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**Climate Change and Environmental Migration: A Case  
Study of Darfur, Sudan.**

**Supervisor**

Ch. Prof. Sabrina Marchetti

**Graduand**

John Louis Gomez  
893471

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*Climate Change is the defining issue of our time, and we are at a defining moment.*

**United Nations**

**ABSTRACT**

Il cambiamento climatico è diventato uno dei problemi globali più urgenti del nostro tempo e il suo impatto si fa sentire in tutto il mondo, costituendo una grande sfida per la giurisprudenza e per ogni aspetto della nostra vita. Una delle conseguenze del cambiamento climatico è la cosiddetta “migrazione ambientale”, che vede le persone costrette a abbandonare le proprie case a causa di diversi fenomeni ambientali, quali siccità, carestie, inondazioni e altri eventi meteorologici estremi. Gli eventi climatici estremi possono provocare migrazioni climatiche a livello nazionale (migrazioni interne) o internazionale (richiedenti asilo e rifugiati che varcano le frontiere). La questione della protezione ai sensi del diritto internazionale è una tra le difficoltà che i migranti climatici si trovano ad affrontare. Il termine “rifugiato” offre protezioni basate su una precisa interpretazione della Convenzione di Ginevra sui rifugiati del 1951, e solo i rifugiati sono coperti dal diritto umanitario internazionale. Inoltre, attivisti e studiosi del clima sostengono che non vi sia nessun consenso sulla definizione - e sul trattamento a livello legale – delle persone costrette a dislocare a causa dei cambiamenti climatici.

Il presente studio si concentra sul caso del Darfur, una regione del Sudan che negli ultimi anni ha sperimentato un significativo degrado ambientale e un aumento della violenza, che è stato collegato al cambiamento climatico. La correlazione tra cambiamento climatico e migrazione ambientale è oggi molto presente nel dibattito sulle migrazioni, in particolare nel Darfur, fattore chiave di eventi di carattere climatico provocati da siccità e carestie che causano insicurezza alimentare e una serie significativa di problemi umanitari e ambientali.

Questa ricerca indaga il processo di policy-making a livello generale, concentrandosi sulle strategie impiegate da attori politici come governi, ONG, attivisti, media e organizzazioni internazionali nel sensibilizzare e sostenere l’azione sul tema del cambiamento climatico e del suo impatto sul fenomeno della migrazione ambientale nel

Darfur. La domanda di ricerca che guida questa tesi è: in che misura gli attori politici, sia nazionali che internazionali, hanno giocato un ruolo nel definire la questione del cambiamento climatico e della migrazione ambientale nella regione del Darfur?

Lo studio evidenzierà anche le sfide affrontate dagli attori politici nell'affrontare il cambiamento climatico e la migrazione ambientale nel Darfur e come queste sfide possano essere superate per sviluppare politiche efficaci. Il caso del Darfur evidenzia la necessità di un approccio globale e coordinato ai cambiamenti climatici e alle migrazioni ambientali, che coinvolga più soggetti interessati e affronti i fattori alla base dello sfollamento. Questo lavoro di ricerca sostiene un approccio più proattivo e collaborativo alla definizione delle politiche che dia priorità alla protezione e ai diritti di coloro che sono colpiti dalla migrazione ambientale.

Parole chiave: Cambiamento climatico, migrazione ambientale, attori politici, Darfur, attivisti per il clima, siccità e carestia.

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## **LIST OF ABBREVIATIONS**

ACCORD – The African Centre for the Constructive Resolution of Dispute

AIACC – Assessment of Impacts and adaptations to Climate Change

ARC – Agricultural Research Corporation

AU – African Union

CBAA – Community-Based Adaptation in Africa

CO<sub>2</sub> – Carbon dioxide

COP – Conference of the Parties

COVID-19 – Corona Virus Disease, 2019

EPA – Environmental Protection Agency

IEA – Institute of Economic Affairs

EU – European Union

GPCP – Global Precipitation Climatology Project

GHG – Greenhouse Gas

GoS – Government of Sudan

HCENR – Higher Council for Environment and Natural Resources

IDMC – Internal Monitoring Displacement Centre

IDPs – Internally Displaced Persons

ILO – International Labour Organization

IOM – International Organization for Migration

IPCC – Intergovernmental Panel on Climate Change

LDC – Least Developed Country

MGSOG – Maastricht Graduate School of Governance

NAP – National Adaptation Plan

NAPA – National Adaptation Plan of Action

SfEP – Science for Environment Policy

SECS – Sudanese Environmental Conservation Society

UN – United Nations

UNCHE – United Nations Conference on Human Environment

UNCED – United Nations Conference on Environment and Development

UNDP – United Nations Development Programme

UNEP – United Nations Environment Programme

UNFCCC – United Nations Framework Convention on Climate Change

UNHCR – United Nations High Commissioner for Refugees

WB – World Bank

WFP – World Food Programme

WMO – World Meteorological Organization

## INTRODUCTION

The world is currently dealing with several concerns, most notably climate change and its impact, and environmental migration faced with legal challenges. Accorded to the increased attention that climate change and environmental migration are receiving, these two issues are now a crucial area of international relations and migration field studies concentration and are given great significance in diplomatic circles due to their present social and legal challenges for environmental migrants. Both climate change and environmental migration issues have become a part of international politics when they surpass national borders and become a global dimension. The shift of these issues from national to global has gained the attention of the public and the political elites in framing the problem more likely with solutions on a global level since we now appreciate the global entirety of the problem. With this shift, the awareness that human activities might be endangering the global climate, viewed as the industrial destruction of nature, aroused public panic, marking the 1980s heralding the period of global environmental change (Carson 1962). Baylis et al. (2020) argue that the impact of globalisation has helped environmental issues including climate change gain ground on the international agenda over the past half-century. They asserted that globalisation has promoted the sharing of knowledge and the influential presence of social movements (climate activists) and non-governmental organizations (NGOs) in global politics (Baylis et al. 2020).

Climate change is deemed one of the biggest global phenomena affecting humanity and the environment worldwide (EPA 2010). Climate change impacts, directly and indirectly by posing a challenge to the law and to every aspect of our life. Everything is subject to climate change, including basic human security and human rights, biodiversity, public health, land use, city planning, and access to food and water. Significant changes are occurring in our planetary earth system because of natural and human-made factors.



This has raised alarm on environmental degradation among environmentalists, climate activists, governments, non-governmental organizations, and individuals (Wiedmann et al. 2020).

Africa as a continent has a vast history of human mobility in relation to changes in the environment due to the impact of climate change. The African continent is one of the world's most vulnerable to the effects of climate change, with many communities already experiencing the devastating effects of environmental degradation and displacement. For instance, Sub-Saharan Africa is experiencing the most devastating impact of climate change due to changes in the environment that adversely affect the livelihood or living conditions of people, who are forced to abandon their places of habitual residence to migrate to other countries or within their country of origin. According to the World Meteorological Organization (WMO), climate change poses a growing threat to Africa's socio-economic development, food and water security, and human health. With implications on food insecurity, population displacement, and stress on water resources, the hardest hit is always the most vulnerable (UNFCCC 2020 & Maina 2023).

Climate change and environmental issues are mostly not typically considered in research studies that are primarily concerned with the root causes of migration, particularly from Sub-Saharan Africa. Most studies focused on political and economic reasons as the main drivers of migration from the continent. Robert A. McLeman looks at how migration and the environment are related in his book, "Climate and Human Migration: Past Experiences, Future Issues" (2014). The impact of climate change on human migration is the primary subject of the book. Even though climate change is a substantial driver of migration, it is frequently disregarded in standard studies of migration. Climate-induced migration research contrasts with economically and structurally influenced migration, the latter of which only consider socio-economic aspects. Instead, the political aspect of climate-induced migration is given more thought, which entails political choices that may result in a misleading perception of the scope and magnitude of the issue. As a result, the complexity of the issue makes it more difficult with a lack of political will in addressing the issue. In contrast to disaster-level events, McLeman portrays environmental migration and climate change as secondary causes rather than root causes. He contends that climate and environmental factors affect how

prospective migrants react to social, political, economic, and cultural pressures (McLeman 2014: 30-75).

Furthermore, Laczko & Aghazarm, and Foresight argue that it is difficult to identify the environment as the main driver of migration as environmental factors frequently have a close relationship with political, demographic, cultural, and personal aspects that influence human migration or its prevention (Laczko and Aghazarm 2009 & Foresight 2011). On the other hand, Stefano M. Tonelli argues in his 2017 article "Climate-driven migration in Africa" that environmental changes have a particularly significant impact on migration from Africa for at least four reasons: (i) Sub-Saharan Africa is heavily dependent on natural resources and agriculture, which are the first assets to be undermined by climate change; (ii) it has inadequate infrastructure, such as inadequate flood defenses; (iii) its states are frequently characterised by weak institutions, which are less able to adapt to climate change and; (iv) its high poverty rate undermines the ability of its states to adapt to environmental changes. According to this view, based on the four reasons, it is easier to comprehend the potentially devastating effects of environmental changes on the continent due to climate change (Torelli 2017). The UNEP also anticipates that climate change will affect migration flows in three main ways: reduction in agricultural productivity and degrade ecosystem services such as clean water and fertile soil, the increase in extreme weather events – especially heavy rainfall or floods in tropical regions will affect increasing numbers of people, resulting in mass displacement, and sea-level rise will permanently destroy extensive low-lying coastal areas – resulting in the permanent relocation of millions of people (SfEP 2015)

Analysing recent events and evolving dynamics of climate change and environmental migration throughout the world would better help to comprehend the state of the art on environmental migration. Scholars and experts have concluded that the loss of livelihoods caused by environmental change is one of the current primary reasons causing people to migrate, rather than other factors (Black et al. 2011, Foresight 2011 & White 2011). Through four pathways – increased drought and desertification, rising sea levels, more violent and frequent storms, and competition for scarce resources—climate change may well increase the possibility of both domestic and international migration, according to Martin (2012). The sustainability of numerous environment-related livelihoods, such as

agriculture, forestry, fishing, etc., has recently been significantly impacted by changes in weather patterns that have contributed to longer-term trends of desertification. These trends limit access to vital resources, such as water, and negatively impact several environment-related livelihoods.

The Dust Bowl migration is a classic example of mass migration associated with an environmental event. In his influential classic book “Dust Bowl,” Donald Worster (1979) studied a clear case of migration connected to a major environmental event through an ecological approach process reflecting the connection through global ecological transformation (Worster 1979). Another example of environmental change is the devastating floods in Bangladesh causing population displacement. The connection between environmental migration and climate change has grown lately because of the late developments unfolding with evidence of the impacts of anthropogenic climate change. This growing concern has led to widespread discussion of the potential for climate change to cause population displacement and migration. The drivers of such movement include the inundation of settled land due to sea-level rise, accelerated desertification among currently cultivated lands (leading to migration in search of food), and more frequent and severe climatic disasters such as drought, floods, and tropical storms (Morrissey 2009). Environmental stress under Slow Onset is more interesting connecting with land degradation and drought. All these changes on the environmental level are viewed to be caused by human activities or natural occurrences.

Historically, drought and famine are part of naturally occurring features of climate change causing migration and mass displacement in Darfur, Sudan. Scholars have argued that migration has long been an essential part of people’s livelihood in Darfur, whether migration for pasture, seasonal migration, or in response to drought and famine. Climate change and environmental factors are significant contributors to migration in Darfur. The impact of climate change due to environmental stress in Darfur is a clear indicator of the ongoing humanitarian crisis in Darfur (Jaspars and Buchanan-Smith 2018: 1-3). Internal displacement in Darfur has increased over time because of the Darfur genocide in 2003 and 2005. Environmental factors including drought and famine have made the relocation issue worse. In the view of Ramaix (2010), Darfur has continued to experience rainfall decline over the years since the cyclical drought of the 1980s that plagued Northern

Darfur and its water holes and seasonal rivers vanished, plus its reoccurring periods of cyclical droughts (1983, 1984, 1985, 1987, 1989, 1990, 1997 and 2000) have caused crop failure, loss of livestock and pastureland, and severe environmental degradation (Ramaix 2010: 78-79). Without immediate action, preventing climate disasters and preparing for their impacts in the future would be far more challenging and expensive for policy-making actors.

Since climate change and environmental migration are complex issues that require a multifaceted approach from policy-making actors, such as government bodies, international organizations, NGOs, research institutions, the media, individuals, scholars, civil society, and activists are all crucial in formulating, influencing, and implementing policies that address the challenges posed by climate-induced migration and environmental degradation. These actors are key in shaping the strategies, regulations, and initiatives to mitigate the impacts of climate change on vulnerable populations and ecosystems. Government bodies, such as national and regional governments, develop climate adaptation policies, and land use, negotiate international agreements, allocate resources, and establish legal frameworks. International organizations like the United Nations, International Organization for Migration, UNFCCC, IPCC, and UNHCR provide platforms for cooperation, data collection, and advocacy, while NGOs like the World Wildlife Fund (WWF), Oxfam, and the Red Cross actively participate in policy advocacy and implementation. Research institutions conduct studies and provide data to inform evidence-based policies, while local and indigenous communities and academics contribute their expertise to policy discussions. Civil society and activists raise awareness, apply pressure, and hold policymakers accountable for addressing climate change and migration issues.

This study focuses on the case of Darfur, a region in Sudan that has experienced prolonged conflict, political instability, environmental degradation, and a rise in violence in recent years, leading to the displacement of millions of people, which has been linked to climate change. The issue of environmental migration in Darfur is complex, with a range of social, economic, and political factors contributing to the crisis. However, the role of policy-making actors in exacerbating the situation cannot be overlooked.

While international attention has been given to the crisis in Darfur, the role of policy-making actors in defining and addressing the challenges of climate change and environmental migration in the region has received little attention. Identifying and addressing climate change and environmental migration in Darfur, driven by scientific research and humanitarian standards, is a crucial obligation for policy-making actors. This study aims to fill this gap by examining the role and challenges, both nationally and internationally, in addressing the issue of climate change and environmental migration in Darfur. The primary research question guiding this study is: to what extent policy-making actors both national and international have played a role in defining the issue of climate change and environmental migration regarding Darfur?

The situation in Darfur is a powerful illustration of the difficulties facing people around the world because of climate change and environmental migration. The region's arid and semi-arid climate has made it particularly vulnerable to the impacts of climate change, including recurrent droughts and desertification. These environmental changes have exacerbated existing tensions and conflicts, leading to mass migration and displacement. In particular, the case of Darfur in Sudan highlights the complex interactions between climate change and environmental migration.

In addressing the challenges posed by climate change and environmental migration in Darfur, policy-making actors play a critical role. These actors include governments, NGOs, activists, media, and international organizations, among others. However, developing effective policies to address environmental migration is a complex and challenging task, given the various political, social, and economic factors at play.

Finally, the study will take account of the historical background of the impact of climate change on the environment in Darfur to better understand its phenomenon including the voyages that Darfuris make and their experiences. Migration theories will be used to analyse this phenomenon by highlighting key issues relating to climatological events such as drought and famine.

Chapter one will primarily focus on Darfur as a case study through an assessment of its environmental history, analysing decades of drought and famine in the region. The chapter will also discuss the destinations and routes of Darfuris, highlighting the vulnerabilities and challenges faced by those forced to migrate. Overall, this chapter

provides important background information on the issue of climate change and environmental migration in Darfur and sets the stage for the subsequent chapter.

Chapter two of the thesis reviews the existing literature on climate change and environmental migration, with a focus on the case of Darfur, Sudan. It explores the complex interactions between climate change, environmental degradation, and forced migration, and highlights the need for effective policies and interventions that address the root causes of migration. It also discusses the role of various policy-making actors (governments, NGOs, activists, media, and international organisations) at a general level in addressing this issue.

The concluding chapter of this thesis focuses on the political dimension. It takes account of the policy measures taken by the government in Darfur to address climate change and environmental migration. This also includes the position of the government and international organisations: goals, achievements, and failures. The chapter then introduces the role of social movements and the extent to which their advocacy has influenced policy and practice regarding the issue of climate change and environmental migration. The final aspect of the chapter will highlight the constraints for activists and opportunities.

The concluding part of this thesis will provide a summary of the study's findings and highlight the critical role that policy-making actors can play in shaping a more sustainable and just future for all. It will explore the urgent need for effective policies and interventions that will address the root causes of climate change and environmental migration in Darfur and beyond.

This research study focuses on the methods used by Darfur-based and international climate policy-making actors to advocate for action about climate change and its effects on environmental migration in Darfur. This paper also seeks to explore the challenges faced by policy-making actors in addressing climate change and environmental migration in Darfur. Specifically, the main research question that this thesis seeks to examine is: to what extent policy-making actors both national from Darfur and international have played a role in defining the issue of climate change and environmental migration regarding Darfur? In answering this question, this research will look specifically at:

1. In what way and to what extent climate activists have affected the policy measures taken by the government in Darfur to manage climate change and environmental migration?

2. The constraints and opportunities of activists.

The primary goal of this research is to examine the role played by policy-making actors, both nationally and internationally, in defining the issue of climate change and environmental migration in Darfur from the late 90s to 2016. This will help in gaining a deeper understanding of the complex interactions between climate change and its effects on environmental migration in Darfur.

The research aims to identify the key drivers of environmental migration in Darfur, including the impacts of climate change on water resources, food security, and livelihoods. The research also seeks to explore the challenges faced by policy-making actors in addressing the impacts of environmental migration in Darfur, including the need for sustainable development programmes, and international support and funding for adaptation and mitigation measures. By gaining a better understanding of the drivers and impacts of climate change and environmental migration in Darfur, the research aims to inform policy and decision-making at the local, national, and international levels, and to contribute to the development of effective strategies for addressing these complex and pressing issues.

The study will be relevant to academicians and policymakers concerned about climate change and environmental migration. It will also fill the existing gaps and build on a growing body of scholarly literature on climate change and environmental migration.

The methodology used in this study includes a qualitative approach that draws on existing literature and policy documents. It also discusses the data analysis methods used in the study. The proposed topic "Climate Change and Environmental Migration: A case study of Darfur" focuses on examining the role of policy-making actors in defining the issue of climate change and environmental migration. The data collected will be analysed thematically to examine the challenges faced by the policy-making actors and potential solutions to develop effective policies in Darfur and its population, particularly in terms of environmental migration. The research question seeks to understand the role of policy-making actors in defining the issue of climate change and environmental migration in

Darfur, both at the national and international levels. As this is desk/archival research, and given the evolving nature of the subject, the debate on the state of the art, and the complexity of the subject being discussed, this research will rely heavily on primary and secondary data.

The primary sources of information will be reports, official correspondence, and data published online by both local and international organisations (IPCC, UNHCR, IOM, UNEP) dealing with migrant issues. Secondary sources of information will be academic writings by experts in the field of climate change and environmental migration, journal articles, textbooks, and newspapers and blog articles available online.

The approach to this study will be both analytical and empirical in nature. The analytical aspects of this study will revolve around an in-depth discussion about the content of the subject analysis. The empirical aspects of the study will be evident in the report analysis and its findings.

Data on migration, particularly in developing nations like Sudan, is sometimes insufficient, especially for brief internal moves, and temporary movements, which account for a significant portion of environmental migration. One potential limitation of the proposed research topic is the availability and reliability of data on the role played by policy-making actors in defining the issue of climate change and environmental migration in Darfur. While there may be a significant amount of literature on the topic, it may be difficult to access reliable information on the specific strategies and actions taken by policy-making actors, both nationally and internationally.

Additionally, the study may face challenges related to the availability of key stakeholders. Finally, the proposed study may face challenges related to the generalisability of findings, as the case of Darfur may not be representative of other regions or contexts where climate change and environmental migration are a growing concern as a top priority.



