to the migrating Fulani pastoralists bearing arms. This transition to a new lifestyle for the pastoralists have been significantly impacted by environmental change (ibid). These environmental changes such as drought and desertification have caused shortages in natural water resources across the far-northern Sahelian belt. This have further forced a number of herders to migrate south in order to found more fertile land and water sources (ICG, 2017).

Furthermore, conflict caused by the climate-related migration by the herders are not per se an issue, it is the fact that they are migrating into regions with an already high population growth, which in turn increases the pressure on farmlands. The pressure on farmlands also increases the frequency of disputes over crop damages, water pollution and

cattle theft. Conflict over these disagreements can escalate into violent ones as there are a large absence of mutually accepted mediation mechanism. Moreover, the southern migration have in some cases aggravated the already fragile relations between different regional, ethnic and religious groups in Nigeria. In the South the dominating religion is christianity, however, the recent inflow of predominantly Muslim herders from the North aggravates the current issues with farmlands.

### 6.3 Distribution of local resources

Conflict over national resources have the potential to involve many different actors, including farmers, pastoralists and hunters (Muhammad et al, 2015., Conroy, 2014., ICG, 2017). They have also increasingly become more opposed to modern institutions created and protected by the state, for instance, national parks, biodiversity reserves and forestry zones. These institutions are often very unfamiliar to cultures that have been dominated by pastoral livelihoods for millenia, including open access to grazing and hunting (Conroy, 2014).

Moreover, conflicts in Nigeria are commonly revolving land issues and it has been noted that access to land is important poverty reduction, economic growth, and the empowerment of the poor. Land issues are a leading cause of conflict in Nigeria and access to land has proven to be important to poverty reduction, economic growth, and the empowerment of the poor. The importance of territory might be why land conflicts are common, and why they are more difficult to solve than other conflict issues (Conroy, 2014).

- a) *How have climate change affected the distribution of local resources?*
- b) *Is the distribution fair?*

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The changing patterns of pastoralists and farmers have as mentioned created a new and more adaptable way of practises, sometimes overlapping (ICG, 2017). Since the 1980s riverine and valley-bottom cultivation have expanded which have resulted in direct competition of accessible wetlands areas. Furthermore, crop farmers have with the federal government's help expanded into previously uncultivated land, especially wetlands which are more fertile in the dry season (Conroy, 2014). Together with improved rural-urban transportation, the incomes have increased for crop farmers as well as dry-season employment. In addition, the National Fadama Development Projects promotion of high-value crops such as tomatoes and onions to the detriment of livestock feeding as it produce little residue and further diminishes available

fodder (ICG, 2017). According to Muhammad et al (2015) allocation of grazing land and changing access rights have exacerbated the issues and causing difficulties for pastoralists to know where to pass as well as where to stay.

The distribution of resources such as land have not been noted to be directly affected by climate change (Conroy, 2014). However as mentioned, forced pastoral migration and the search for more fertile soil have been caused by climate change. Thus, not directly affecting the distribution of land. According to Blench (2010; referred in Conroy, 2014) there are three factors affecting conflict between pastoralists and farmers which also regards land issues: “1) *the collapse of the traditional burti<sup>1</sup> system of cattle routes, 2) the declining importance of dairy production, migration and disease, 3) the intensification of agriculture in riparian areas known as fadama cultivation*” (Conroy, 2014).

The expansion of fadma<sup>2</sup> cultivation has generally had negative consequences for pastoralists (Conroy, 2014) It is affecting the dry season movement of pastoralists, who are during that period depended on the access to riverbanks. The riverbanks provided them with fertile soil and grazing land which could not be find in other regions. Cattle can therefore in these areas roam freely without straying into farms and damage the crops. However, with the expansions of fadma cultivation, the pastoralists and their herds have experienced decreasing grazing land as well as the collapse of the burti system. According to Blench (2010), this migration route system started to collapse in the 1970s as a consequence of the expansion of the agricultural sector. Furthermore, as the agriculture market become more profitable for the farmers and with the support from the government, pastoralists became more marginalised and with inappropriate models of land tenure. The expansion also meant improved infrastructure and the introduction of small-petrol pumps which were proven to be effective for the farmers, as it raised water in otherwise inaccessible areas. This development have caused issues for pastoralists as it often replaces the migration routes and the cattles have to share their pathway with motorists.

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<sup>1</sup> A system of burti, migration routes, was established by agreement between Fulani leaders and local community authorities under the auspices of local government or its predecessors.

<sup>2</sup> Refer to almost any naturally flooded piece of land but applies particularly to valley-bottoms, where rice is an increasingly common crop, also supplying urban demand.

As the burti system began to collapse and the agriculture sector expanded, the farmers started to increasingly claim the land across which cattle passed (Adisa, 2012). Pastoralists responded by letting their cattle to enter the new farms which have resulted with either violence or judicial consequences (Blench, 2010). Legal issues regarding land tenure are also a cause to conflict between farmers and pastoralists. It has also been noted that “insecure land tenure impedes fair resource management - which could lead to conflict”. Furthermore, the issue of land tenure refers in this case to fundamental differences between in ideas of land ownerships. According to Conroy (2014), for most pastoral societies the idea of private ownership of land is quite foreign and which also greatly affects their livelihoods as it restrict their mobility patterns. Another scholar have also noted that traditional communal properties are now being replaced by private ownerships (Adisa, 2012).

Furthermore, the Land Use Act of 1978 are observed to be a hindrance to proper land tenure and it has also been noticed that proper land rights are being denied to certain groups (Adisa, 2012). The Land Use Act of 1978 gives the government the control over land that should belong to the Nigerian people, however, customary land tenure is still allowed to rule in the areas where the law is not being enforced. Conary (2014) further states that the conflicts in the north are often justified by categorizing groups by “indigenes” and “settlers”, the perceived settlers are the ones that are often denied land rights. As some of the pastoralists from the north are becoming settlers, these types of issues regarding land right becomes more common. The government's inadequate leadership regarding land use rights are affecting pastoralist livelihoods negatively.

## 7. Analysis

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This chapter will provide an analysis on the provided findings as well as answering the questionnaires.

### 7.1 Worsening livelihood conditions

The disputes between the farmers and the herding pastoralists are as stated triggered by land and water use, crop damage and obstruction of traditional migration routes. These issues are directly and indirectly connected to climate change, because the livelihood conditions of both farmers and pastoralists can be perceived as worsening as the climate variability are proven to affecting both crops and livestock. According to Gurr, the loss of physical goods such as food and water can eventually lead to tensions between groups. However, the findings do not conclude that farmers and pastoralist have lost physical goods due to climate change. Furthermore, the findings do state that the loss of water and land due to climate change have affected the livelihoods of both groups. For instance, the rainfall variability have caused destruction of crops and as most of the Nigerian farmers are engaged in rain fed agriculture, this becomes a major issue for their livelihoods, as it now also becomes difficult to predict the start of the rainfall and therefore limits the growing season.

Furthermore, it has been stated that there has been an decrease in rainfall over the past 105 years in Nigeria. These changes has caused not only crop destruction but it also affects the quantity and quality of pasture, grain and forage. With these evidence one can argue that it does affect the livelihood of farmers negatively. Farmers who base their entire livelihood on agriculture will experience economic hardship due to the climate change and these hardships are part of worsening livelihood conditions. Mobjörk et al (2016) states that the risk of violent conflicts can increase due to economic hardship such as the loss of land, crop and other objects that are important for maintaining economic stability.

The findings have established a demonstration of the climatic impact on pastoral and sedentary livelihoods. According to Gurr (2010) and Smith et al (2012) relative deprivation occurs when the physical well-being also referred as the 'basic' needs of a person is being taken away. In this case, basic need such as food, water and shelter as been compromised, it has not necessarily been taken away. However, cattle rearing is a source of living for

pastoralists and factors that can worsen this activity will affect the basic needs of these people as well as creating more economic hardships.