# CHAPTER ONE: DARFUR AND MIGRATION

## 1.1 CONTEXT AND BACKGROUND

Figure 1– SUDAN POLITICAL MAP



Source: Vidiani 2012

Sudan, officially known as the Republic of Sudan, is a country in northeastern Africa. It is bordered by Egypt to the north, Libya to the northwest, Chad to the west, the Central African Republic to the southwest, South Sudan to the south, Ethiopia to the southeast, Eritrea to the east, and the Red Sea to the northeast. Sudan's population is ethnically, linguistically, and religiously diverse, with Arabic being the official language. Sudan's economy is based primarily on agriculture, but it also has significant oil resources (CIA

World Factbook 2023). Sudan has experienced numerous conflicts since its independence from Anglo-Egyptian rule (1899 – 1955) in 1956, including two civil wars (1955-1972 and 1983-2005) that led to the secession of South Sudan in 2011 (Copnall 2014 & Kuol 2020). The second civil war and the ongoing conflict in the western region of Darfur have caused significant loss of life and displacement of people. Sudan now has the most displaced people in the world because of recurrent droughts that have plagued the country for the past three decades and a declining food supply. Since 2003, 2.4 million people have been internally displaced from Darfur at an unprecedented rate, resulting in severe suffering for individuals as well as environmental harm. Natural catastrophes like drought and flooding frequently occur in Sudan, which causes population displacement and underdevelopment. Even more damaging is the continuous process of desertification, which is being fuelled by drought, climate change, and human activity. (UNEP 2007).

Darfur is a region in western Sudan with five states: Central, East, North, South, and West Darfur (Republic of Sudan 2016). The population of Darfur is estimated to be around eight, inhabited by a diverse range of people from various ethnic backgrounds, including the Fur, Masalit, Zaghawa, and Arab tribes, who mostly practice farming and herding (Flint & De Waal 2008). These groups have coexisted and interacted for centuries, sharing trade, cultural practices, and intermarriage. The region's economy relied heavily on agriculture, with communities engaging in farming, herding, and trade. Darfur has a complex historical context and background that has shaped its present-day situation. Darfur's history is characterised by prolonged periods of famine and droughts over decades, which have been exacerbated by a complex interplay of climate change, environmental degradation, and social factors, which have contributed to the region's instability and conflict over competition for natural resources and land rights for decades since independence. These challenges have led to large-scale migration, displacement, and humanitarian crises in the region, which have disrupted agricultural production and livelihoods. The droughts in Darfur have had a significant impact on agriculture, livestock, and food security, exacerbating the vulnerability of the population. The scarcity of water and arable land due to drought has disrupted traditional agricultural practices, making it difficult for communities to sustain their livelihoods. Darfur has a single rainy season that lasts from June to September. In the dry north and northeast, the season is

shorter. The livelihoods of the inhabitants of Darfuris are diverse and adaptive, including farming and raising animals and relying on the soil, groundwater, vegetation, and rainfall (Waal 2022). Crop failures and reduced access to water sources have led to food shortages and malnutrition, affecting the overall well-being of the population (UNEP 2007: 58). The rural population of Darfur is divided into four groupings: small sedentary farmers, cash crop growers, nomadic pastoralists, and agricultural labourers. According to Tobert, livestock is seen as an economic asset that is traded for cash and used for food in Darfur (Tobert 1985).

This chapter will provide a summary assessment of Darfur's environmental history, analysing decades of drought and famine in the region, with a conceptual model provided. The chapter will also provide an overview of the main drivers of drought and famine in Darfur and their impacts, drawing on relevant literature, highlighting destinations and routes of Darfuris, and the vulnerabilities and challenges faced by those forced to migrate.

## **1.2 DECADES OF DROUGHT AND FAMINE IN DARFUR**

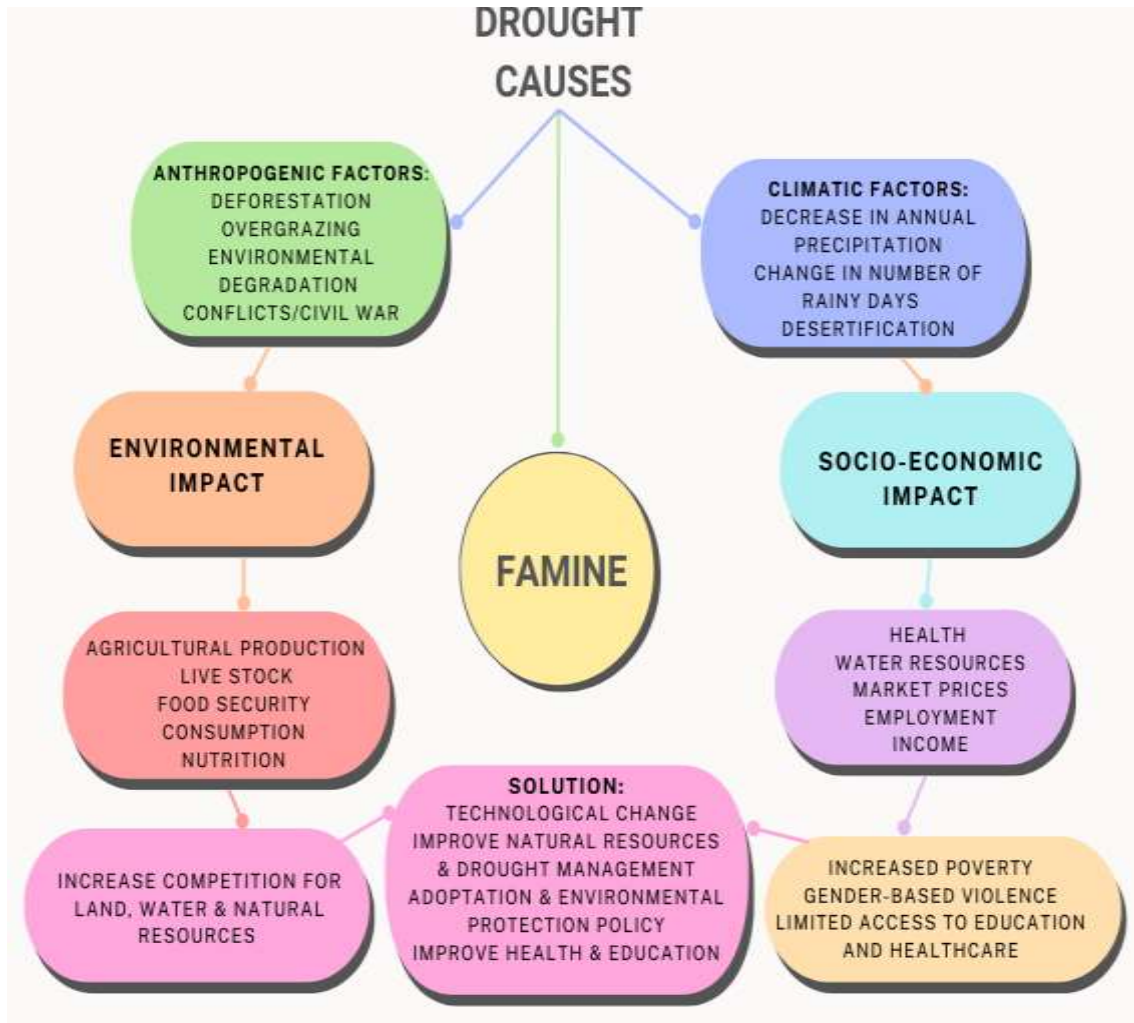
Drought in Sudan has been a significant issue throughout its history, often accompanied by famines and disease outbreaks. Periods of drought have historically occurred, often leading to widespread problems. Ibrahim argues that drought and famine are recurring challenges in Sudan (Ibrahim 1985). Since the 1980s, Darfur, Sudan, has been suffering from a severe drought and famine crisis. Due to persistent climate issues, social unrest, and political instability in the Darfur area, a severe humanitarian crisis developed there in the late 2000s. Prolonged droughts have had an adverse effect on agricultural production, water supplies, and socioeconomic stability, leading to a humanitarian crisis and widespread food insecurity. The continuous fight for survival in Darfur is examined in this introduction, along with its causes, effects, and international responses.

Over the past decades, Sudan has experienced major drought affecting food security and human displacement, with Northern and Western Darfur cited as one of the worst affected states. Drought events alter ecosystems by causing tree death and reduced vegetation cover, making land more vulnerable to overgrazing and erosion. The most

severe drought occurred in 1980-84, while localised droughts affected between one and five states (the Northern Kordofan state, North states, Northern and Western Darfur, and the Red Sea and White Nile states) in 1967-73, 1987-1989, 1991, 1993, and 2000 (Tambel et al. 2014 & ibid 2007). Mohamed Osman Akasha's book, "Darfur: A tragedy of climate change," (2013) highlights the negative impact of climate change on Darfur since the 1970s. Akasha argues that since the 1980s, the region has experienced severe drought and famine, leading to increased competition for land, water, and natural resources. This competition worsens the already uneasy political, social, and ethnic relationships in the Darfur region (Akasha 2013). Approximately, 250,000 individuals are said to have perished in the 1984/85 famine (An Africa Watch Report 1990). Small farmers and herders in distant dryland regions were the principal casualties.

Using a conceptual model to analyse Darfur's decades of drought and famine would help us better understand the various interconnected factors that contributed to the situation in Darfur. This includes factors such as anthropogenic, climate change, natural resource depletion, agricultural practices, political instability, conflict, and socio-economic factors. In examining the interactions between these components, policy-making actors can gain insights into the complex causes and consequences of drought and famine in the region from the 1980s to 2016. In the diagram below, I have developed a conceptual model to illustrate Darfur's case as a classical sample for this analysis inspired by the Teklu et al. (1991) overview analysis of the drought/famine link.

Figure 2 – DARFUR'S DROUGHT/FAMINE LINK ANALYSIS (1980s - 2016)



(This model is designed by me, drawing inspiration from Teklu et al. (1991) overview analysis of the drought/famine link)

### RAINFALL DECLINE IN DARFUR STATES

There are signs of long-term regional climate change throughout Sudan, including intermittent but noticeable reductions in rainfall, primarily in the Darfur states. Darfur has preserved rainfall statistics since 1917, however, today there are just three sites that are still routinely monitored. The data indicates a pattern of decreasing rainfall, with the Northern Darfur region towards the northern edge of the Sahel seeing the worst decline. El Fasher's ten-year moving average rainfall has decreased from 300 mm annually to about 200 mm since records have been kept, with the last time rainfall surpassing 400

mm being in 1953 (UNEP 2007: 60). Due to the decrease in rainfall, millions of hectares of semi-desert grazing area in Northern Darfur have been transformed into desert, marking an unparalleled extent of historical climate change. The productivity of farming has decreased in northern Darfur because of long-term drought, greater rainfall variability, deforestation, and soil degradation brought on by over-farming. This has led to migration to more productive areas further south, causing social tensions as desert-based groups moved to towns and villages further south. Early in the 1970s, this trend started, and it persisted until the 1980s (Waal 1989).

Rainfall in Darfur declined significantly in the 1960s, 1970s, and 1980s, leading up to the 1984/85 drought and famine. Northern pastoralists were severely affected, while southern populations were less severely affected. As a result, many northern pastoralists relocated to settled farmer communities in the 1980s and 1990s (De Juan 2015). The southern part of Darfur faced increasing pressures on local resources due to population growth and migration from neighbouring Chad. This led to a vicious cycle of over-exploited soils, deforestation, and further depletion of resources (De Waal 2007 & Leroy 2009). The extremely fluctuating rainfall throughout the region, which causes unpredictable crop seasons and catastrophic weather events like droughts and floods, is one example of a factor beyond human control. The impact of drought in Darfur resulted in agricultural failure and livestock loss. When dry years come swiftly enough, the soil cannot recover, and locals are compelled to leave their homes and farms.

The UNEP's report (2007) shows a significant drop in annual rainfall in all three Darfur States. The report highlighted a drastic rain decline with Northern Darfur experiencing a 34% reduction, Southern Darfur a 16% reduction, and Western Darfur a 24% reduction between 1946-1975 and 1976-2005 (UNEP 2007: 60). Furthermore, the report on Drought conditions and management strategies in Sudan by Tembel et al. (2014) provides an advanced data record of Darfur's raindrop between 1946-1975, 1976-2005, and 2006-2013 (Tembel et al. 2014).

**The Table Below Shows the Long-Term Rainfall Trend Reduction in Darfur:**

<b>Rain gauge location</b>	<b>Average annual rainfall (mm) 1946 - 1975</b>	<b>Average annual rainfall (mm) 1976 - 2005</b>	<b>Average annual rainfall (mm) 2006 - 2013</b>	<b>Reduction (-)</b>
El Fasher, Northern Darfur	272.36	178.90	210.73	61.63
Nyala, Southern Darfur	448.71	376.50	440.10	8.61
El Geneina, Western Darfur	564.20	427.70	482.85	81.35

**Source:** Tambel et al. 2014

The report states that the magnitude and length of the decline in rainfall above are evident enough to have changed the natural environment despite the impact of human activities. As a result, these changes have led to the widespread death of trees during drought events (ibid). Drought is frequent in Darfur affecting agriculture, livestock, water resources, and the health sector. Cycles of drought that occurred in Southern Darfur State in 1987, 1989, 1990, 1993, and 1996 had a negative effect on the environment. Due to drought and rainfall unpredictability, these cycles led to less surface water discharge (Republic of Sudan 2007: 30). In other places, like Northern Darfur, climate change has reduced rainfall, which has significantly lowered the quality of dry rangeland. A further 70% loss in production is anticipated for vulnerable regions, which is projected to continue the current slide (UNEP 2007: 86). Olsson claims that North Darfur's grain production was only 18% of the total need, highlighting the severe famine situation (Olsson 1993: 396).

In 1984/85, western Sudan experienced low food production, below subsistence level. The study by Teklu et al. (1991) examines the effects of drought on production, markets, consumption, and nutrition, focusing on the 1984-85 famine. According to the report

findings, the decline in rainfall levels from 1960-1986 led to low cereal production growth, due to short-run effects on yield. Cereal production also experienced year-to-year fluctuation, with yield variability strongly associated with rain-fed crops. Drought-production relationships show that a 10% drop in annual rainfall from mean levels leads to a 5.0% drop in cereal production and a 3.7% drop in yield at the country level. Sorghum yield and production are more affected by rainfall declines than millet, with a 10% drop resulting in drops of 7.3 and 3.0 percent in sorghum and millet production, respectively. In the view of Teklu et al. (1991), the 1984-85 famine resulted from drought, desertification, inadequate public food and agricultural policies, and an inadequate public response. Teklu et al. (1991) further argue that Darfur had a record of 1.4 million people affected in 1984. Severely affected populations were 0.8 million in Darfur (Teklu et al. 1991: 13-28). Children under five, pregnant and breastfeeding mothers, and other vulnerable populations such as Darfur states were identified by the United Nations Emergency Operation Office as nutritionally harmful (see for example Figure 3 below). By mid-1985, these groups were estimated to be around 800,000 in Darfur (Pearson 1986). Some other sources have also cited drought and desertification as the primary contributors to the 1984-85 famine (Ibrahim 1984; Ibrahim 1985; ILO 1985), while other sources have identified misguided government policies on food and agriculture, and a lack of political will and institutional capacity (Abdel Ati; Shepherd 1988).

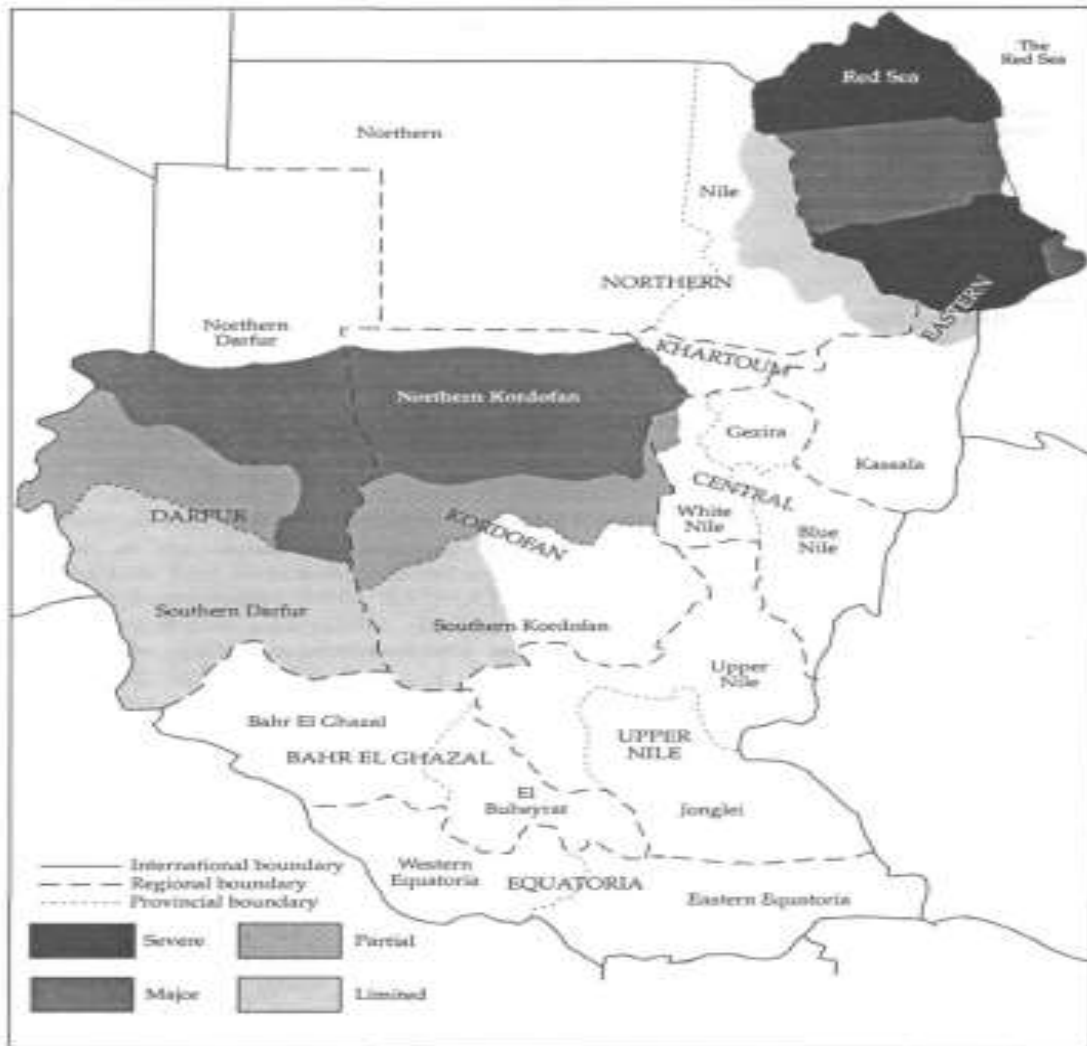
**Estimates of Drought-Affected Population in Western Sudan, 1984-86**

<b>Region/Period</b> <b>Darfur</b>	<b>Affected Population (that lived between 12° and 18° north latitudes)</b>	<b>Vulnerable Population (that lived above 13° north latitude)</b>
August 1984	1, 430	763
November 1984	No data available	763
June 1985	2, 870	752 (population at nutritional risk)
February 1986	1, 1212	No data available

**Source:** Based on data from Roger Pearson, "Lessons from Famine in Sudan (1984-86)" (United Nations International Children's Emergency Fund, Khartoum, 1986, mimeo).



Figure 3 — Map of areas of chronic food insecurity in the mid-1980s, Sudan



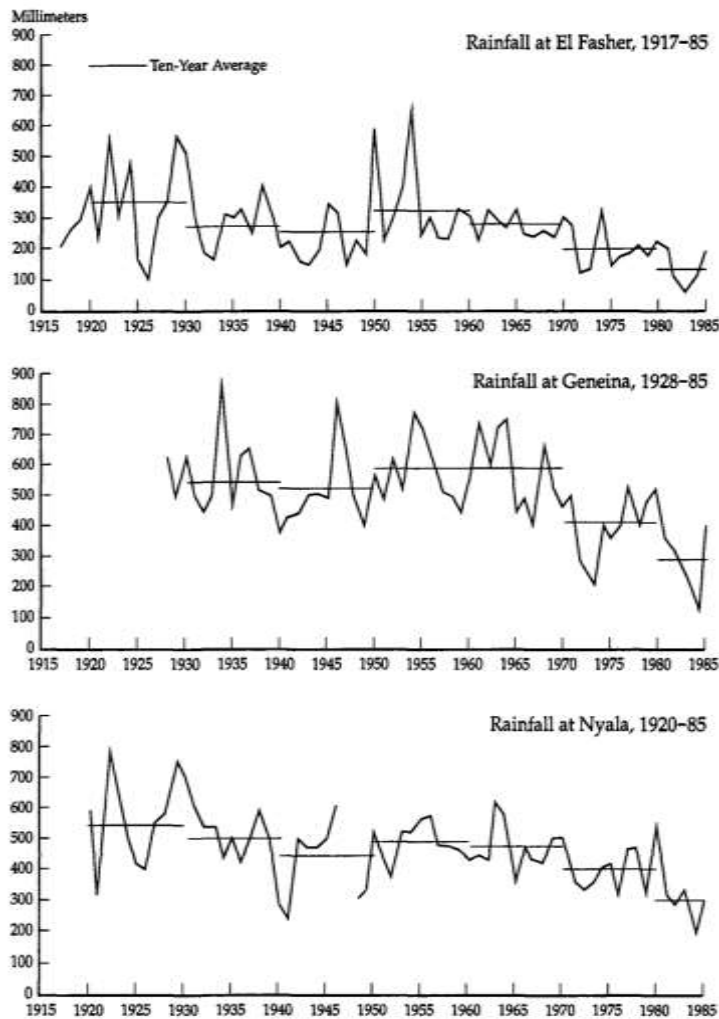
Source: Based on a map received by the authors from the World Food Programme, Khartoum.  
 Note: Mapping of population groups by severity of food insecurity is based on a combination of ecological variation and measure of food gap by area.