However, climate change have according to the findings not only affected farmers negatively. In fact, there has been positive outcomes from the rainfall variability, negative outcomes depends on region. Because some regions are being more affected by the climate change than other regions, for instance the South was not as negatively affected by climate change as the North. The findings stated that the Northern regions of Nigeria are facing climate threats in the form of the expansion of the Sahel desert which have in the Northern part reduced viable agricultural land. This have proven to affect the crop production by burying arable land under sand dunes directly affecting the productivity of cattle rearing. These climatic variabilities also negatively impacts other pastoral resources such as rangelands and wetlands. Rangeland and wetlands are an important source of income for the pastoralists as it provides food for the livestock.

Furthermore, worsening livelihoods is an important variable when looking into climate related conflicts. Because it based on the essential building stone of the human life as it represents the basic needs of people. As the theory of relative deprivation states, when a person or a group lose the most important part of life such food, water and shelter, they tend to look to finds these. This in itself is not the issue, the issue is when another group appears to be living a better life where the availability of the basic needs is not an struggle for them. This causes a sense of unfairness and a perceived disadvantage which in turn can lead to angry resentments towards the other group. However, this will not certainly lead to violent outbreaks but it can explain the tensions that appears when resources declines.

Both farmers and pastoralists have experienced worsening livelihoods, however this variable seem to not be able to fully explain the violent confrontations. For instance, the variable can not explain to what extend the lost of physical needs can lead to violent behavior. However, the findings do suggest the conflicts is triggered by livestock theft, crop damage as well as land and water use which can be connected to worsening livelihoods.

## 7.2 Worsening relationship between actors

The relationship between farmers and herders have worsen in the recent years, despite of their historically interdependent relationship. These disputes stems from several different issues such as the disappearance of resources, inadequate conflict resolutions mechanism and social

divide, all in which can act as a threat multiplier in violent conflicts. However, the question is whether climate change have affected and aggravated these disputes. To state that climate change can directly affect the relationship between the actors involved would be an inaccurate statement. Because, the findings provided in this thesis states that the disputes are mostly due to water and land use, which in turn can be directly affected by climate change. Disputes over land and water is a common in pastoral conflicts and the conflicts in Nigeria is no exception. For instance, the desert encroachment which is caused by climate change have led two issues such as scarcity of resources and most recently high southern migration.

According to the theory of relative deprivation, worsening relationships between actors can occur when the perceived rights stay the same while achieved goods decreases. For instance, in the case of the pastoral conflicts in Nigeria the two main actors still perceive their rights to natural resources to be the same even though the amount of natural resources have decreased due to climate related changes. The gap that occurs between the perceived rights and the achieved goods can lead to frustrations towards an outgroup, and therefore lead to worsening relationships between actors. In the case of the pastoral conflicts in Nigeria, the northern pastoralists are facing a decrease in arable land in the north due to the rapid spread of the Sahel desert which causes southern migration. This southern migration is not unusual for the northern pastoralist as they practice nomadism in order to found adequate pasture. However, as climate change is changing the pattern of the pastoralists, their mobility are becoming more unpredictable.

For instance, northern pastoralists tends to settle in the south for a longer time, in search of more adequate pasture and grazing land, which also causes issues with the farmers in that area. The now long southern migration of the northern pastoralists causes more pressure on the land that has to be shared with the farmers. Furthermore, with climate change being an inevitable actor that is causing fierce competition over arable land, fueling the already tense disputes between the two actors. Instead of working together to solve these issues, the two groups tend to take matters in their own hands. For instance, the findings shows that both the farmers and pastoralists have been arming themselves in order to protect both their own lives and their land as well as herds.

Through the analytical lens of this thesis one can argue that the farmers who perceived rights to land and water are being the same but with the influx and long settlements of the northern pastoralists the achieved goods are decreasing, such as adequate farming land

etc. This creates a frustration that is targeted towards the northern pastoralists as they are considered an outgroup and the other dominant group that are sharing the resources in that area. The findings provided in this thesis also shows that climate change have been affecting these relationships mostly negatively. Because, when the pastoralists are moving south in order to find adequate pasture, their herds tends to destroy the farmers crops which causes these disputes.

Migration is a major part of these disputes as it causes not only unexpected movements of pastoralists but also an increased population. The findings suggests that high population growth over the past four decades have increased the pressure on farmlands and the regions that have been affected the most is the regions where pastoralists are migrating to. One of the consequences of this is that farmers and pastoralists are frequently finding themselves more often in disputes with each other. Leading to more confrontational and competitive encounters which can according to the analytical framework which refers to decremental deprivation be due to the loss of attained goods are declining while the perceived right to goods are stagnant.

However, the worsening relationships between these actors are not only due to climate change. There is a great amount of other factors that affects the way these groups interacts with each other for instance ethnic and cultural differences. Despite of these factors having an important role in this conflict one can not disregard the impact climate change has. Climate change is in this case acting as a threat multiplier by inserting more pressure on the shared resources by forcing untraditional migration. Migration in itself comes with different patterns and practises which can disturb many livelihoods, resulting in new clashes as well as challenges between pastoralist and farmers. Resource related conflicts are in general vulnerable to climate change and can according to Gurr result in rebellious acts by people.

### 7.3 Distribution of local resources

The distribution of local resources is an important variable in resource related conflicts and often causes violent outbursts. Unfair distribution of local resources are often linked to the economic, social and political status of people. In the case of the pastoral conflicts in Nigeria, the findings suggests that the distribution of local resources has not been fair. For instance, the help that the crop farmers have received from the government have put them into a favorable position. The programs mentioned have helped the farmers to expand their

cultivation, however, this expansion have caused diminishing grazing lands for the livestock as well as the collapse of the burti system.

These issues may be more linked to the political and economic situation in Nigeria as the allocation of local resources are mainly done by the government. However, climate change are changing the pattern of many livelihoods which requires them to find new and more adaptable practices. One of the major climatic issues in Nigeria is the decreased rainfall and increased temperature which is causing longer dry seasons. This issue requires farmers and pastoralists to find more fertile lands such as wetlands. It is during this search that the distribution of local resources is an important factor for these actors. The federal government of Nigeria and the Land Use Act of 1978 are denying certain groups of the society to have proper land tenure which is causing inadequate distribution. The findings further suggests that the group that are most often affected by the allocation of land is the pastoralists as they where much marginalized by the Nigerian government.

According to the analytical framework, the distribution of local resources is related to the self-determination of individuals and security of it, especially that of the economic and social underdogs who share common preference for a job with ownership and protection. Pastoralists and farmers may be considered underdogs of the society and both also share a common agricultural livelihoods. Diminishing self-determination can in this case be considered the loss of power to have and protect what is in one's possession. For instance, the pastoralists have lost the power to have and protect one of the most important elements of their livelihoods, the burti system. The findings suggests that the mentioned lost is due to the expansion of the agriculture sector which replaces many of the pastoral migration routes.

The lost of self-determination can lead to the perceived feeling of deprivation which can cause frustrations and aggression. The conflicts in this case stems from disputes over land and water use which is also linked to destruction traditional migration routes, livestock theft and crop damage. In addition, the findings suggest that these essential resources and tools have been gradually decreasing and out of the control of both farmers and pastoralists, thus the lost of self-determination. The consequence of this discrepancy is the feeling of frustration and anger because the archived goods and the perceived rights are not correlating.

Furthermore, the pastoral conflicts in Nigeria may not be due to land and water issues caused by climate change but more due to political and economic marginalization of the pastoralists. The unfair distribution of local resources is not necessarily because of climate

change but as mentioned more of a political issue. The findings suggest that the reason for the unfair distribution of resources is often due to inadequate land tenure as well as the collapse of the traditional migration routes. These two issues are directly linked to the federal government as they are the main enforcer of land laws. In addition, the fadma programs that has been established by the government has been part of the destruction of the migration routes which is crucial for the pastoral community. The consequence of this is clashes between both groups who are taking the law into their own hands as they are arming themselves and attacking people they believe is their enemies. Many of the attacks from the pastoralist often involve crop damages which the farmers answers with stealing and killing the pastoralists cattles.

In addition, the findings also suggest that there are a lack of common conflict resolving mechanism which is considered to be due to the fundamentally different ideas of land ownership. Because most pastoral communities is unfamiliar with the notion of private ownership which have been replacing traditional communal properties. These communal properties have been an important resource for the pastoralists as it gave them larger freedom to move arounds with their herds. With the lack of a common conflict resolving mechanism the conflict between pastoralists and the farmers have yet seen any improvements. The distribution of resources seem to be a politically loaded issue that are being aggravated by climate change. Climate change is becoming a threat multiplier by putting pressure on resources such as land and water.