Source: Teklu et al. 1991:29

Droughts accelerate the process of desertification, drying up agricultural land and engulfing settlements in a cloud of dust (Williams 2008). Over 80% of the population relies on agricultural cultivation and livestock management, which dominates traditional subsistence agriculture and the Sudanese economy, particularly Darfur. Nearly half of the gross domestic product and most jobs are generated by agricultural activity. Small-scale farmers who depend on rain-fed agriculture and traditional methods while living in poverty are particularly vulnerable to climate change. One of the biggest climatic hazards Sudan faces is chronic drought, with repeated dry years becoming commonplace in the

Sudano-Sahel area. Drought poses a threat to pastoral and nomadic populations in semi-arid regions, as well as the cultivation of around 12 million hectares of mechanised rain-fed farms and 6.6 million hectares of traditional rain-fed fields (Republic of Sudan 2007: 2-3).

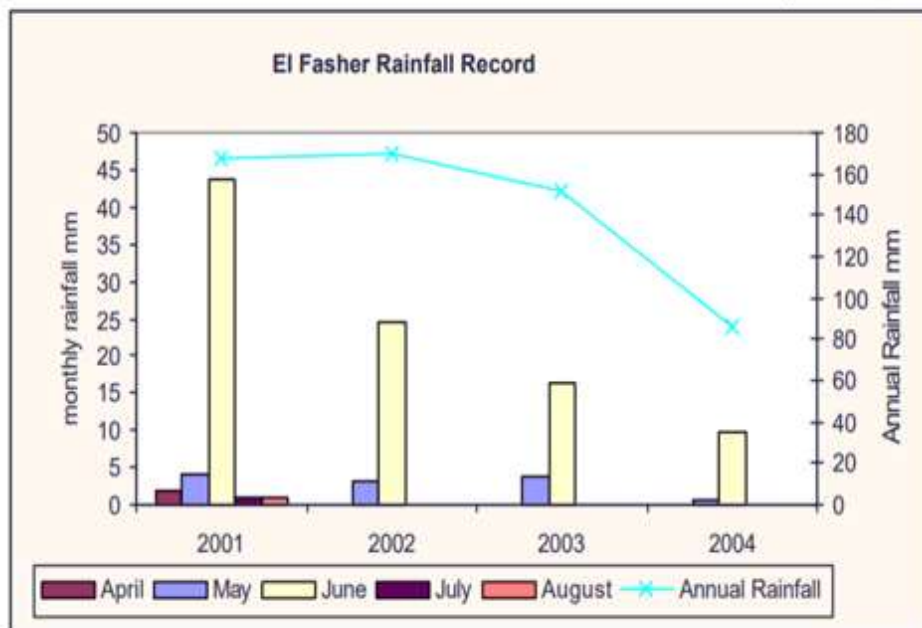
Figure 4 — Rainfall at selected sites in western Sudan, 1917-85



Drought and famine in Darfur have been severe, with millions of people experiencing food insecurity and malnutrition, and hundreds of thousands being displaced or forced to migrate. The impact of droughts in the 1980s in Western Sudan, particularly the northern part, led to low rainfall between 1982 and 1984, and between 2001 – 2004 for El Fasher in Northern Darfur (See Figure 4 for example), (Teklu et al. 1991 & International Committee of the Red Cross 2004).

Source: Teklu et al. 1991:32

Rainfall record 2001 – 2004 for El Fasher in Northern Darfur (SC-UK, Northern Darfur)

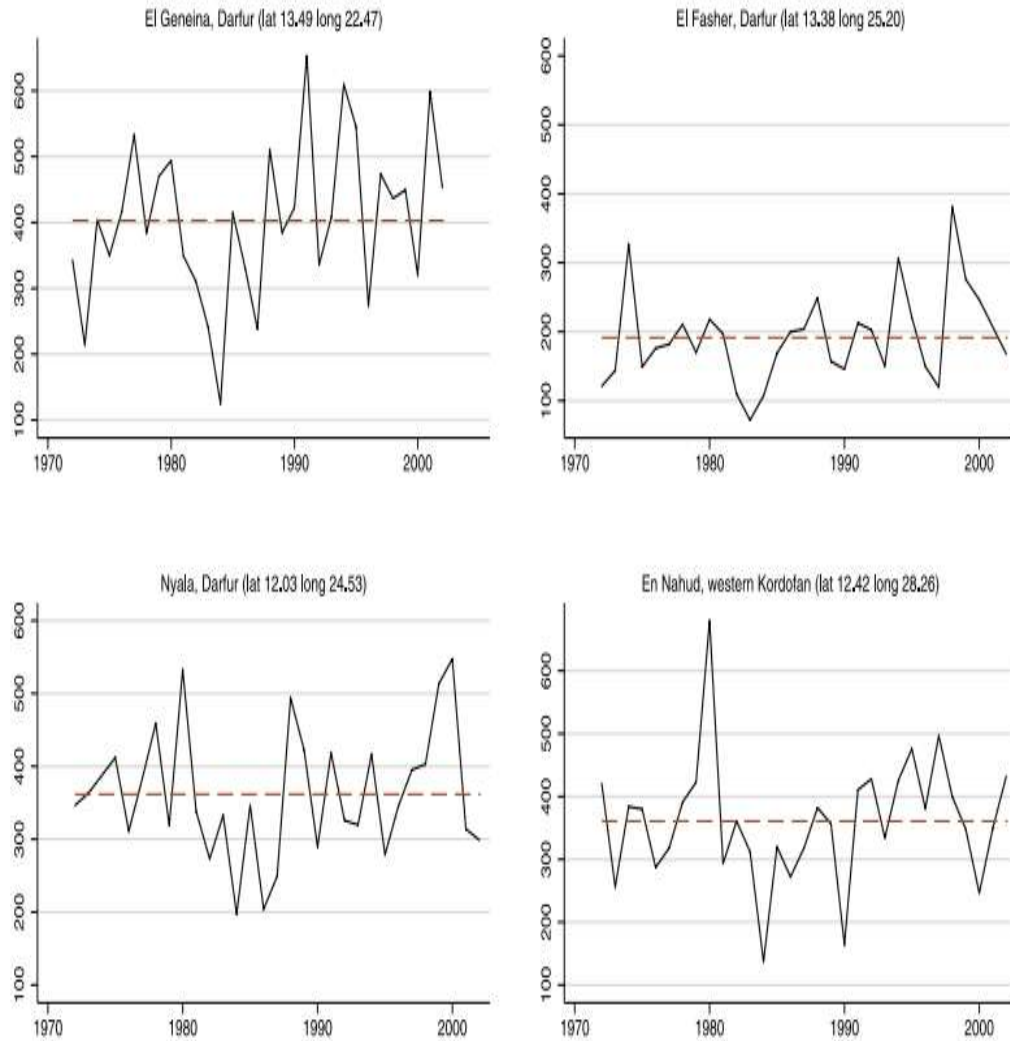


**Source:** International Committee of the Red Cross (2004)

With further variability/reduction in rainfall and with more frequent droughts, the situation will worsen in Darfur causing a significant drop in agricultural production and income. The loss of production is likely to be acute and desertification is expected to cover wide areas. The poverty level will be higher, which might mean a loss of livelihood and even more severe conflict over scarce resources (Republic of Sudan 2007: 30). Major crops like millet, sorghum, sesame, and groundnuts declined sharply, exacerbated by ongoing desertification and recurrent droughts (Swift and Grey 1989; Ibrahim 1984). Mr. Egeland, the former United Nations Emergency Relief Coordinator (2006), estimates that over four million people in Darfur needed humanitarian assistance, with malnutrition rates among children under five exceeding the emergency threshold in many areas in Darfur (UN News 2006). The displacement of communities has also led to social and economic challenges, including increased poverty, gender-based violence, and limited access to education and healthcare (The Council of Europe 2007).

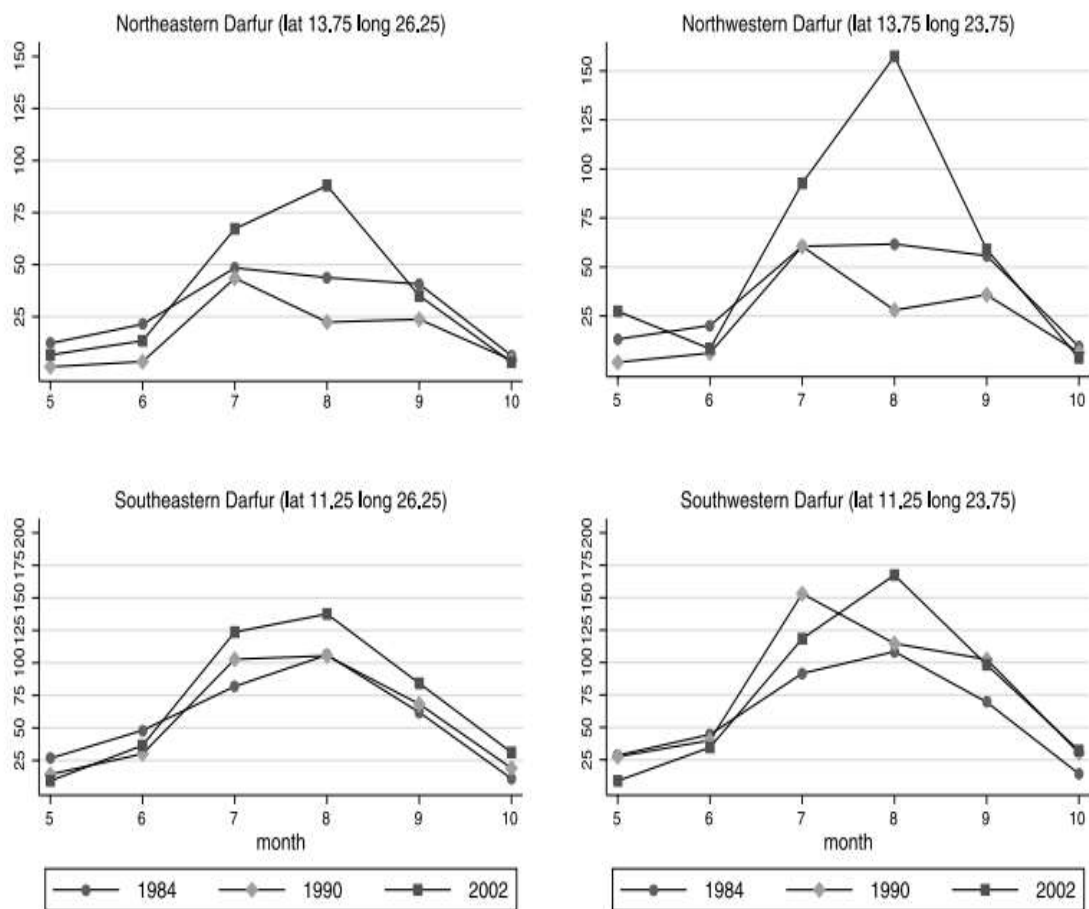
The data below shows the historical period of twenty-three years (1972–2002) for the four rainfall stations relevant to the situation in Darfur (El Geneina, El Fasher, Nyala, and En Nahud) showing a fluctuated rain period but with a lower mean. Both the rainfall

station data by David Lister and the Global Precipitation Climatology Project (GPCP) data map the substantial declines in 1984 and 1990. The GPCP data presents the distribution of monthly rainfall for the four nodes.



Source: Sudan rain station data provided by David Lister, Climatic Research Unit, University of East Anglia

**Rainfall at four rain stations in the Darfur area (annual mm), 1972–2002 (dashed lines are mean rainfall for the period).**



Source: GPCP Version 2 Combined Precipitation Data Set

### Distribution of monthly rainfall in Darfur in 1984, 1990, and 2002.

Source: (Kevane and Gray 2008: 3-8).

An African Watch 1990 report on Sudan's nationwide famine highlights the root causes, including the Darfur region, of the country's impoverishment over the past decade. According to the report findings, Sudan's nationwide famine is primarily caused by inappropriate economic policies, war, and ecological degradation. Drought is the primary cause, but weather and food production also contribute. To survive, the government often holds a large strategic grain reserve (An African Watch Report 1990). In 1989, poor rains led to low national grain production at 2.1 tonnes, with Northern Darfur being one of the most affected regions situated in the semi-arid zone. Due to mounting evidence of crop failure in Darfur, the regional government appealed for relief, with the region of Darfur requesting 66,000 tonnes. The UN World Food Program assessed the needs, estimating 3500 tonnes for Darfur.

Efforts to address drought and famine in Darfur have been hampered by a range of factors, including political instability, limited resources, conflicts, and insufficient coordination among stakeholders. However, there have been some positive developments, including initiatives to promote sustainable agriculture, improve water management, and strengthen community resilience to the impacts of climate change (UNEP 2007). International organisations such as the United Nations Environment Programme (UNEP), the Food and Agriculture Organization (FAO), and Oxfam have been involved in these efforts.

To conclude, drought and famine in Darfur are complex issues that are driven by a range of factors, including climate change, unsustainable land use practices, and armed conflict. The impacts of these challenges have been severe, with millions of people experiencing food insecurity, malnutrition, and displacement. Addressing these issues will require coordinated efforts from policymakers, stakeholders, and international organisations, with a focus on promoting sustainable development, improving resilience, and strengthening social and economic systems in the region.

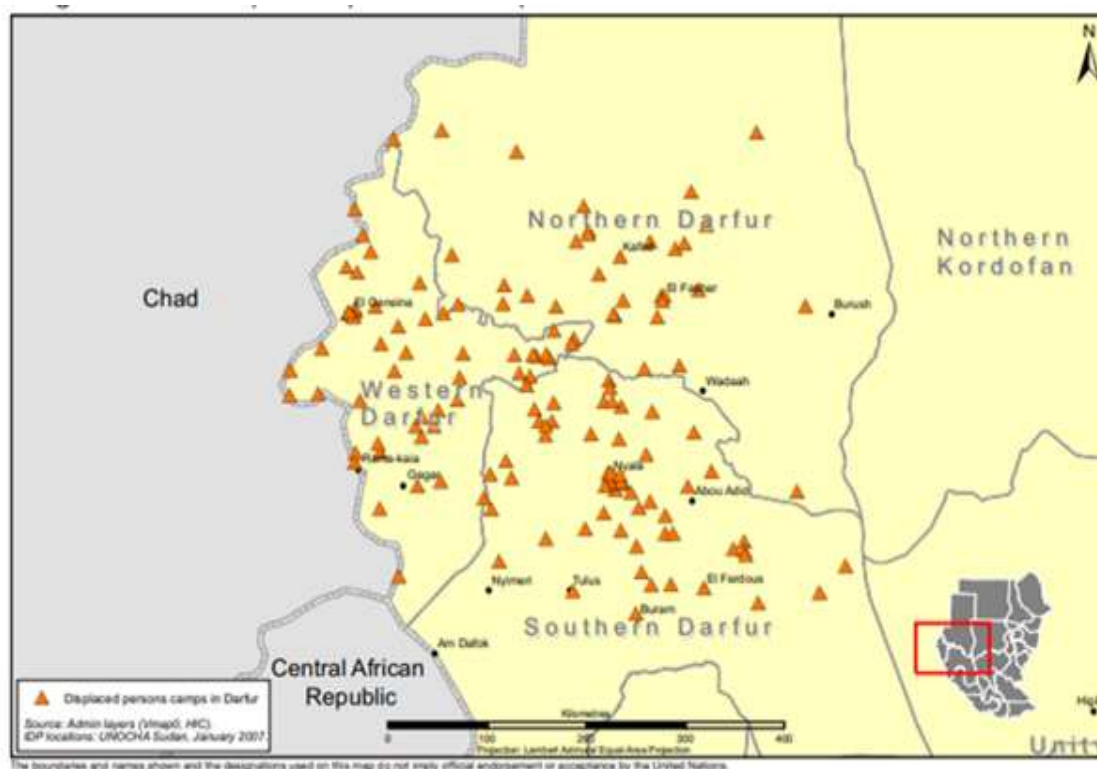
### **1.3 MIGRATION DESTINATIONS AND ROUTES OF DARFURIS**

Forced Migration and displacement have been a long history of Darfuris in Sudan. Jaspars and Buchanan-Smith (2018) argue that the effects of Darfuris migration are multiple, complex, and interlinked. Most Darfuris live in rural areas and are heavily dependent on agriculture for their livelihoods. The governance system in Darfur has been severely affected by years of instability and conflict with humanitarian crises. Darfuris in Sudan have experienced forced migration and displacement because of climate change, environmental degradation, and conflict, as opposed to labour migration or movement for pasture in reaction to food shortages, drought, and famine over time (Jaspars et al. 2020 & UNEP 2007). This section investigates these migratory patterns, as well as the reasons that prompted Darfuris to leave Sudan for neighbouring countries between the 1980s and 2016.

In Darfur, drought is considered a cause of internal displacement, with some herders being forced to move southwards in search of grazing land. The 1982-1984 droughts

prompted migration as a systemic coping strategy in the region. The 2003 conflict in Darfur witnessed changes in migration patterns in Darfur. The climate-conflict crisis led to the significant displacement of millions due to government and militia attacks and livelihood destruction. The UNEP Report (2007) highlights Darfur's crisis, causing internal displacement and migration. In Darfur, there have been more IDPs Since 2003, affecting 2.4 million people, including 1.8 million internally displaced persons (IDPs). The crisis has led to hundreds of thousands of deaths and poor living conditions in camps. Crop failure in 2004 estimated that 465,000 households would need food assistance by 2005. Due to the severity of the crisis, the report stated that 90% of IDPs lost their livestock, which had an impact on their income generation, water collection, and return. The following are the main IDP and refugee camps in Darfur highlighted by the UNEP Report (2007): Mornei-Um Shalaya, Zalingei, Kalma, El Fasher-Abu Shouk, Kebkabiya, and Kutum-Kassab (See for example Figure 6) (UNEP 2007: 100).

*Figure 6- DISPLACED PERSONS CAMPS IN DARFUR*



**Source:** UNEP 2007

According to UNCHR, around 230,000 Sudanese refugees from Darfur currently reside in Chad, with 200,000 of them living in twelve camps run by UNHCR, near the country's eastern border with Sudan. To help refugees and those seeking asylum, the government of Chad works with UNHCR and other humanitarian organisations. In 2006, the international community provided 79% of the 800 million dollars needed for humanitarian aid in Darfur. The World Food Programme and its partners aided 3.1 million individuals, and 387,500 tonnes of food were distributed. The same year, 73% of the population had reliable water access, a significant improvement from 2005. Children enrolled in primary education are estimated to be around 516,500. Internally Displaced Persons (IDPs) are protected by UNHCR, which also keeps track of their situation (The Council of Europe 2007). The prevention and response to sexual and gender-based violence is one of their top priorities. Due to the impact of the conflict, Darfuris have sought refuge in neighbouring countries like Chad and South Sudan, North Africa's Egypt, and Libya, and countries in Europe and North America (Jaspars and Buchanan-Smith 2018). In their view, Jaspars and Buchanan-Smith argue that most young Darfuris migrating to Europe are men.

Migration in Darfur with push factors involves deteriorating living conditions, such as desertification, famine, drought, natural disasters, and war which are more felt in Northern Darfur. Pull factors, on the other hand, are climate-related, such as desertification and more natural resources (Ramaix 2010: 78). As the drought lasted, nomads lost livestock and sought employment in the South. However, the 1980s drought led to a decline in crops and overpopulation in Southern Darfur, resulting in a diminished availability of natural resources which also witnessed the severity of desertification leading to the migration of Darfuris to avoid famine. This explains the hypothesis of Martin's analysis in understanding migration as an adaption strategy (Bilsborrow & de Lary 1990; Martin 2007; Ramaix 2010: 80). The United Nations Framework Convention on Climate Change (UNFCCC) adopted the Cancun Adaptation Framework during the 16th Conference of the Parties (COP-16) held in Cancun, Mexico, in 2010. It featured migration, displacement, and planned relocation as technical cooperation issues that highlight activities that help to guide adaptation. This framework called on countries to take "measures to enhance understanding, coordination, and cooperation about climate



change induced displacement, migration and planned relocation, where appropriate, at national, regional, and international levels” (Warner, 2012).

The Darfuri migrants taking one of the oldest routes, the Central Mediterranean, find themselves exposed to trafficking and slave labour, crossing border lines through various stages to travel to Libya and then on to Europe, particularly Italy. They sometimes fall victim to the hands of traffickers, who will hold them for ransom or sell them for slave labour. Moreover, these migrants and refugees are vulnerable to exploitation. Many of these Darfuri migrants who reach Europe experience a rough combination of border controls (Italy–France and France–UK), slow asylum procedures, and poor provision of assistance. Those without proper documentation (irregular migrants) face the possibility of arrest, detention, and forced return to Sudan (ibid 2018).

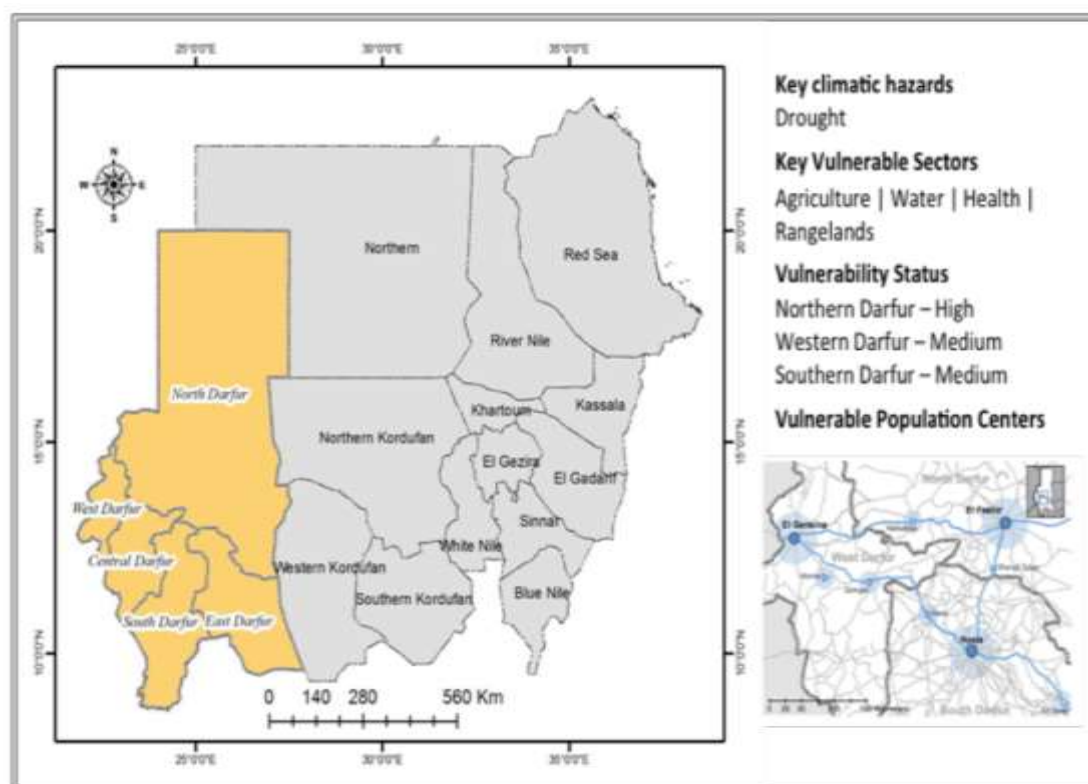
#### **1.4 VULNERABILITY AND CHALLENGES IN DARFUR**

This section outlines the vulnerability of key sectors and communities in Darfur states and offers priority adaptation strategies and measures. It also emphasises the importance of mainstreaming adaptation strategies into the Darfur state-level policy planning process. The section also highlights Darfur's state-level vulnerability and challenges based on Sudan’s National Adaptation Plan of 2016. The concept of vulnerability is crucial in understanding the link between migration and climate change. It is influenced by people's exposure to environmental factors and their ability to adapt. Vulnerability can take geographical or social dimensions, with people in drylands, small islands, or coastal areas more susceptible to climate change effects (IOM 2011).

In an interview with UNHCR's global website editor Tim Gaynor in Geneva, Andrew Harper, the UNHCR's Special Advisor on Climate Action, discussed the impact of climate change on the world's most vulnerable people, particularly in the Sahel region. Harper emphasised that climate change is the defining crisis of our time, with its impacts unevenly weighted against vulnerable communities. As Harper puts it, these communities are already experiencing impacts on food, water, land, and ecosystem services, with women, children, older people, people with disabilities, and indigenous peoples being disproportionately affected.

Harper argues that climate change is a risk multiplier or threat multiplier for other drivers of displacement, increasing food insecurity, challenges to livelihoods, and pressure on education and health services. The Sahel region is an example of how climate change can interact negatively with other megatrends, such as population growth and land productivity decline. These factors may threaten survival for the most vulnerable and add stress in the region, potentially creating a high risk of conflict (Gaynor 2020). Climate scientist Jos Lelieveld warned that North Africa could become "uninhabitable" due to rising temperatures, with Sudan being one of the most at-risk countries. According to Concern Worldwide (2022), Sudan has been named as one of the top ten countries most affected by global climate change by the Red Cross (2019), and Notre Dame data places it as the sixth most at-risk country. Sudan's vulnerability is not solely due to droughts and rainfall variability, but also due to ongoing conflict and instability, which makes life difficult for civilians and increases the demand for limited resources (Concern Worldwide 2022).

*Figure 7- Map of the Darfur States and Overall Climatic Vulnerability Characteristics*



**Source:** Republic of Sudan 2016 (National Adaptation Plan).

The Darfur region faces increased vulnerability due to climate change, resulting in challenges like rainfall decline, water scarcity, desertification, and extreme weather events. Environmental migration exacerbates these issues, leading to both external and internal displacement, competition over natural resources, and potential conflicts (local and regional). According to Sudan's National Adaptation Plan (2016), about eight million people are living in the Western Sudanese Darfur States, which have a semi-arid climate. North Darfur, West and Central Darfur, and South and East Darfur make up the region's five main states. The unpredictability of rainfall has risen recently, with North Darfur seeing twenty of the twenty-five driest years on record since 1972. Based on the assessment report, the current rate of crop failure is at 40%, and 70% of harvests are predicted to fail by 2050. The high-rainfall savannas of the southern area are highlighted to be less vulnerable to drought (Republic of Sudan 2016: 8-9).

Given the shifting rainfall patterns and high demand, future climate change is predicted to have a significant influence on Darfur's economy and population. To attain food and water security with the presence of poverty, environmental migration, and climate change across the Darfur States, an adaptation policy is essential in addressing these issues to improve the livelihood of Darfuris.

## **NORTH DARFUR**

North Darfur, with a semi-desert climate, faces drought, low rainfall, and an unfavourable geological system for groundwater storage. According to vulnerability assessments by NAPA, the southerly shift in agro-climatic zones and the decreased groundwater recharge rates would result from rising temperatures and falling precipitation. Rainfall is anticipated to decrease by 9 mm/year, which would influence the meagre output of millet and sorghum. According to climate estimates, North Darfur might see a 70% crop failure by 2050 because of insufficient or extremely unpredictable rainfall. Unpredictable rainfall and drought have prompted unsustainable coping mechanisms, such as overgrazing by cattle, aggressive farming, and deforestation, which harm the quality of the land. Agriculture and water adaptation measures are essential to reducing unsustainable farming methods and introducing better crop varieties, shelterbelts, crop rotation, water collection, and irrigation technology. The management

of supplies of water through wells and boreholes would help sustain the vulnerable communities in North Darfur, which can be relied upon during short-term droughts (Republic of Sudan 2016: 9-11).

**North Darfur State's climate and vulnerability are detailed in the table below.**

<p><b>Baseline Climate (1971-2000) – El Fashir</b></p> <p>Average annual max temperature: 35°C</p> <p>Average annual min temperature: 18°C</p> <p>Average annual rainfall: 195mm/yr</p>
<p><b>Vulnerable Areas:</b></p> <p>8 Localities with varying degrees of vulnerability</p> <p><b>Vulnerable Locations – Agriculture &amp; Rangelands:</b></p> <p>Mileet, Almalha, Umkadada, Um Baro, Karnoy, Alteena</p>
<p><b>Vulnerable Locations – Water:</b></p> <p>El Fasher, Komoi, Malhah</p>
<p><b>Vulnerable Locations – Forest:</b></p> <p>AlMalha, Al Komah, Um Kaddadh, Elfashir, Maleet</p>

**Source:** Republic of Sudan 2016

## **WEST DARFUR**

West Darfur is situated in a low-rainfall savannah region, which is home to a diverse ecology with several seasonal valleys and streams that sustain agriculture, rangelands, and forests. Rainfall varies greatly throughout the state, with some places receiving about 500 mm annually in the south and less than half in the north. Groundwater supplies from Paleozoic sandstones have kept the region alive during dry years. Farmers grow a variety of cash crops, and agriculture and animal production account for around 80% of the state's gross domestic product. According to a household health study conducted in 2006, over 40% of the population in West Darfur lack access to a nutritious daily diet, due to chronic food insecurity. However, increasing temperatures, variable rainfall, and more frequent droughts have a severe influence on cereal productivity, rangeland degradation, and deplete groundwater resources in the region. The table below highlights the vulnerability and conditions in West Darfur (ibid 2016: 11).

<p><b>Baseline Climate (1971-2000) - El Genena</b></p> <p>Average annual max temperature: 34°C</p> <p>Average annual min temperature: 18°C</p> <p>Average annual rainfall: 400 mm/yr</p>
<p><b>Vulnerable Locations – Agriculture:</b></p> <p>Gargar, Karty, Habila Kanakry, Sarba, Aesh Barah, Morny, Kirainik</p>
<p><b>Vulnerable Locations – Water:</b></p> <p>Karty, Sarba, Aesh Barah, Morny, Kirainik, Gargar, Habila Kanakry, Kulbus, Masteri</p>
<p><b>Vulnerable Locations – Health:</b></p> <p>Ateya, Karty, Sarba, Aesh Barah, Morny, Kirainik, Gargar, Habila Kanakry</p>

Source: ibid 2016

**SOUTH DARFUR**

South Darfur, located in the high rainfall savannah zone, has fertile land that supports traditional cultivation, mechanised farming, pastoralism, and forestry. Rain-fed agriculture provides cash and subsistence crops, and the southwest receives heavy rains twice a year, allowing for two harvests. However, the region faces more erratic rainfall and frequent dry spells, with 400mm of rain shifting southward of Nyala and a decrease in maximum rainfall in the Marrah Mountains. This has led to a reduction in seasonal stream levels and a decline in crop yield, potentially causing a 40% harvest failure rate by 2050. Animal production is also threatened. In addressing climate change vulnerability, South Darfur needs to address the underlying issues such as poor land management, overgrazing, deforestation, and community displacement. Adaptation plans for agriculture include improved varieties, water harvesting and spreading technologies, crop storage, community forests, nurseries, alternative energy sources, and legislation to improve communities' adaptation to climate change. While for water, there is a need to integrate the management of water resources to achieve water security. Improving primary health care services, reducing climate-induced diseases and mortalities, and providing services for a healthy environment. Awareness-raising among policymakers and government institutions is crucial for implementing these measures (Republic of

Sudan 2016: 12). The table below shows the climate and vulnerability conditions of South Darfur.

<p><b>Baseline Climate (1971-2000) - Nyala</b>  Average, annual, max, temperature: 35°C  Average, annual, min, temperature: 21°C  Average, annual, rainfall: 367 mm/yr</p>
<p><b>Vulnerable Locations – Agriculture:</b>  Kass, Nyala, Bilail, Mershing, Al Malem, Nittaiga, Alsalam</p>
<p><b>Vulnerable Locations – Water:</b>  Mershing, Kass, Nyala, Bilail, Al Malem, Nittaiga, Alsalam</p>
<p><b>Vulnerable Locations – Health:</b>  Kass, Nyala, Bilail, Mershing, Al Malem, Nittaiga, Alsalam, Rehaid, Al Birdi</p>
<p><b>Vulnerable Locations – Animal Resources:</b>  Nyala, Bilail, Al Malem, Mershing, Nittaiga, Kass, Alsalam</p>

Source: ibid 2016

## CENTRAL DARFUR

Central Darfur, a low rainfall savannah zone, is characterised by diverse climate and soils, with 80% of the population being farmers and pastoralists. In light of the region's frequent droughts, increased temperature and rainfall unpredictability, and high rates of poverty, resources are being misused by overgrazing livestock and forest deforestation. Higher maximum temperatures, more frequent droughts, decreased annual precipitation, and greater rainfall variability are all risks associated with climate change. To address these vulnerabilities, adaptation planning is needed, including building awareness in local communities about sustainable natural resource management, enforcing existing legislation, and introducing legislative reforms to protect the natural resource base. Capacity building on water harvesting techniques and sustainable cropping systems is also crucial. Rural public health awareness programmes should also be taken into consideration by local authorities to safeguard residents, especially children, against communitarian illnesses and their vectors (ibid 2016: 13).

## Central Darfur Vulnerability and Climate Conditions

<b>Baseline Climate (1971-2000) - Zalingei</b> Average, annual, max, temperature: 34°C Average, annual, min, temperature: 14°C Average, annual, rainfall: 568 mm/yr
<b>Vulnerable Locations – Rangelands:</b> Garsila, Mukjar, Golo Abata, Rokoro, Sullu
<b>Vulnerable Locations – Agriculture:</b> Shawa, Abta, Rongatas
<b>Vulnerable Locations – Water:</b> Nertati, Abta, Shawa
<b>Vulnerable Locations – Health:</b> Mukjar, Bandasi, Um Khair, Um dokhan

Source: ibid 2016

## EAST DARFUR

East Darfur is divided into climatic zones, with semi-arid northern areas, low rainfall central areas, and high rainfall southern areas. The economy is primarily pastoralist and agricultural, with 90% of the population being farmers. Key agricultural products include gum arabic, groundnuts, millet, sorghum, and hibiscus. The state of Sudan is home to a significant number of cattle, camels, and sheep, but the changing climatic conditions, including decreasing rainfall and increasing variability, are causing significant challenges to local communities' livelihoods, particularly in East Darfur. Significant water degradation brought on by climate change in East Darfur prevents regrowth and causes certain grasses and plants to vanish. The alternatives available to nomads who rely on these resources to feed their livestock are inadequate. For example, they may have to enter forests to collect lower-quality tree leaves, depend on crop wastes, or cross the border into South Sudan. Additionally, displaced individuals from neighbouring areas who have experienced less rainfall in their native regions have relocated to East Darfur. As a result, the effects of climate change have been intensified, and environmental degradation and socioeconomic upheavals have been made worse. Addressing these conditions calls for

adaptation in water, agriculture, natural resources, and health sectors by drilling new wells, rehabilitating old ones, introducing new water harvesting methods, increasing soil fertility, strengthening agricultural extension, forest farming, environmental extension programs, agroforestry techniques, protecting community forests, capacity building, public health awareness programs, and increased vaccine access (ibid 2016 :14-15).

**East Darfur Vulnerability and Climate Conditions**

<p><b>Baseline Climate (1971-2000) - Al Deain</b></p> <p>Average, annual, max, temperature: 34°C</p> <p>Average, annual, min, temperature: 21°C</p> <p>Average, annual, rainfall: 468 mm/yr</p> <p>Northern areas: 250 mm</p> <p>Southern areas: 700 mm</p>
<p><b>Vulnerable Locations – Agriculture &amp; Rangelands:</b></p> <p>El Ferdous, Silaia’a, North Deain, Um dai, Yassin, Um Labania, Sheiria</p>
<p><b>Vulnerable Locations – Water:</b></p> <p>Deain-Gallabi, Khazzan Gadeed</p>
<p><b>Vulnerable Locations – Health:</b></p> <p>Sheiria, Khazzan Gadeed, Abu Gabra, Abo Matarig, Adeela</p>

**Source:** ibid 2016

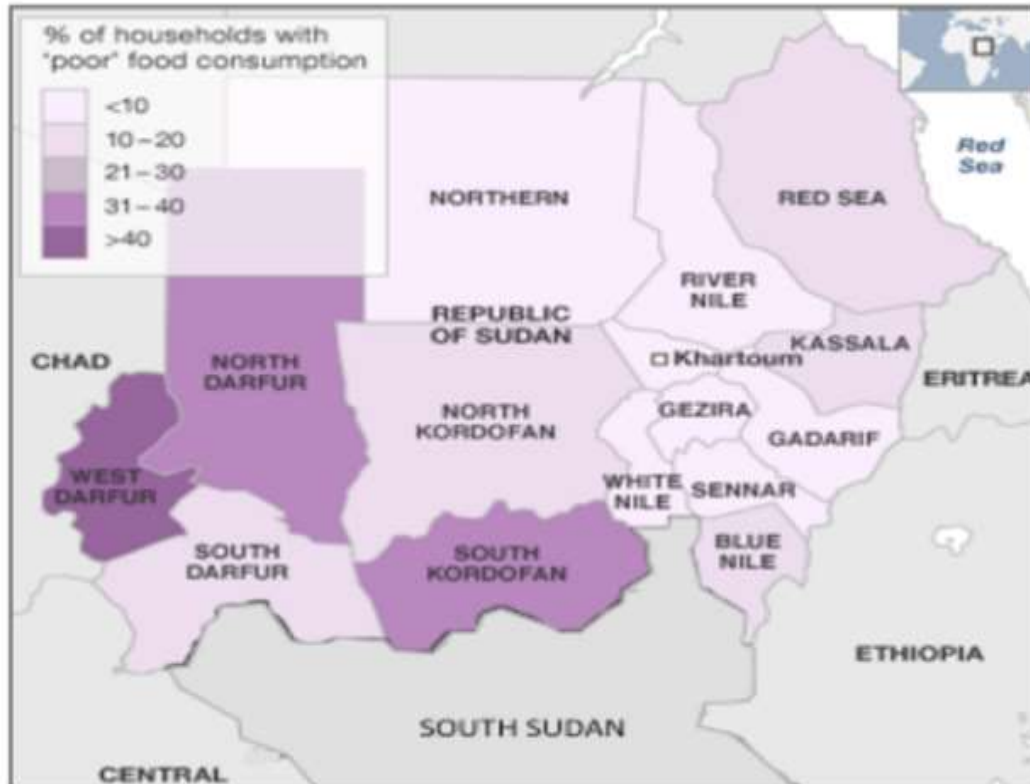
**FOOD INSECURITY IN DARFUR STATES**

Myers defined Food insecurity as the lack of sufficient food in quantity and/or quality. This definition analyses food insecurity as a nutritional state that influences diet and body weight, it also holds consequences for psychological well-being (Myers 2020). However, food insecurity can be understood as a condition where individuals, households, or communities lack reliable access to nutritious food that meets their dietary needs and preferences for an active and healthy life. The Darfur region has experienced significant food insecurity throughout its three states (North, West, and South) over the past two decades, exacerbated by climate change, environmental degradation, desertification, recurrent droughts, and famine. For example, West Darfur is identified as the highest



percentage of households with poor food consumption by the NAP 2016 (See for example Figure 8) (ibid).