#### 7.4 Climate Change as a threat multiplier

The findings also suggest that climate change acts as a threat multiplier by decreasing essential resources to sustain an adequate livelihood. It might not necessarily be the main factor in these conflicts, however, it does influence the outcome of these conflicts. For instance, climate change have proven to trigger the disputes by increasing the pressure on the common resources in two ways. Firstly, climate change increases the pressure by directly affecting it through decreased rainfall, higher temperature, desert enrichment and flooding. These climate related factors have affected the outcome by making the stress on the resources more prevalent. Secondly, climate induced migration has caused population growth which has been suggested by the findings to also be increasing the pressure on land and water.

These factors also seem to be some of the major causes for the conflicts between the farmers and pastoralists. Pastoralists and farmers have for decades been able to coexist and share resources, sometimes even dependent on each other. The slash and burn practices of the farmers left crop residue which could be used as fertilizer by the pastoralists. However, as climate change became more prevalent the slash and burn practice becomes ineffective as it needs large amount of land resources which are decreasing with the climatic changes. The result of this, new practices emerge such as the fadma production which is dependent on wetlands. In addition, wetlands are also of importance for the pastoralists for whom it is the most optimal grazing land for their herds.

Wetlands as well as other land types are highly dependent on rainfall, however, the findings suggest that rainfall has become increasingly unpredictable causing longer dry seasons. Available wetlands are therefore limited, resulting in a higher demand for fertile soil which causes fierce competitions between the consumers. Limited farming lands due to climate change affects both part of the conflict and as the findings suggest it might even be the cause of the conflicts. The variables presented in earlier sections are all closely linked to one another and can therefore not on their own explain how climate change can increase the risk of violent conflicts. However, together these variables have been able to pinpoint some of the causes of the conflicts. The availability of land has been a common denomination in all these variables and these variables have also offered different angles of the issue.

## 8. Conclusion

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In conclusion, climate change can act as a threat multiplier by firstly, directly affect the environment by changing the patterns of nature which is causing unpredictable rain, dryness etc. This issue affects the agricultural livelihoods of both pastoralist and farmers as they are greatly affected by the environment. However, this seems to not be enough to cause violent outbreaks between the actors, but it is an important as it identifies climate change to be affecting the social and economic situations of people. Furthermore, dryness and unpredictable rain can also lead to new human patterns which can negatively affect the current balance between groups that share the same resources. The conflict between farmers and pastoralists are vulnerable to climatic changes much due to their agricultural livelihoods where they have to protect the resources that they believe is theirs.

Secondly, climate change can also trigger other actions that can cause conflict for instance forced migration. The findings suggest that climate change has forced the northern pastoralists to migrate south and the settlements become permanent instead of temporary, which is a drastic change in the pastoral pattern. In addition, the migration to the south also causes other issues such as population growth and the areas become more densely populated. One can therefore argue that the probability of conflict in these areas increases with every group that migrates there. Rapid population growth leads to increased pressure on land and water which can lead to a more competitive nature instead of an interdependent one. The findings suggest that competition leads to more confrontational relationships which can in turn lead to tensions.

Finally, climate change can lead to multiple threats by influencing already existing issues. For instance, the findings suggest that land ownership is a major factor in these conflicts. It is also not directly affected by climate change but compared to the other factors this seem to cause the most problems. Because, for decades these two actors were able to live side by side peacefully and pastoralists had migration routes they followed where they could without interruption let their herds run freely. However, this interdependent lifestyle experienced large changes when private land ownership emerged. This had not been an issue before because most of the land was owned by communities. It therefore created new issues

that needs more complex solutions, which is a new challenge that has to be discussed in the nearest future.

The field of climate related conflict is still narrow and future research should keep focusing on finding correlations between climate change and conflict. Many obstacles were found during the time this research was conducted and new questions arose. For instance, the findings may suggest that climate change acts as a threat multiplier by affecting essential resources, however, what is it that decides that conflicts will turn violent in these situations. Is it the lack of common mediation mechanisms or is it due to deprivation?

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