*Figure 8 – FOOD INSECURITY IN DARFUR STATES*



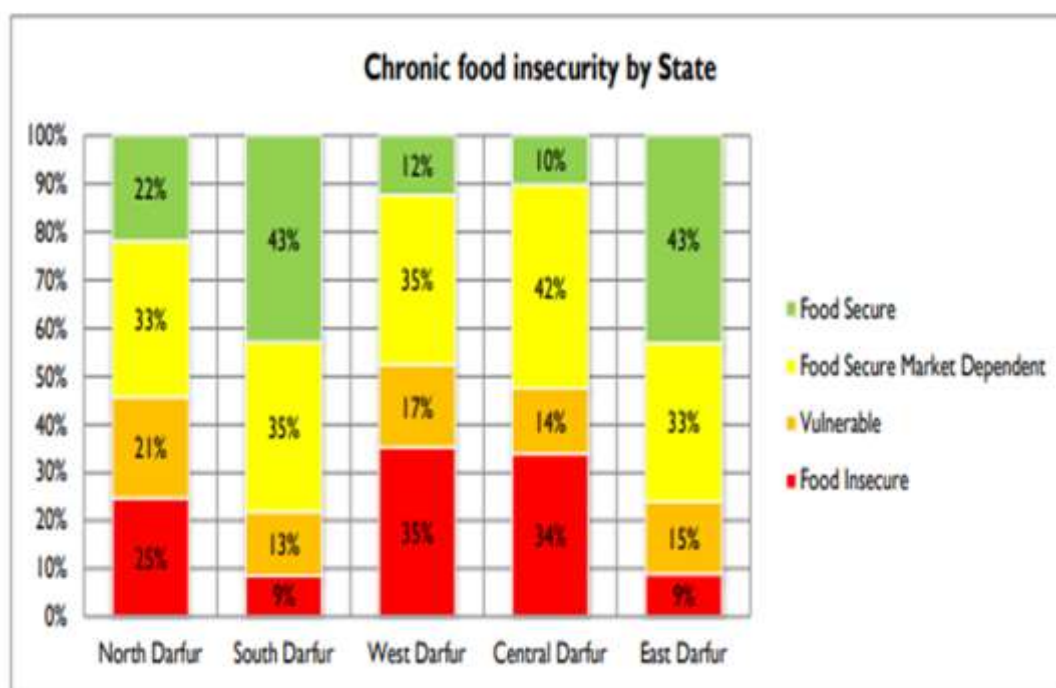
**Source:** ibid 2016:11

Most of the Darfur's population relied heavily on agriculture and pastoralism for their livelihoods. Climate change made it difficult for communities to sustain traditional farming practices due to rainfall decline, drought, crop failures, and decreased water resources for irrigation. Because of these environmental challenges, food insecurity escalated, leading to malnutrition rates, particularly among children and vulnerable populations. Limited access to nutritious food had long-term health implications for affected communities like North, West, and South Darfur (Teklu 1991). In their Comprehensive Food Security Assessment in Darfur (2012/2013), the World Food Programme outlined insecurity, fluctuations in agricultural outputs, and increased food prices as major risk factors in Darfur. The increase in market prices has significantly limited households' access to food prompting instability. Agricultural production in

Darfur fluctuates by season, depending on rainfall distribution. the WFP argues that most food-insecure households rely on market purchases, making them vulnerable to price increases. Most households in the region depend on crop production and livestock rearing, with traditional rain-fed agriculture being the dominant seasonal farming activity. Livestock rearing among agro-pastoralist groups has diminished due to the 2003 conflict, with large herd owners affected by looting and households keeping only a few domestic goats (WFP 2012/2013).

The study by the World Food Programme (2012/2013) reveals that chronic food insecurity is prevalent in Darfur states, with the highest percentages in West and Central Darfur (35-34%), followed by North Darfur (25%). East and South Darfur have the highest levels of food-secure households (see Figure 9 below) (WFP 2012/2013).

Figure 9 - Chronic food insecurity by State



Source: WFP 2012/2013

For decades, the Darfur region has been provided with food aid through humanitarian assistance by the United Nations and its agencies (UNDP, UNICEF, WFP, WFO) and various NGOs (Oxfam, Red Cross Society, Operation Lifeline Sudan (OLS), Mercy Corps, Save the Children, the Norwegian Refugee Council, and the International Rescue

Committee) played a critical role in the humanitarian response by providing food aid, clean water, and healthcare to the affected populations. Efforts were made to address the root causes of food insecurity by promoting sustainable agriculture, natural resource management, and conflict resolution (De Ramaix 2010).

In conclusion, due to the severity of the impact of climate change on environmental migration in Darfur, there is a clear and urgent need for improved climate analysis, disaster prediction, and risk reduction for Sudan in general, and for Darfur in particular. On the side of the government, tackling these issues will require a major investment in improving natural resources, water, health, agriculture, education, and drought management, as well as the formation of new policies for the sustainable use of natural resources and land for agricultural use. Investment by the international community is also warranted as part of the shift from humanitarian relief to sustainable development assistance. Environmental protection is one component of an integrated response to these issues.

## **CHAPTER TWO: THEORETICAL FRAMEWORK**

The case of Darfur is used specifically in this chapter to offer an overview of the theoretical framework and empirical study of the role played by policy-making actors in Darfur and globally in defining the issue of climate change and environmental migration. The assessment for the research highlights the need for effective policies and interventions that address the root causes of Darfuris' forced migration and examines the nexus between climate change, environmental degradation, and forced migration.

The theoretical framework will draw on the concept of framing, which refers to the way that policy-making actors define and interpret an issue. The way an issue is framed can affect how the public, policymakers, and other stakeholders view it. Framing can affect how an issue is viewed and dealt with by both national and international actors in the case of climate change and environmental migration in Darfur.

The theoretical framework will also be centred around social movement theory, which examines the function of collective action in fostering social change. Darfur's climate activists and their allies, such as policy actors and the media may operate as part of a broader social movement, advocating for action on climate change and its impacts on environmental migration. Social movement theory can help to understand how these activists mobilise support and engage with policymakers and other stakeholders.

An extensive review of academic journal articles, official reports, and reports from international organisations on climate change and environmental migration in Darfur will be examined as part of the analysis of the research question, along with an examination of the role that policy-making actors have played in defining the problem. Examining national and international policy issues, coverage by the press, and public discourse on the subject may all be part of this research.

Overall, the theoretical framework for this analysis will draw on the concepts of framing and social movement theory to examine the role that policy-making actors have

played in defining the issue of climate change and environmental migration in Darfur. The analysis will provide insights into the impact of activism on shaping public discourse and policymaker responses to this complex and pressing issue.

## **2.1 CONTEXT AND STATE-OF-THE-ART DEBATE**

In this section of chapter two, the discussion will evolve on some of the significant elements that substantiate my chosen case study concerning the issues of environmental migration and its correlation with climate change and its impact on the environment in Darfur causing drought and famine which adversely affects the agricultural sector and livelihood of the Darfuris people prompting their mobility to migrate (forced migration) and its result of not having the same legal protection as other types of migrants, such as refugees fleeing war or persecution (protected under the 1951 Geneva Convention relating to the status of refugees, among other instruments). The state-of-the-art debate highlights important areas of discussion in the field of climate change and environmental migration and their correlations.

Climate change and environmental migration are complex and interrelated issues that have been studied by scholars across various disciplines. However, due to insufficient data and a lack of agreement among scholars over the years about the relationship between climate change and environmental migration, it has been difficult to determine whether environmental migration is a unique type of migration deserving of scholarly interest (IOM 2009). Arguably, the two have now become increasingly important topics in the field of international relations, as the effects of global warming continue to have a significant impact on human migration patterns, particularly in vulnerable regions such as Darfur, Sudan. The case of Darfur has been the site of one of the most well-known cases of environmental migration caused by climate change. Flavell et al., (2020) argue that migration in response to environmental change has been in existence, and it is part of the history of human habitation on our planet. According to their view, environmentalists first considered the environment as a cause in the late 19<sup>th</sup> century, but research efforts to fully comprehend the complexities of this connection are recent (from the 1980s). It is argued that researchers, activists, and NGOs influenced environmental

migration to raise awareness and influence policy on environmental challenges in the mid-1980s. This increased the visibility of climate change, particularly its impact on refugees, and influenced international policy agendas (Flavell et al. 2020).

The prominence of these issues, climate change and its impact on environmental migration fuelled over three hundred scientists, policymakers, non-governmental and governmental organisations including prominent political figures from forty-six different nations to gather in June 1988 in Toronto, Canada for the "World Conference on the Changing Atmosphere: Implications for Global Security." The Conference Statement (World Meteorological Organization 1988: 292), which stated that "these changes represent a major threat to international security and are already having harmful consequences over many parts of the globe," was surprising in the seriousness of its warning about climate change. In response, the UN General Assembly Resolution 43/53 (UN 1988) issued a warning that climatic changes could be "disastrous for mankind if timely steps are not taken at all levels." The Resolution established the IPCC, a collaborative organisation specifically established to comprehend the widespread threat posed by a changing climate (Werrell & Femia 2019). The conference paved the way for important discussions for international action and public policy mitigation of climate change including targets for carbon dioxide (CO<sub>2</sub>) emission reduction (Gupta 2010).

Since the 2000s, there has been an increase in research on migration networks because of the contribution of some scholars' early warning signs and predictions about the potential effects of human migration. The overwhelming body of scientific data demonstrates that climate change is real, that human activity has contributed to it, and that it will have significant effects on ecosystems, including human settlements (IPCC 2007). The IPCC has been instrumental as a leading international body for the assessment of climate change, its root causes, possible effects, and solutions that exist with six assessment reports completed in 1990, 1995, 2001, 2007, 2013-2014, and 2023. At this point, the topic is the subject of considerable discussion among policy-making actors and has prompted the international community to gradually acknowledge the deeper connections and effects that a changing climate and environment have on human mobility (IOM 2009: 15; Flavell et al. 2020; & Salehyan 2008). As Shurke (1993) puts it, the examination of the perspectives of the work produced by the maximalists and minimalists

has tended to fall into two major categories in the research literature on environmental migration (Shurke 1993).

The Minimalist view – sees environmental change as a contextual variable that can contribute to migration but warns that it lacks sufficient knowledge about the process to draw firm conclusions since migration is complex and it is a multifaceted phenomenon (ibid). This view by the minimalist is supported by some scholars since environmental migrants are difficult to count because of the challenge of definition, context, and scope. Indeed, environmental migration frequently faces criticism for being too vague and lacking a consensual, precise definition or legal category connected to the ongoing debate on the status of people seeking asylum in the Global North (Armiero et al. 2017). On the other hand, the Maximalist view on migration through environmental change argues that environmental degradation has already displaced millions of people, and more displacement is expected because of climate change and its impact. All these changes on the environmental level are viewed to be caused by human activities or natural occurrences. Mansutti claims that the number of tragic events that have been happening in the Western, Eastern, and Mediterranean routes has increased public attention on migration in recent times, especially with migrants and refugees arriving on the shores of Europe from Africa, the Middle East, and South Asia (Mansutti 2020).

In their article “Migration, immobility, and displacement outcomes following extreme events (2012)”, Black et al. argue that over the next five decades, climate change is expected to increase the frequency and severity of extreme environmental events, leading to growing international concern about how to manage their effects. The argument put forward by the authors forms part of this great concern regarding extreme climatological events linked with human migration and displacement, within and between states and that climate change may lead to an increase in corresponding migrations and displacements. According to the view of the authors, the drivers of migration in response to extreme weather events are multicausal and complex. As they put it, climate change and environmental events could cause migration but other factors such as social, economic, political, and individual causes also lead to the decision to migrate (Black et al. 2012: 8).

I would like to broaden the discussion by adopting a different approach. The concept and scope of climate change and environmental migration are purposely broad because it

incorporates such a huge array of links between the environment and human mobility. Today, we are faced as scholars with one of the most challenging aspects in terms of scope and context to thoroughly define the impact of environmental migration as ‘forced’ or to define the category of the affected people as such in the literature in terms of legal status. This poses the question of arising loopholes of responsibilities in making sure that migrants are properly treated with dignity, respect, and empowered, and how these responsibilities should be managed and processed. Should the Global North countries that emit high levels of carbon dioxide (CO<sub>2</sub>), methane, and other greenhouse gases (GHGs) be held responsible, for example, and should environmental migration be dealt with through a short-term humanitarian response or better still just address its root causes and nature? As Piotr Plewa (2021) argues, environmental migrants are not considered refugees under the 1951 Refugee Convention due to the complex and multi-causal character of environmental migration (Plewa 2021). There is no legal or internationally accepted definition for individuals moving due to environmental factors.

In the absence of a legal definition or an internationally accepted one, several other proposals were made on categorising the movements of people due to environmental drivers. Others usually propose a narrower definition by either focusing on one type of movement (for instance displacement) or one type of environmental driver (for instance climate change impacts). There is a debate about whether recognising the term “environmental refugees” or “climate refugees” could undermine the protection of conventional refugees due to the gaining ground of the term in the media. While not as protected as refugees, environmental migrants are still protected by the Guiding Principles on Internal Displacement as well as by international human rights law (Glahn 2009; Morrissey 2009; & Lopez 2007). However, this growing concern in arguments against expanding the 1951 Convention definition of a refugee includes fear of reducing the protection already in place for the current one (King 2006).

The IOM has developed conceptual frameworks for environmental migration, aiming to capture the complexity of the issues involved. In their view, “Environmental migrants are persons or groups of persons who, predominantly for reasons of sudden or progressive change in the environment that adversely affects their lives or living conditions, are



obliged to leave their habitual homes or choose to do so, either temporarily or permanently, and who move either within their country or abroad” (IOM 2007: 33).

The definition of environmental migration is broad and flexible to accommodate diverse population movements caused by various environmental drivers. It reveals that environmental migration can take various forms, including forced and voluntary, temporary, and permanent, internal, and international, individual, and collective, and near and distant. The nature, duration, and scale of environmental migration depend on whether it occurs in slow-onset events or sudden-onset processes exacerbated by climate change and environmental degradation. Scholars have argued that environmental stress-induced migration and displacement are best elaborated by historical and political factors (Zetter & Morrissey 2014). The devastating famine and drought in Darfur causing population displacement and food insecurity since the 1980s is an example of migration regarding climate change.

## **2.2 THE NEXUS BETWEEN CLIMATE CHANGE, ENVIRONMENTAL DEGRADATION, AND FORCED MIGRATION**

In the context of Darfur, the nexus between climate change, environmental degradation, and forced migration has been crucial and it is nothing new; after all the environment has long been one of the main forces for migration. Given the number of conflicts it has experienced and the unstable situation of Darfur, Sudan has a long track record of forced migration (MGSOG 2017). However, the relevance of it today and in the future is increased by climate change. In its First Assessment Report (1990), the Intergovernmental Panel on Climate Change (IPCC) stated that "the gravest effects of climate change may be those on human migration" with millions of people being uprooted due to coastline erosion, coastal flooding, and agricultural disruption. Successive reports have shown that there is a growing body of evidence that environmental degradation, and particularly climate change, is poised to become a major driver of population displacement" (IPCC 1990 & Brown 2007). Additionally, a paper titled "Migration and Environment" report published in 1992 by both IOM and the Refugee Policy Group, asserts that "large numbers of people are migrating as a result of environmental

degradation that has increased dramatically in recent years." As a result, climate change has made places uninhabitable, and this could lead to an increased number of migrants (IOM 1992). This nexus has been the subject of many research papers, demonstrating the intricate connection between these elements.

The scholarly debate on this nexus is due to the complex interaction of these causes. Darfur in western Sudan has experienced severe humanitarian crises and forced migration. While it is crucial to recognise that several causes, such as political, ethnic, and economic difficulties, have contributed to these problems in Darfur, environmental degradation and climate change have also played a leading role in aggravating the situation. These pressing issues are escalating poverty and endangering the way of life for millions of people by threatening the vital resources that Darfuris depend on, such as rich land and freshwater. These effects also increase intergroup conflicts, which feed political and economic unrest and exacerbate violence.

First, it is critical to comprehend the context of the problem by analysing the link between war/conflict and environmental degradation. Scholarly empirical research indicates that the environment has little influence on the risk of organised violence (Buhaug 2010; Raleigh & Urdal 2007). As it supports the Malthusian idea of resource scarcity, causing environmental degradation, poverty, and resource disputes, climate change may result in violent conflicts. Climate change, according to Mohamed Osman Akasha (2013), is not likely to cause violent conflict. Instead, it could serve as a "threat multiplier," causing environmental degradation that may exacerbate related causes linked to violent conflict (Akasha 2013).

Ismail El Gizouli, former head of the UN International Professional Committee on Climate Change, believes climate change significantly contributes to Darfur's ongoing conflicts. Resource disputes are at the heart of the conflict, which worsens as natural resources become scarcer (Ayin Network 2021). Kevane and Gray (2008) asserted that the decline in rainfall and land degradation in the Darfur states increased the level of violent struggles over water, pasture and farmland resulting into a full-scale civil war in 2003. They further acknowledged this claim by citing the strong view of the Sudan's government attributing the Darfur conflict to environmental change (Kevane & Gray 2008: 1). In Ismail's view, the issue of climate change affects not just the environment

but also the economy, society, and security. Strong empirical evidence relating climate and war has been found in the Darfur crisis, which serves as a classic illustration.

The study by Benjaminsen et al. (2012) suggests that climate change may also drive land-use conflicts in the Sahel region (Benjaminsen et al. 2012: 1-3). Generally, armed conflicts and wars have profound and far-reaching impacts on the environment, often resulting in severe degradation and destruction of natural resources and ecosystems. Conflicts often involve the exploitation of natural resources, such as timber, minerals, and oil, to finance war efforts. This leads to unsustainable extraction practices, deforestation, and ecosystem disruption as in the case of Darfur, Sudan. The impact of the Darfur crisis can be viewed as direct environmental damage affecting Darfur's agricultural lands, forests, water resources, and infrastructures. As stated by Accord, Darfur, the "first climate change conflict," has emerged due to environmental and political factors. Research suggests that environmental degradation in Darfur has contributed to increased conflict between farmers and pastoralists (ACCORD 2022 & Ayin Network 2021). According to De Waal (2022), more than two million people were reported to be forcibly displaced in Darfur as refugees due to the conflict between April 2003 and January 2005 (De Waal 2022: 59).

In Darfur, the UNEP report maintained that "complex but clear linkages exist between environmental problems and the ongoing conflict" (UNEP 2007). Moreover, the report also stated that overgrazing, deforestation, and drought in Darfur have reduced vegetation cover and the quality of topsoil. With most people's livelihoods closely related to access to natural resources, this has led to increased competition for water and fertile land (Watts 2011). Climate change and environmental degradation have been identified as two of the main factors driving migration and exacerbating these challenges, leading to increased competition for resources and displacement of communities. These issues were named as the primary causes of the conflict in Darfur in the United Nations Environment Programme's (UNEP) study of Sudan in 2007. According to the UNEP, "Food insecurity and conflict in Darfur are primarily the result of environmental degradation, as well as regional climate instability and change" (ibid 2007). DeWaard and Smit (2010) argue that climate change in Darfur has led to increased drought and desertification, which has affected the livelihoods of the people in the region. As a result,

many Darfuris have been forced to migrate to other regions in search of food, water, and pasture (DeWaard & Smith 2010).

The migration of Darfuris has led to competition for resources and has contributed to the conflict in the region. Darfur's current peace is being directly threatened by significant environmental degradation, which threatens the region's chances for long-term peace and prosperity. This degradation is a result of both the influence of human activity and the effects of climate change, over which Darfuris have little control. Darfur's war has frequently been fuelled by environmental challenges as more people compete for dwindling resources (ACCORD 2022). A catastrophic example of societal disintegration brought on by ecological collapse is in Northern Darfur, where population increase and environmental stress have resulted in wars brought on by political, tribal, or ethnic disputes (ibid 2007).

The Darfur conflict began in 2003 when the Sudan Liberation Army (SLA) and the Justice and Equality Movement (JEM), groups predominantly composed of non-Arab ethnicities, took up arms against what they perceived as decades of neglect and discrimination by the Sudanese government in Khartoum (De Waal 2007). The government responded with a counter-insurgency campaign involving Sudanese armed forces and allied Arab militias known as Janjaweed. The conflict in Darfur has resulted in a significant humanitarian crisis, with estimates of up to 300,000 people killed and over 2.5 million displaced (UNEP 2007). Its impact felt across the country and globally, describing it as one of the largest humanitarian conflicts in the world resulting in the displacement of millions of people and thousands of deaths (Macauley 2016: 4). Despite the multiple peace agreements between the Sudanese government and various armed groups in the Darfur region, the region still experiences unstable peace and political instability. The conflict in Darfur has also led to international criminal charges against several top Sudanese officials, including former President Omar al-Bashir, who was indicted by the International Criminal Court for war crimes, crimes against humanity, and genocide in Darfur (ICC 2019). Some scholars have identified several factors that contributed to the conflict, including political, economic, and environmental factors. One of the environmental factors that have been identified is climate change (El-Tayeb 2011 & Ahmed et al. 2013). The Darfur conflict will make it more difficult to address the needs

of climate-change-affected populations, as witnessed in Sudan during the severe drought in Sub-Saharan Africa. This is also supported by Young et al. in their analysis that the Sahel region of Sudan has been caused largely by climate variability, including three decades of near-drought conditions.

Low rainfall and periodic severe drought have been a slow onset factor in the Sahel region which have resulted in the rapid loss of pastoral, agricultural, and forest areas, aggravated by the increasing food and energy needs of the Sudanese population, which is about 39.5 million, according to the UN's 2017 estimation (Young et al. 2009 & Infonile 2019). Mohamed Osman Akasha (2013) argues that important stakeholders ignored the fact that Climate change, including desertification and decreased rainfall, is a major factor in the Darfur crisis, which began in the 1970s. The 1980s saw severe drought and famine, intensifying the issue, leading to increased competition for land, water, and natural resources in Darfur (Akasha 2013). For more insight analysis relating to the nexus between climate change, environmental degradation, and forced migration, particularly in Darfur, highlighting how the changing climate, including increased droughts, famine, and desertification, has led to competition for scarce resources, such as land and water, exacerbating tensions among different communities, see out the following sources (United Nations Environment Program 2007; Akasha, M. O., 2013; Abdelaziz et al., 2019; Elagib, N. A., 2018; Kevane, M., & Gray, L., 2008; Salehyan, I., & Hendrix, C. S., 2014; Woodward, P., 2011; & Human Rights Watch, 2008).

Additional important sources that further address the connections between climate change, environmental degradation, and forced migration are highlighted below: the World Bank Report 2018, "Groundswell: Preparing for Internal Climate Migration" examines how climate change could lead to increased migration within countries. The report estimates that by 2050, climate change could force over 140 million people to move internally within their countries. The report also emphasises the role of environmental factors, including water scarcity, agricultural stress, and sea-level rise, as drivers of migration (WB 2018). The publication, "Environmental Change and Migration: A Review of West African Case Studies" by the International Organization for Migration (2011), provides an overview of case studies from West Africa, examining the relationship between environmental changes, such as desertification, drought, and coastal erosion, and

migration patterns. The study explores the various factors that influence migration decisions and the potential consequences of environmental degradation on human displacement (IOM 2011). In their study, "The Geopolitics of Climate Change, Migration, and Conflict (2019)", the Center for Climate and Security explored the geopolitical implications of climate change, migration, and conflict, emphasising the potential for increased tensions and instability. The study highlighted how climate change and environmental degradation can function as stressors, exacerbating existing social, economic, and political issues and contributing to forced migration and conflicts (CCS 2019). Another scholarly source drawing on the nexus is the publication "Climate Change, Forced Migration, and International Law" by the United Nations High Commissioner for Refugees (2018): analysis of the legal framework surrounding climate-induced forced migration. It examines the challenges in addressing the protection needs of people displaced by climate change and provides recommendations for policy development and legal responses to ensure the rights and well-being of affected populations (UNHCR 2018).

Furthermore, the report on "Global Warming of 1.5°C" by the Intergovernmental Panel on Climate Change (IPCC) (2018) assessed the impacts of global warming of 1.5 degrees Celsius above pre-industrial levels. It highlights the risks associated with exceeding this temperature threshold, including increased frequency and intensity of extreme weather events, sea-level rise, and ecosystem disruptions. These impacts can contribute to displacement and migration, particularly in vulnerable regions, particularly Darfur (IPCC 2018). These studies provide valuable insights into the interconnectedness of climate change, environmental degradation, and forced migration. They highlight the need for comprehensive approaches that address both the root causes and the consequences of these challenges to mitigate their impacts on human populations and ecosystems.

The need for effective policies and interventions is crucial in addressing the root causes of migration in Darfur which has experienced significant environmental challenges, including desertification, drought, and land degradation, which have been identified as key drivers of migration in the area. In 2007, the UNEP conducted an assessment on "Sudan Post-Conflict Environmental Assessment: Darfur", exploring the environmental challenges in Darfur, including desertification and degradation of natural resources. It

emphasises the importance of addressing these environmental factors to prevent displacement and promote sustainable development in the region (UNEP 2007). A study conducted by Elasha et al. (2005) explored the causes and impacts of desertification in Sudan, with a specific focus on the Darfur region. It highlights the need for policy interventions that address land degradation, promote sustainable land management practices, and support local communities affected by environmental challenges (Elasha et al. 2005).

The report by the United Nations Development Programme (2009) on “Sudan: Climate Change Risk Profile”, highlights the vulnerability of Sudan, including the Darfur region, to climate change impacts. The report emphasises the need for policies and interventions that address the underlying causes of migration, including climate change adaptation measures, sustainable land and water management, and livelihood diversification (UNDP 2009). Another source linking the effectiveness of policy intervention in Darfur is the Internal Displacement Monitoring Centre (2018) on Sudan: A climate change hotspot. This briefing paper by IDMC discusses the role of climate change in exacerbating displacement and conflict in Sudan, including Darfur. It underscores the importance of integrated policies that address climate change, environmental degradation, and displacement, with a focus on sustainable resource management and resilience-building measures (IDMC 2018). These references shed light on the need for effective policies and interventions to address the root causes of migration in Darfur, particularly about climate change and environmental challenges. They emphasise the importance of sustainable land management, climate change adaptation measures, and support for affected communities as key elements in mitigating migration pressures and promoting long-term resilience in the region.

### **2.3 THE ROLE PLAYED BY POLICY-MAKING ACTORS BOTH NATIONAL AND INTERNATIONAL IN DEFINING CLIMATE CHANGE AND ENVIRONMENTAL MIGRATION**

Discussions in this section will analyse a crucial pressing global issue-climate change and environmental migration with a focus on the role played by policy-making actors

both in Darfur and internationally. As the impacts of climate change continue to intensify, the world is experiencing a growing phenomenon of environmental migration, where individuals and communities are forced to leave their homes and seek new settlements due to environmental degradation and the changing climate. From the drought-stricken regions of sub-Saharan Africa to the disappearing coastlines of small island nations, the impact of environmental migration is deeply felt across the globe.

Today, the phenomenon of climate change and environmental migration has taken a new dimension as climate change and its impact threatens traditional landscapes and livelihoods, leading to population displacement (IOM 2021). Climate change, caused predominantly by human activities, has unleashed a chain of environmental catastrophes, including rising global temperatures, erratic weather patterns, melting glaciers, intensifying storms, and rising sea levels. These changes directly affect ecosystems, economies, and societies, posing immense challenges to human survival and well-being. One of the profound consequences of these climatic shifts is the unprecedented wave of environmental migration, also known as climate-induced migration (IOM 2011).

Sudan, the biggest country in Africa, has tremendous problems because of climate change since it impacts ecosystems, natural resources, and farmers' and pastoralists' livelihoods. It is challenging for them to maintain their livelihoods due to increasing heat stress, famine, and drought. Climate change in Sudan affects vulnerable people, notably the Darfur area, this is a severe concern for sustainable development (Republic of Sudan 2007). The issue of climate change and environmental migration is becoming more urgent and pressing than ever. The impact of these issues is not felt equally, and it is vital that every actor can contribute to finding solutions to build resilience and reduce climate vulnerability, especially in marginalised communities and regions like Darfur in Sudan. We all can contribute to actions to combat climate change, unlike nation-states, which can simply alter trade policies or decide whether to welcome or reject refugees (in the case of climate migrants), for example. A key component of global climate governance, the involvement of policy-making actors in addressing climate change and environmental migration has grown significantly. Researchers have suggested that they have enormous potential to address environmental migration and



climate change. However, their expanding involvement is often difficult to analyse due to its broad nature (Hale 2018).

Sabatier and Jenkins-Smith (1993) defined policy-making actors as “individuals, groups, organisations, and institutes that are actively involved in the policy process” (Sabatier & Jenkins-Smith 1993: 21). They argue that policy-making actors can be classified into different advocacy coalitions based on their shared beliefs, values, and interests. These coalitions can compete or collaborate to influence policy outcomes. On the other hand, Birkland (2015) defines policy-making actors as “individuals or groups that have the power to affect the development or implementation of policies or programmes” (Birkland 2015: 29). According to Birkland, policy-making actors can have different levels of power and influence depending on various factors, such as their resources, expertise, their ability to mobilize public opinion and access to decision-making. Dye emphasises that policy-making actors include formal institutions such as the legislature, executive branch, and judiciary, as well as informal actors such as interest groups and the media (Dye 1972: 22). These actors can shape policies through various means, such as lobbying, advocacy, research, and public engagement. In the case of Darfur, Sudan, policy-making actors may be national, from within the region, or international, from outside the region.

## **DARFUR’S MAIN POLICY-MAKING ACTORS**

The theory of framing and social movement provides a lens to analyse how policy-making actors, both national and international, shape the discourse based on their employed strategies and responses surrounding climate change and environmental migration in Darfur. These actors have been instrumental and significant in drawing attention to this issue. By analysing the framing choices of policy-making actors, we can gain insights into their perspectives, priorities, and approaches in defining and addressing climate change and environmental mitigation in Darfur. However, it is important to note that framing is a dynamic process, and different actors may employ multiple frames simultaneously based on their specific goals and interests.

Understanding how policy-making actors influence public perceptions and debates on complex issues like climate change and environmental migration requires a solid

understanding of the idea of framing. Framing helps understand how climate change and environmental migration are interpreted and contested by various actors, providing valuable insights into their interpretations and controversies (Ransan-Cooper et al. 2015). Discourses on climate change-induced migration show multiple frames and politicisations of the subject (Ayeb-Karlsson et al. 2018). The framings of climate migration in policy, advocacy, and other arenas are examined by Ransan-Cooper et al. (2015). People who move in response to a changing environment live as hybrids; they are either re-victimised as pathological dangers to host communities or re-victimised as victims of climate change who reappear as adaptive agents looking for employment in distant labour markets (Sakellari 2022). According to the "threat" framing, migration is frequently seen as either a successful adaptation strategy, a kind of climate change resistance, or a failure to adapt (Baldwin 2013). In Felli's view, the phrase "climate migrant" is frequently used to encourage migration as an adaptation strategy and to combat the negative connotations attached to the idea of "climate refugees" (Felli 2013).

To describe and convey the difficulties of climate change-induced migration in Darfur and globally, Darfur's policy-making actors build narratives, languages, and representations. They highlight some environmental migration drivers such as environmental degradation, drought, famine, and climate change while downplaying other factors. Framing can influence the distribution of responsibility among actors and the representations of environmental migrants. The media plays a significant role in amplifying framing strategies, while power dynamics and vested interests shape the discourse. Understanding the concept of framing is crucial for promoting inclusive climate science and effective mitigation policy responses to climate change-induced migration challenges (Stecula & Merkle 2019). According to Chong and Druckman (2007), framing is a crucial concept in communication studies, involving the development of a specific conceptualization or reorientation of thinking about an issue through interdisciplinary research (Chong & Druckman 2007: 102). As Nisbet rightly puts it, frames are interpretive storylines that communicate the problem, responsibility, and action needed to address an issue (Nisbet 2009: 15). Nisbet and Scheufele further argue that mainstream media and opinion leaders use various frame devices, including

catchphrases, metaphors, sound bites, and photographs, to raise public awareness about climate change (Nisbet & Scheufele 2009).

One of the key findings of the literature on climate change and environmental migration is that there is often a complex interplay between environmental factors and other social, economic, and political factors in driving migration. In the case of Darfur, for example, many scholars have argued that while environmental factors such as drought and desertification have played a role in causing displacement, political factors such as government repression and violence have also been important factors in driving migration (El-Tom 2016; Flint & De Waal 2008 ). Smith et al. (2018) argue that policy-making actors at the national level may frame climate change and environmental mitigation in Darfur as a multifaceted issue, encompassing environmental degradation, natural resource management, and sustainable development (Smith et al. 2018). On the other hand, international policy-making actors may frame the issue as a global challenge that requires collective action and cooperation to address the causes and impacts of climate change and environmental degradation in Darfur (Jones & Brown 2019).

In framing this issue from the level of state actors (government level), states have been emphasised as one of the most significant actors in international politics. States are the main actors on the world stage as legal sovereign actors. For example, other actors such as multinational corporations or international organisations must work within the framework of inter-state relations. In addressing climate change and environmental issues, states cooperate with other actors, such as intergovernmental organisations (UN, EU, AU, etc.), non-governmental organisations (NGOs), and climate activists. Based on the important roles they play in establishing international organisations and being parties to important international laws dealing with the climate crisis and environmental issues, this position of the realist perspective placed states with such relevance in the international system. For example, the United Nations conferences on the environment had a major influence on the development of the international political system, reflecting the underlying shifts in the scope and perception of environmental challenges.

The United Nations Environment Programme (UNEP) and numerous government states' formation of environmental ministries were both results of the United Nations Conference on Human Environment (UNCHE), which was held in 1972 in Stockholm,

Sweden. At the second major UN Conference on Environment and Development (UNCED), which took place in 1992 in Rio de Janeiro, Brazil, an important development in the fight against environmental problems was documented. The UN Conference highlighted the notion of sustainable development and a compromise between the economic aspirations of the Global South and the environmental concerns of wealthy countries. The collaboration of scientists and multifaceted environmental organisations helped to persuade policymakers in the world to task the World Meteorological Organization and the UN Environment Programme with establishing the Intergovernmental Panel on Climate Change (IPCC) in 1988. The participation of state actors in these three climatic conferences (Rio 1992, Kyoto 1997, and Copenhagen 2009) indicates their active role in addressing key core issues of the above conferences for emissions reductions for the developed and developing countries, including Sudan.

In the case of Darfur, Sudan, the government has been instrumental in signing treaties and conventions of international law and environmental laws to safeguard the environment. For example, the government of Sudan is a signatory to numerous international and regional multilateral environmental agreements (MEAs), such as the following:

- the Convention on Biological Diversity (CBD-1992),
- the Cartagena Protocol on Biosafety (2002),
- the African-Eurasian Waterbird Agreement (AEWA-1999),
- the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES - 1973),
- the African Convention on the Conservation of Nature and Natural Resources (Africa Convention - 2003),
- the Ramsar Convention on Wetlands (1971),
- the Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO WHC - 1972),
- the United Nations Convention to Combat Desertification (UNCCD - 1994),
- the United Nations Framework Convention on Climate Change (UNFCCC - 1994),
- the Vienna Convention for the Protection of the Ozone Layer (1985),

- the Montreal Protocol on Substances that Deplete the Ozone Layer (1987),
- the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989),
- the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes within Africa (1991),
- the Stockholm Convention on Persistent Organic Pollutants (POPs - 2001),
- the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998),
- the United Nations Convention on the Law of the Seas (1982),
- the Convention on the International Maritime Organization (1958)
- the Regional Convention for the Conservation of the Environment of the Red Sea and the Gulf of Aden (PERSGA - 1982),
- the Kyoto Protocol (2004),
- the Paris Agreement (2016).

These agreements by the government aim to protect the environment and promote sustainable development in Sudan including Darfur states (UNEP 2007: 298). Responding to the issue of climate change and environmental migration is a national priority in Sudan, particularly in Darfur. Sudan, a Least Developed Country, and UN Framework Convention Party member, collaborates with the international community to reduce its climate change vulnerability. Even though it contributes less than 0.04% to the global emission of greenhouse gas, Sudan's rural communities including the Darfur region, natural resources, agricultural productivity, and coastal infrastructure are particularly vulnerable to climate change (Republic of Sudan 2013). As part of its obligation, the government of Sudan conducts an environmental impact assessment at least for transnational projects, to protect human beings from polluting activities by third parties (including corporations and to respect biodiversity according to obligations stemming from international treaties and laws). The Sudanese government has taken several steps to address the issue of climate change and environmental migration in Darfur. One important initiative has been the establishment of the Climate Change Unit within the Ministry of Environment, which is responsible for developing policies and strategies to address climate change and its impacts. The unit has been working to develop

a national climate change strategy, which is intended to provide a framework for addressing the issue of climate change across various sectors in the country (UNDP 2011).

In addition to these efforts, the Sudanese government has also established several programmes aimed at promoting sustainable agriculture, improving water management, and reducing deforestation in the region. For example, the government has implemented a program to promote agroforestry in Darfur, which involves planting trees and crops together to improve soil fertility and increase agricultural productivity (FAO 2011). The government has also implemented a program to improve water management in the region, which includes building water harvesting structures, rehabilitating wells, and promoting water conservation practices (UNDP 2011).

Climate change is a major threat to food security and sustainable development, with water, agriculture, coastal zones, and public health being the most vulnerable sectors. Since 2007, the government of Sudan has acknowledged the impacts of climate change and environmental degradation on Darfur. In its National Adaptation Programme of Action (NAPA) submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in June 2007, Sudan highlighted the need for building climate resilience and climate change adaptation and identified priority areas, including sustainable natural resources management, water resources, and disaster management (Republic of Sudan 2007).

The adoption of the National Adaptation Plan (NAP) in 2016 by the Sudanese government was an important milestone in establishing a clear and actionable framework for adaptive, flexible, and decisive action to reduce climate change risks. The NAP emerged as the primary policy framework for recommending essential action by the government in reforming its present programmes and procedure to guarantee that adaptation and climate risk management are integrated into the larger Sudanese sustainable development planning process. As a result of this initiative, it made it possible for climate change adaptation to become ingrained in the larger Sudanese development framework. It also called for businesses to undertake wide-ranging adaptation investments linking successful operations with risk reduction practices and emergency management arrangements. One crucial factor was introducing a framework for developing new land use arrangements, decentralised management systems, and

legislative initiatives to reduce exposure to gathering risks from climate change (Republic of Sudan 2021: 13-16). Moreover, Sudan actively takes part in regional climate change efforts and international cooperation programs including the First National Communication, National Adaptation Programme, and Second National Communication. These programmes have increased public awareness, created institutions to address climate change, and developed capability (ibid).

The emergence of the environmental movement in the post-1970s new social movement era was a recognition of the need for more extensive advocacy to acquire influence in the political, policy, and public spheres. This movement is a term used to refer to a variety of individuals who have been active in environmental activism since the nineteenth century and earlier (Wall 1994). In addition, the emergence of new non-state actors (NGOs) in Canada, America, and Europe, connected to the social movements organizations such as Friends of the Earth, Greenpeace, and the Worldwide Fund for Nature/World Wildlife Fund with more established pressure groups like the US Sierra Club and the British Royal Society for the Protection of Birds have awakened public attention over the importance of taking measures aimed at addressing environmental issues (Chesters & Welsh 2011: 94-95).

On the side of climate activists, they have played a significant role in highlighting the issue of climate change and environmental migration in Darfur, both locally and internationally. Darfur as a region, has experienced a complex humanitarian crisis since the early 2000s, involving political, economic, and social factors. However, climate change has increasingly been recognised as a critical contributing factor to the crisis, leading to resource shortages, conflict, and forced migration. According to Del Rio, climate activists are ordinary citizens actively engaged in the climate issue, using non-government mechanisms like social-movement building, political campaigning, and direct action. They take climate change as a severe threat to human and non-human existence, demonstrating the importance of acting (Del Rio 2017). In her view, climate activism has evolved in recent years, focusing on social justice, and addressing the root causes of climate change. While reducing greenhouse gas emissions is crucial, addressing the underlying causes also remains challenging. Fiona Del Rio (2017) argues that climate movement faces a significant challenge in growing and sustaining member involvement,

in which many movements method of public engagement has not addressed. She further argues that creating a climate change movement is challenging for activists, as it often falls short of public priorities considering the high risk it poses to humanity. As she claims, building a robust movement for change, it is crucial to convince people of the urgency of climate change and create a movement that people want to be part of. For example, activists with passion like Greta Thunberg and Fatou Jeng, a youth climate activist in Gambia, focused on education, conservation, and planting trees (ibid).

The COVID-19 pandemic has shifted climate activism towards online activism, emphasising the need for movements to spread their messages beyond their supporters. Suzanne Staggenborg (2016) emphasised that movements traditionally used conventional print and broadcast media, but more recently, they have access to new information and communications technologies like social media tools like Facebook and Twitter. Despite the importance of internet tools, most social movements like climate activists still attempt to influence conventional mass media to reach a large public audience. Media organizations' control over images and government restrictions do hinders their ability to spread their messages through conventional mass media to influence potential supporters and targets of protest (Staggenborg 2016).

Local climate activists in Darfur have been working tirelessly to create awareness about the impact of climate change and the environmental challenges faced by the region. They have been advocating for sustainable resource management, climate-resilient agricultural practices, and improved infrastructure to help communities adapt to the changing climate and calling for increased support for the communities that have been affected by climate-related displacement and migration. By engaging with local communities and decision-makers, these activists have been instrumental in defining the issue of climate change and environmental migration in Darfur. For example, environmental activist Ibrahim Zakarya in Darfur warns of a potential food shortage in the region, especially in the north due to poor rainfall and deforestation. Zakarya claims that the government struggles to address this issue, as many residents use wood for cooking or timber. Although legislation exists to counter deforestation, authorities rarely enforce it, resulting in millions of trees being cut down annually. Citizens in Darfur have launched campaigns to protect the environment, highlighting the negative effects of



deforestation on agriculture. Furthermore, he warns of food shortages, and more conflict if environmental concerns are not addressed in the Darfur region (Ayin Network 2021). Another prominent environmentalist and climate activist is Nisreen Elsaim with vast experience in various environmental topics putting Darfur's climate issue at both national and global levels. She was part of the social movement that brought about democratic change in Sudan, and she is the current Chair of the UN Secretary-General Youth advisory group on Climate Change, which was launched in 2020 to amplify youth voices and engage young people in open dialogue. Elsaim is also the Chair of the Sudan Youth Organization on Climate Change (SYOCC) and General Coordinator for the Youth and Environment – Sudan (YES) platform. In her interview with Friedrich-Ebert-Stiftung Connect (2019), she emphasises that climate change's instability played a major part in conflicts within Sudan, with the UN Security Council acknowledging its role in the Darfur crisis. Elsaim emphasises that the issues of land, food, water security, and health are all tied to the environment and vulnerable to climate change in Darfur.

The influence of media channels on public perceptions of climate-induced migration plays a significant role in public discourse and policy change. Radio Dabanga, a Sudanese media outlet, aims to investigate the impacts of climate change and environmental degradation in Sudan, including Darfur. The station highlights the hidden crisis in Sudan and raises questions about the experiences of Sudanese people with climate change, current efforts, and those responsible for exacerbating the issues. The radio uses its platform for advocacy and awareness creation. Nisreen El Saim, a Sudanese climate activist and junior negotiator at intergovernmental climate change platforms, has been interviewed by Radio Dabanga. El Saim emphasises the importance of compensation, financial support, resilient communities, and adaptability, but acknowledges that adaptation alone is insufficient and calls for emissions reduction. She also advocates for the rights of young people, who are often excluded from environmental decision-making despite being advocates for change (Dabanga 2022).

The collaboration of researchers and NGOs has produced numerous studies and reports helping to define the issue and inform policy debates on the connection between climate change and environmental migration in Darfur (Raleigh and Urdal 2007 & Bromwich 2008). For example, a study published in the journal *Global Environmental Change* in

2015 found that climate change had contributed to the crisis in Darfur by exacerbating existing tensions over land and water resources (SECE 2015). Darfur institutions, such as the Agricultural Research Corporation (ARC) (the most active research institute regarding the intersection between climate change and environment/natural resources), including Nyala and Al Fashir, collaborate to address climate variability and climate change through research and networking. Sudan participated in two global climate change adaptation research initiatives: the AIACC (Assessment of Impacts and adaptations to Climate Change Project) and the CBAA (Community-Based Adaptation in Africa) project. Both were coordinated by the Higher Council for Environmental and Natural Resources (HCENR). It is responsible for coordinating environmental affairs and sustainable management of natural resources in Sudan including the Darfur region (Republic of Sudan, 2013).

## **INTERNATIONAL POLICY-MAKING ACTORS**

The role played by international policy-making actors through their actions, decisions, and collaborations shapes the global response to the challenges posed by climate-induced migration in Darfur. International Organisations like the United Nations (UN), the International Organisation for Migration (IOM), the United Nations High Commissioner for Refugees (UNHCR), the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP), United Nations Framework Convention on Climate Change (UNFCCC), and the Intergovernmental Panel on Climate Change (IPCC) are essential actors in addressing climate-induced migration at the international level. They conduct research, provide technical assistance, and collaborate with the Sudanese government. Non-governmental Organisations (NGOs) like Oxfam, Save the Children, the International Rescue Committee, and the International Committee of the Red Cross often work on the ground, providing humanitarian aid, assistance, and support to affected communities in Darfur. NGOs are instrumental in advocating for policy frameworks that protect and address migration challenges in Darfur.

At the international level, international gatherings like the United Nations Climate Change Conferences (COP) provide platforms for policy-making actors to negotiate and develop global agreements and action plans to combat climate change and its

consequences on migration. Several organisations have been involved in efforts to address climate change and environmental migration in Darfur. One important factor in this regard has been the United Nations Environment Programme (UNEP), which has been working with the Sudanese government to develop a national climate change strategy. UNEP has also researched the impacts of climate change in the region and has worked to promote sustainable land use practices to reduce the vulnerability of communities to environmental degradation. The United Nations Environment Programme (UNEP) in collaboration with the government of Sudan conducted a post-conflict environmental assessment of Sudan. The UNEP assessment aimed to establish a technical foundation for medium-term corrective action in environmental protection and sustainable development (UNEP 2007).

Another important international organisation involved in addressing the issue of climate change and environmental migration in Darfur is the International Organization for Migration (IOM). The IOM has been at the forefront of operational, research, policy, and advocacy efforts, working with the government of Sudan, to improve the resilience of communities in the region to the impacts of climate change and environmental degradation, through a variety of initiatives aimed at promoting sustainable livelihoods, improving natural resource management, and strengthening community-based adaptation measures (IOM 2012). The United Nations Development Programme has been instrumental also in addressing the issue with financial and technical support for the National Adaptation Plan of Action (NAPA). The project was set up to address climate change's impact on food security, agriculture, and water, affecting small farmers and pastoralists. It raised awareness at both community and state levels through conferences, meetings, workshops, and capacity-building training packages. The project also strengthened institutional links between community and government organizations, such as the National Forest Corporation and state-level ministries overseeing natural resources, water, and agriculture (Republic of Sudan 2013: 33-34). Additionally, the United Nations Framework Convention on Climate Change (UNFCCC) has facilitated international cooperation and funding for climate change adaptation and mitigation projects in Sudan, including Darfur (UNFCCC 2012).

The UN and its agencies have also played a crucial role in highlighting the links between climate change, environmental degradation, and migration in Darfur. Thus, the Darfur crisis is a global challenge that requires collective action and cooperation to address the causes and impacts of climate change and environmental degradation in Darfur. The Intergovernmental Panel on Climate Change (IPCC) reports have recognised the potential impacts of climate change on human security, including migration and conflict especially in Darfur (IPCC 2014). The scientific report assessments provided by the IPCC have helped in providing knowledge and mitigation measures in addressing the issue of climate-induced migration.

Internationally, climate activists have also played a significant role in bringing the issue of climate change and environmental migration in Darfur to the global stage. Through advocacy, research, and awareness-raising campaigns, these groups have helped to bring attention to the challenges faced by communities in the region and to push for policy solutions at the national and international levels. High-profile activists, non-governmental organizations (NGOs), and media outlets have highlighted the situation in Darfur, emphasising the links between climate change, resource scarcity, and conflict. These efforts have helped to garner international attention and support for climate adaptation and mitigation measures in the region.

The work of environmental NGOs: Organizations such as the United Nations Environment Programme (UNEP) and the Sudanese Environmental Conservation Society (SECS) have researched the environmental factors contributing to the crisis in Darfur. Their findings have been critical in shaping the discourse on climate change and environmental migration in the region (UNEP 2007). They have actively engaged in raising awareness about the linkages between climate change, environmental degradation, and migration in Darfur. For instance, organizations such as Oxfam, Save the Children, and the International Rescue Committee have implemented projects to enhance community resilience and promote sustainable livelihoods in the region.

Oxfam has heavily been involved in Sudan with the support of its partners, particularly in the three states in the Darfur region—North Darfur, South Darfur, and East Darfur. Oxfam's active role in providing displaced people in Darfur with access to clean water, sanitation, hygiene, security, nutrition, and protection has helped to put the Darfur

humanitarian crisis into a global view due to the impact of climate change on environmental migration. Oxfam offers training to farmers and pastoralist communities in North and South Darfur, distributing certified seeds and tools to over one thousand affected farmers. They also conduct vaccination campaigns for livestock. Oxfam improves nutritional knowledge and hygiene practices for Darfuri women, focusing on protecting children under five and pregnant and nursing mothers. Over 2000 mothers receive equipment to grow gardens and teach and train others (Oxfam (nd)). The International Committee of the Red Cross is another key international actor active in the three Darfur states, providing clean drinking water to 326,407 people in three Darfur states, reducing vulnerability to water-borne diseases and ill health (ICRC 2019).

International climate activists, like Greta Thunberg and Vanessa Nakate, have raised awareness about climate change's inspiring other climate activists in Darfur by taking up actions in bringing global attention and mobilising support for climate action in the region. International media outlets have played a crucial role in highlighting the environmental dimensions of the crisis in Darfur. For example, in 2007, then-UN Secretary-General Ban Ki-moon wrote an op-ed in *The Washington Post*, arguing that the conflict in Darfur was partly attributable to climate change-induced resource scarcity. This assertion helped to frame the issue of environmental migration in Darfur as part of a broader, global climate crisis (Ki-Moon 2007).

By analysing the role of policy-making actors through the lens of framing and social movements, we can understand their efforts to shape the discourse, raise awareness, and influence policy-making processes regarding climate change and environmental mitigation in Darfur. Despite these efforts, however, some challenges continue to hamper progress in addressing the issue of climate change and environmental migration in Darfur. The Government of Sudan has been criticised by the public for failing to adequately address the environmental challenges and humanitarian crisis in Darfur (De Waal 2007 & Abbas 2013). However, new initiatives have been put in place by the Sudanese government to mitigate the impacts of climate change and promote sustainable development, such as the National Adaptation Programme of Action (NAPA). At the international level, scholars have also critiqued the response of the global community to the issue of environmental migration, arguing that there is a lack of coordinated action

and that existing legal frameworks are inadequate to address the issue (Cernea & Schmidt-Solta 2006).

Furthermore, scholars have argued that the framing of the issue of environmental migration by policy-making actors can have important implications for how the issue is addressed. For example, it is argued that framing the issue as a security threat can lead to a militarized response, rather than addressing the root causes of the problem (McAdam 2011).

Addressing the challenges of climate change and environmental migration in Darfur will require a multi-faceted approach that addresses both the underlying drivers of these issues and the immediate needs of affected communities. Some of the key challenges to addressing these issues include limited resources and infrastructure for addressing environmental degradation and climate change adaptation in the region, the ongoing conflict, insecurity, and political instability, which makes it difficult to implement sustainable development programmes, and limited international attention and funding for addressing these issues, particularly in the context of broader political and economic challenges facing the Darfur region in Sudan. In addition, there is a need for greater coordination and collaboration among policy-making actors at both the national and international levels, to ensure that efforts are effectively targeted and implemented.

Overall, while there have been some positive developments in addressing the issue of climate change and environmental migration in Darfur, there is still much work to be done. To combat both climate change and environmental migration by policy-making actors, there is a need to foster global environmental governance in addressing transnational environmental issues through cooperation among states, state organisations, NGOs, and multilateral companies in regulating carbon emissions, fossil fuel, and greenhouse gases to save our planet earth. The enforcement of environmental policies is also vital through mitigation and adaptation activities. Furthermore, there is a need for more collaborative cooperation among climate's natural great powers (the EU, the US, China, Japan, Russia, Brazil, India, and Canada) with solutions by reforming or changing economic systems. Continued efforts by policy-making actors at the national and international levels will be essential to promote sustainable development and ensure the well-being of communities in Darfur.

Analysis of the case of Darfur is portrayed as a multifaceted issue linked with climate change, environmental challenges, conflict, and politics. Based on the theoretical framework and analysis of the relevant works of literature, the Darfur case has identified the interplay between these issues. The nexus between climate change, environmental degradation, and forced migration provides us with empirical evidence linking the environment as the main driving force of migration with a long track history. Despite the positive efforts by policy-making actors in defining and addressing the issue of climate change and environmental migration in Darfur and internationally, the literature outlines a lack of coordination, collaboration, and political will among actors, including the ongoing conflict, insecurity, and political instability as factors hindering the efforts of actors to fully address these issues. The absence of a universally accepted definition of "environmental migration" or "environmental migrant" makes it more difficult to conduct research and gather data, particularly in Darfur and it has ramifications for national, regional, and global legal systems. For instance, the Sudanese government does not have a consistent migration policy and database of Sudanese migrants. Obtaining climate-induced migration database has always been a challenge faced by Sudan and the Darfur case particularly. Sudan relies heavily on international organisations for migration policy development due to insufficient capacities and resources.

## CHAPTER THREE: POLITICAL DIMENSION

The scholarly debate surrounding the correlation between climate change and its impact on environmental migration among scholars, environmentalists, scientists, climate activists, and policymakers has increased the visibility of political recognition of the need to address climate-induced migration and its impact through state-based support. This growing concern has increased the magnitude of global policy awareness and measures taken by states as part of their national policy strategy in responding to climate migration challenges both at the national and regional level. The International Organisation for Migration (2019) argues that policy-measures (global) instruments provide opportunities for Least Developing Countries, including Sudan to make their voices and ideas heard with concrete action (IOM 2019). Today, historical moments have been witnessed in the development of global governance over climate migration with states formally recognising the impact of the environment, particularly climate change on migration.

David Henderson argues in chapter four of the Institute of Economic Affairs on "Governments and Climate Change Issues: Questioning a Consensus" (2008) that climate change issues have a worldwide consensus, with governments committing to addressing anthropogenic global warming as a serious problem. The G8 Summit Declaration in 2007 restated this consensus, stating that global greenhouse emissions must stop rising and substantial emissions reductions must be made. The United Nations Framework Convention on Climate Change (UNFCCC) was ratified in 1992, with its ultimate objective being to stabilise greenhouse gas emissions to prevent dangerous anthropogenic interference with the climate system. As he puts it, since 1992, many governments including the European Union in implementing various measures and programs to reduce greenhouse gas emissions, primarily based on scientific advice from the Intergovernmental Panel on Climate Change. These efforts have been implemented at state, provincial, national levels and international (IEA 2008). National and international



policy instruments on climate migration have been used by states as significant tools in creating awareness of climate-induced migration and promoting adaptation policy measures as yardstick in mitigating climate change and its impact. Policy measures taken by the government in Darfur to address climate change and environmental migration can vary depending on several factors, such as the political context, the level of engagement with other stakeholders, and the resources available for implementation.

This chapter discusses the government's policy measures in Darfur to address climate change and environmental migration, focusing on the government's position and international organisations' goals, achievements, and failures. It also introduces the role of social movements and their advocacy in shaping policy and practice. The latter part of the chapter highlights the constraints for activists and opportunities, as the government's policy measures are crucial for regions most vulnerable to climate change and their populations, such as Darfur.

### **3.1 POLICY MEASURES TAKEN BY THE GOVERNMENT IN DARFUR TO ADDRESS CLIMATE CHANGE AND ENVIRONMENTAL MIGRATION**

Climate change poses significant challenges and risks to Sudan, classified as the least-developed country by the United Nations General Assembly. The country faces challenges such as droughts, food insecurity, water problems, malaria outbreaks, and high poverty levels. To ensure the survival and well-being of Sudanese communities, effective adaptation is increasingly becoming a recurring theme in long-term policy dialogues by the government. The Sudanese government presented Sudan's National Adaptation Programme of Action (NAPA) to the UNFCCC in 2007, underlining the importance of climate resilience and adaptation. Water resources, disaster management, and sustainable management of natural resources were priority issues to highlight the vulnerability of poor Sudanese communities to climate change impacts, leading to the acknowledgment of climate change and its impact on Darfur by the government of Sudan. An important step towards creating a clear framework policy for flexible, decisive action to address climate change risks was the approval of the National Adaptation Plan in 2016 (Osman & Omer 2012 & USAID 2016).

## **CLIMATE ADAPTATION POLICIES**

Climate adaptation policies are key priority to Sudan's national framework policy in addressing climate-induced migration and the protection of the environment. On a regional state-level, the Darfur region is key to Sudan's effective adaptation policy. According to De Ramaix (2010), the Darfur area underwent a rehabilitation effort in 1986 to enhance the availability of rural water supplies, rehabilitate the region's deteriorated natural environment, encourage agricultural production, and assist households in preparation for relocation by the regional government. The Environmental (Protection) Framework Act of 2001 is an important policy document, signed by the President of the Republic of Sudan in 2001. The act is said to be more detailed in protecting natural resources than pollution control and regimes. Environmental impact assessments are required for projects with a negative environmental impact, as stated in Article 18 (UNEP 2007). The act outlines five environmental objectives for sector ministries to achieve. These objectives include protecting the environment, ensuring sustainable development, and sustainable resource use, integrating the link between environment and development, empowering authorities responsible for environmental protection, and activating the role of concerned authorities to prevent relaxation or disposal of duties (The Environment (Protection) Act 2001, Sudan). Developing strategies to enhance community resilience to climate impacts such as droughts, famine, desertification, and extreme weather events is central to Sudan's National Adaptation Plan (2016) (De Ramaix 2010).

The NAP process in Sudan aims to provide a strategic plan and platform for policy dialogue around climate adaptation to mitigate the impacts of climate change-related disasters and reduce vulnerability in communities. Its goals are threefold: building capacity among Sudanese institutions to promote climate change institutional arrangements for effective implementation of adaptation programs and activities, broadening the response to climate change to encompass institutional, economic, planning, and analytical dimensions of climate risk management, and continuing and enhancing efforts to identify and prioritise potential adaptation initiatives at the regional level including Darfur. The design and implementation of the NAP process in Sudan have relied heavily on guidance from the Least Developed Countries Expert Group (LEG),

applying a flexible framework tailored to Sudan's unique circumstances and needs (Al Gezira State NAP Committee, 2013).

Sudan's Higher Council for Environment and Natural Resources (HCENR) established in 2001 under Sudan's Environmental (Protection) Act, is the arm of the Council of Ministers of the government of Sudan responsible for environmental protection and sustainable development of Sudan's natural resources. The HCENR is also UNFCCC's focal point and coordinating body for national environment policies and strategies and it is the sole institution responsible for the development of the National Adaptation Plan (NAP) to address climate change challenges in the near and long term. The HCENR has established adaptation-focused planning institutions in 18 states, including the Darfur region, with a focal point and inter-agency technical team of experts from government, research institutions, academia, and civil society organizations. These units are strengthened through targeted training sessions, learning-by-doing programs, and knowledge exchange networks (Republic of Sudan 2016: 6). The HCENR established a climate change network in 2011 to focus on adaptation planning, capacity building, awareness-raising among government institutions, and media outreach. The HCENR was supported by the UNEP to implement a major climate change project aimed at preparing the country's National Adaptation Plan. This includes First National Communication (2003), Second National Communication (2013), and the National Adaptation Programme of Action (2007) by the Ministry of Environment and Physical Development (ibid USAID 2016).

In a nutshell, the adoption of these policy frameworks has put in place strategies to address climate change and its impacts on the environment and communities in Darfur. For example, the government's policies aim to promote sustainable development, such as water management and agricultural practices that are more resilient to climate change and drought. Possible policy measures include recommendations for agricultural policy reform, land tenure, developing more sustainable water management institutions, drought, and natural resource management, and strengthening environmental governance both at national, regional, and community-based levels.

### **3.2 THE POSITION OF THE GOVERNMENT AND INTERNATIONAL ORGANISATIONS: GOALS, ACHIEVEMENTS, AND FAILURES**

Climate change's severity and physical impacts, leading to climate-induced migration, are largely determined by policymakers' decisions on economics, politics, the natural and built environment, public services, and other issues. These decisions shape populations' ability to manage risks related to climate change, influencing exposure to hazards, access to mitigation strategies, vulnerabilities, and the ability to move safely and with dignity. Global governance institutions, such as the United Nations Framework Convention on Climate Change (UNFCCC), the International Organization for Migration (IOM), the United Nations High Commissioner for Refugees (UNHCR), the United Nations Environmental Programme (UNEP) and the Intergovernmental Panel on Climate Change (IPCC) have all strived to address climate migration's causes and consequences. These institutions have committed resources, and personnel, and convened stakeholders to work on the issue, developing frameworks, guidance, and recommendations. However, the centrality of stance for policymaking remains with nation-states, as national governments are the central actors in climate migration policy (Blake et al. 2021).

#### **3.2.1. THE POSITION OF THE GOVERNMENT**

The government of Sudan, including its regional authorities in Darfur, plays a crucial role through its policies in addressing climate change and environmental migration in Darfur. From the 1980s to 2016, Darfur's state government faced challenges in mitigating climate change and environmental migration. Addressing the issue of climate-induced migration is a national priority and a regional one for that matter in Darfur. The central government has initiated several measures to address this phenomenon. One important initiative has been the establishment of Sudan's Higher Council for Environment and Natural Resources (HCENR), which is responsible for developing policies and strategies to address climate change and its impacts across all state levels in Sudan. This is evident in its policies and strategies with its National Communication (2003), Adaptation Programme of Action (2007), Second National Communication (2013), and the National Adaptation Plan (2016). The government's position and actions are significant in addressing the complex interplay between climate change, environmental degradation,

and forced migration in Darfur. Effective governance and collaboration with various stakeholders are essential for mitigating the adverse effects of these challenges and ensuring the well-being of the Darfuris population in Sudan.

## **GOALS**

The government aimed to address environmental degradation, ensure resource sustainability, adapt to climate-related risks, and promote sustainable land and water management. It also aimed to enhance community resilience through improved infrastructure, water management, and agricultural practices. Natural resource conservation was prioritized to protect forests, water management, and ecosystems, maintaining biodiversity and mitigating environmental degradation (Republic of Sudan 2016).

## **ACHIEVEMENTS**

One major achievement by the government is the adaptation of Sudan's National Adaptation Plan in 2016 as a milestone policy document for climate adaptation to mitigate the impacts of climate change-related disasters and reduce the vulnerability of communities in Sudan. Rural development initiatives were also initiated in introducing sustainable agricultural practices and water management projects to improve food security and reduce vulnerability to climate shocks. Awareness campaigns through educational programmes and in partnership with global governance institutions, NGOs, environmentalists, and climate activists were conducted to educate communities about climate change impacts and adaptation strategies. Some efforts were made since 2007 to establish early warning systems for climate-related disasters, helping communities prepare for extreme weather events in Darfur (ibid).

## **FAILURES OF THE GOVERNMENT**

Analysing the failures of the government is central to the views of other works and observations from reports and criticisms by other scholars. Croshaw (2008) argues that the government in Darfur faces challenges in effective programme management and policymaking due to a lack of good baseline environmental data. In her view, big projects

like oil development and mechanized farming are prioritized over sustainable development. Legislative overlaps and low enforcement capacity weaken environmental governance, posing long-term problems in the region. The region's instability also hinders the implementation of climate change adaptation programs (Croshaw 2008: 56). Others have criticised the government's response to environmental migration, arguing that it has been inadequate and has not considered the root causes of the problem.

Darfur's state government faces challenges in implementing large-scale climate adaptation and mitigation projects due to limited resources, insufficient financial and technical resources, and insufficient coordination between departments and agencies. Political instability and conflicts also divert attention from long-term environmental and climate change goals. Despite progress in promoting sustainable practices and raising awareness, challenges like resource constraints, lack of coordination, and ongoing conflicts hinder the government's ability to effectively mitigate climate change and manage environmental migration. Moreover, the internal political instability in the region needs effective peacebuilding and conflict resolution to resolve its internal crisis and expand the protection of Darfuri forced migrants (cross-border) with prominent destination countries, where these migrants are at risk of exploitation, human trafficking, and slave-labour.

### **3.2.2 INTERNATIONAL ORGANISATIONS (IOM AND UNEP)**

International organisations like the International Organisation for Migration and the United Nations Environment Programme are central international collaborators with the government of Sudan and Darfur regional authorities, jointly addressing climate change and environmental migration. IOM, founded in 1951, is a leading intergovernmental organization focusing on humane and orderly migration for migrants and society. It collaborates with international partners to address operational challenges, advance understanding of issues of migration, promote social and economic development, and uphold migrants' well-being and human rights.

The United Nations Environment Programme (UNEP) was founded in 1972 to monitor the environment, inform policy, and coordinate responses to global environmental challenges. Since its creation, UNEP has worked closely with its 193 Member States to

address pressing environmental issues. Their focus is on low-carbon and resource-efficient economies, strengthening environmental governance, safeguarding ecosystems, and providing evidence-based data for policy decisions. UNEP also provides support its 193 Member States in achieving the Sustainable Development Goals and living in harmony with nature through science, coordination, and advocacy (UNEP 2020). Both organisations collaborate to address the complex interplay between climate change, environmental degradation, and forced migration in Darfur. IOM provides support for humanitarian assistance and migration management, while UNEP focuses on environmental sustainability and conversation efforts.

## **GOALS**

Their goal is to protect vulnerable populations and promote environmental resilience in Darfur. IOM assists in managing migration, including environmentally induced migration, provides support for humanitarian assistance to IDPs, provides support to affected vulnerable communities, and upholds the well-being and human rights of Darfuri migrants. On the other hand, UNEP focuses on environmental protection and sustainable development (ibid).

## **ACHIEVEMENTS**

IOM and UNEP have played a crucial role in Darfur. Their achievements are evident in conducting capacity-building programmes to help vulnerable communities adapt to environmental changes and reduce migration risks. They are also instrumental in data collection and analysis of climate-induced migration, aiding policy formulation and building local capacity for agroforestry, providing technical and material support for farmers trained in sustainable agriculture techniques like water harvesting, composting, agro-forestry, and intercropping. For example, encouraging villages in tree nurseries, producing and planting thousands of seedlings to restore damaged land and provide a sustainable wood supply in Darfur. IOM implements Community Environmental Action Plans (CEAPs) in South Darfur villages, empowering communities to manage natural resources sustainably and address environmental problems independently (Rushton 2011). Community engagement in IOM projects builds resilience and reduces migration

impacts. For the UNEP, they provide scientific expertise and policy support to Sudan, particularly the Darfur region for conducting research and assessment on the environmental impacts of climate change, including migration effects and conflict. In its Post-Environmental Assessment Report of Sudan (2007), the UNEP offers unbiased information on pressing environmental issues, emphasising threats to human health, way of life, and ecosystem services. Set priorities for the management of sustainable resources and facilitate national environmental policy development, strengthen environmental governance capacity, raise awareness, and secure financial support for environmental projects. Integrate environmental issues into recovery and reconstruction processes (UNEP 2007).

## **FAILURES**

The International Organization for Migration (IOM) and the United Nations Environment Programme (UNEP) faced challenges in resource constraints and complexity in addressing environmental migration, which limits their scale and impact. The global nature of climate change and forced migration makes it challenging for any single organisation to fully address these phenomena, particularly the Darfur case. Political instability and conflict in Darfur may have hampered their ability to carry out their missions effectively. Additionally, critics argue that lack of adequate community engagement, as effective solutions to climate-induced migration often require the participation and buy-in of affected vulnerable communities.

### **3.3 THE ROLE OF SOCIAL MOVEMENTS**

In this section, I will highlight the concept behind social movements and their formation to better understand their functions. The debate in social sciences revolves around the origin and sustainability of social movements, examining their origins and persistence over time (Horn 2013). The term social movement is a contested concept within sociology and other disciplines and has gained prominence in recent years. According to Graeme Chesters and Ian Welsh (2001), the terms "old social movement" and "new social movement" are valuable in understanding the contemporary milieu.



Graeme Chesters and Ian Welsh argues that old social movements originated in the 19th century's social, economic, and political dynamics, while new movements emerged in the latter part of the 20th century. Both movements have internationalist or global engagement, and use of networks for organisational purposes. Both movements emphasise the importance of understanding and analysing the contemporary milieu. The new social movement applies to feminism, the environment and animal rights. In the late 1960s and 1970s, social movements intensified debates on their roles in achieving change. Examples include class, second wave feminism, ecological, and environmental movements. Green movements shifted to media coverage, often using direct action, to raise awareness of environmental concerns. This led to the creation of Friends of the Earth and Greenpeace, an environmental social movement organisation that quickly spread across the globe (Chesters & Welsh 2001: 1-90).

The fight against climate change and environmental migration requires the creation of awareness for collective action. Social movements play a vital role in this process by mobilising people, sharing knowledge, and seeking change. This section examines the means through which social movements create awareness about climate change and environmental migration and evaluates the impact of their advocacy on the policy and practice of the various states in the continent of Africa and globally.

Social movements such as Fridays for Future and Extinction Rebellion, Women's Strike for Peace, and racist environmentalist movements such as the People of Color Environmental Leadership Summit (an environmental justice movement ) are critical in educating the public about the science and consequences of climate change (Swerdlow 1993; Dowie 1995: 151). They use social media, protests, and grassroots campaigns to disseminate information about the urgency of the impending environmental crises, and the need to put in measures to mitigate its impacts and reverse the uncomplimentary trajectory that our environment is headed. To their credit still, it would be noted quite evidently that social movements have an inimitable and remarkable ability to both mobilise and unite vast numbers of people and inspire collective, impactful efforts in pursuing an agenda. Such an undeniable trait of social movement has over the years been openly available to several environmentalist social movements. A prime example of these is the numerous global climate strikes, which have garnered widespread attention and prompted

governments and corporations to act against climate change (Yeni Safak 2022). These demonstrations wield significant influence and call for urgent measures to address these pressing environmental issues. Furthermore, social media stories, and news items concerning issues of climate change and environmental migration are shaped by social movements. Through diverse media platforms, they emphasise the human and social aspects of issues pertaining to the climate and the environment, and in many instances, highlight the stories of affected communities. This approach makes it possible for the masses of the people to resonate more strongly with the issues being raised by environmental movements, thereby further raising public awareness.

### **IMPACT ON POLICY AND PRACTICE**

Research has shown that social movements have had a significant impact on climate policy in different countries (Rootes & Nulman 2014). For instance, the Green New Deal in the United States, United Nations Conference of Parties (COP) and stricter emissions targets in Europe were influenced by the pressure exerted by climate activists. These policy adjustments largely reflect the growing awareness brought about by these movements in their quest to advance climate protection causes. Apart from influencing the policy direction of governments, they have equally influenced corporate organisation as regards their operations and need to comply with environment-friendly operations, demanding that businesses adopt more sustainable practices and disclose their environmental impact. They raise awareness among consumers, thereby, the consumers exacting pressure on investors to contribute and undertake a shift in corporate engagement with climate change. Their influence could be seen in international climate accords such as the Paris Agreement which is “a legally binding international treaty on climate change. “It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. It entered into force on 4 November 2016” (UNFCCC 2023). Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

The agreement sets targets for reducing greenhouse gas emissions and encourages countries to enhance their climate commitments. On the local front, initiatives have been directed and more impactful mechanisms, forcing local government policies and

practices, leading to sustainable urban planning, renewable energy projects, and climate resilience measures in various cities around the world. Social behavioural changes have equally been promoted by social movements. Today, individual behavioural change by encouraging practices such as reducing carbon footprints, conserving resources, and adopting sustainable lifestyles could be noted in several communities (Pinho & Gomes 2023).

## **PRESSURING GOVERNMENTS**

Movements such as Fridays for Future and Extinction Rebellion have effectively captured public attention through large-scale protests, strikes, and online campaigns (Friberg 2022). By emphasising the scientific consensus on climate change and its impacts, they have successfully shaped public opinion, generated widespread support, and equally created pressure on governments to act. Moreover, they have been instrumental in advocating for specific policy changes to address climate change and environmental migration. Carbon emissions reduction targets, renewable energy adoption, and adaptation measures for vulnerable communities. By forming global networks and alliances, they have connected activists, experts, and organisations worldwide, enabling a coordinated effort to pressure governments at international levels (IRENA 2019). Despite challenges like co-optation by political interests, fragmentation, and burnout, social movements remain steadfast in monitoring progress, exposing policy failures, and demanding transparency in government actions related to climate change and environmental migration. These widespread advocacy efforts have led to policy changes, influenced international agreements, and increased government accountability. Although challenges persist in overcoming government resistance and sustaining momentum for climate action, social movements continue to be a driving force in the fight against climate change.

## **SHAPING POLICY**

Undoubtedly, and as noted above, social movements have a profound impact in raising awareness about climate change and environmental migration. It is evidently clear with current news affairs and through UN conferences on climate change, we learned about

their various forms of engagement, such as protests, rallies, social media campaigns, and grassroots organising, have effectively educated the public and exerted pressure on governments and international organisations to take concrete actions, thereby contributing sharply to shaping the government and other organisations' policies as regards environmental and climate protection initiatives. Aside from bringing out deficiencies in terms of environmental-related policies, social environmental movements have also proposed alternative solutions to address these critical issues of criminal changes. Due to these initiatives, there have been policy shifts in many countries, landmark agreements like the Paris Agreement cited above, and inspired local-level policies and practices. Climate activists have also successfully pressured corporations to adopt sustainable practices and reduce their carbon footprint. These major gains are registered, despite persistent political resistance and the complexity of addressing long-term climate issues, social movements have consistently risen to the challenge. Although achieving immediate policy changes can be challenging, these movements continue to grapple with balancing short-term gains with the need for long-term systemic change. Even when policies are enacted, their effective implementation and enforcement can be problematic, thus, it is not unusual for policies to be enacted due to the advocacy of social movements, yet they would be unimplemented by the relevant authority charged with the responsibility of implementing them.

### **3.4 CONSTRAINTS OF ACTIVISTS AND OPPORTUNITIES**

In analysing the constraints and opportunities of activists, I will briefly highlight the general view and nature of activists and their specific functions to better understand their constraints and the opportunities that lie ahead for activism. The general notion about activists goes beyond advocacy. Activists are individuals or groups who work tirelessly to address societal problems and promote positive change through advocacy for social, political, or environmental causes (Merriam Webster). Activist movements often start at the grassroots level, with individuals and local communities working together to address specific issues. They use tactics like community mobilisation, protests, and awareness campaigns to create change. Activism can take various forms, from grassroots community

organising to high-profile global movements. Driven by beliefs and values, they aim to raise awareness, influence public opinion, and push for policy changes. Some movements gain international attention and support, such as the environmental movement with figures like Greta Thunberg leading the fight against climate change, the #Me Too movement, and #Black Lives Matters. Today, activists do engage in advocacy efforts in lobbying for legislative changes, organising petitions, and using legal channels. Many movements, like the civil rights movement, embrace nonviolent resistance to effect change, gaining public sympathy and support. In the digital age, online platforms and social media have become powerful tools for activists, with hashtags, viral campaigns, and online petitions mobilising large numbers.

Elke Schüßler, Head of the Institute of Organization Science at Johannes Kepler University Linz in Austria, emphasises that the climate crisis and the "too little, too late" approach require more than just policymakers globally. Schüßler's statement draws attention with the growing recognition that addressing the climate crisis needs urgent actions and commitments, and this urgency to act is also underscored by many experts and researchers in the field of climate and activism. For example, the UN Secretary-General has warned the General Assembly of the need for a 'Our Common Agenda' event, stating that the current global crisis response is too late (UN 2021). The UNEP's (2022) Adaptation Gap Report also highlights the urgent need for increased efforts to mitigate the impacts of climate change (UNEP 2022). Insider activism, developed in Skoglund and Böhm book, "Climate Activism: How Communities Take Renewable Energy Actions Across Business and Society" suggests that everyone can become climate activists within our social systems, as citizens, employees, prosumers, administrators, or part of a social movement. In this section, I will highlight some of the constraints and opportunities of climate activists, as they are connected by shared imaginations and deeply held concerns for climate change and the zeal to take actions (Skoglund & Böhm 2022).

Limited resources also serve as a challenge to climate activists' movement, in terms of funds, human resources, and technical expertise. The lack of adequate resource hinders their ability to organised effective campaigns and outreach to achieve their objectives. They also often face legal restrictions like protest laws and freedom of speech, which hinder their activities and movement. In executing their activities, they face strong

opposition from individuals, organisations, and governments who oppose their goals and views, potentially leading to harassment, threats, or violence. This poses a significant safety concern and sometimes deters individuals from engaging in activism. Climate activists, for example, contend with powerful fossil fuel industries and politicians who resist regulations. Since climate change is a global issue, inadequate global coordination among climate activists in their efforts across borders and cultures serves as a challenge because different countries have varying plans of commitment to addressing climate change, making global cooperation difficult.

Climate activists have numerous opportunities, including accountability, advocacy, and collaboration. Accountability helps hold individuals, governments, and corporations accountable for their actions, such as human rights violations and environmental harm. Through advocacy they raise awareness and promote social change, while collaboration between civil society organisations, lawyers, and community groups can leverage different strengths and expertise for greater impact. Climate activists also provide opportunities for legal cases to highlight systemic issues and push for policy change. This has increased international publicity in environmental awareness among people. For example, more young people like me are aware of the impacts of human activities on the environment. Additionally, this has also championed the enlightenment of the population on the devastating effects of environmental degradation.

Overall, despite the constraints faced by climate activists, they have a wide range of opportunities to contribute to the fight against climate change and its impact from grassroots community efforts to international advocacy and policy change.

## CONCLUSION

Climate change and environmental migration are interconnected global challenges that is wrecking countries, families, and homes. These issues require urgent attention and collective action. Rising temperatures, drought, extreme weather events, and environmental degradation have significant implications for human populations, leading to forced migration and displacement. Environmental migration on the other hand is a complex issue, with millions of individuals and communities at risk of displacement. Climate change's impact on natural resources, such as water scarcity, land degradation, and loss of biodiversity, disproportionately affects vulnerable populations, such as those in low-lying coastal areas, arid and semi-arid regions, and small island states (Cattaneo et al. 2019; Jones & O'Neill 2016).

The consequences of environmental migration are far-reaching, including limited access to basic services, loss of livelihoods, social dislocation, increased vulnerability to poverty and conflict, and the burden of hosting and integrating displaced communities on host countries and communities. Addressing climate change and environmental migration requires a comprehensive and multi-dimensional approach, including efforts to reduce greenhouse gas emissions, mitigate climate change impacts, and develop policies and frameworks to protect the rights and well-being of environmental migrants.

International cooperation and collaboration are crucial in tackling these issues. Governments, international organisations, civil society, and the private sector must work together to develop effective policies, mobilise resources, and build capacity to address environmental migration challenges. Raising awareness and fostering responsibility among individuals and communities is vital for promoting sustainable behaviours and climate action. Education and advocacy play a crucial role in promoting understanding, empathy, and collective action to mitigate climate change and support environmental migrants.

The case of Darfur, Sudan, is no new such thing to this phenomenon with millions of people being displaced already as refugees, IDPs, and migrants. The Darfur region for decades has experienced the devastating nature of climatic conditions with environmental degradation, and desertification coupled with conflict. Throughout this study, the case of Darfur, Sudan, demonstrates the intricate relationship between climate change and environmental migration, highlighting the vulnerability and challenges faced by the Darfuris. The region has been ravaged by drought and famine, leading to a significant increase in migration. Darfuri environmental migrants seeking protection status often face numerous challenges such as lack of resources, limited access to basic services, exploitation, and trafficking. Bromwich argued that Darfur's vulnerability to livelihoods is a common issue in the Sahel region, characterised by environmental degradation, population growth, poor governance, conflict, climate change, under-investment, dependency on natural resources, and lack of diversification opportunities, with increasing drought frequency (Bromwich 2008).

The research findings identified in the theoretical framework cities that reoccurring droughts, famine, extreme weather events, and other disasters, impacts community livelihoods and contribute to more poverty and underdevelopment in the Darfur region, mixed with complex interplay root factors such as climate change, environmental degradation, desertification, conflict, and resource scarcity renders Darfuris vulnerable to these effects as forced migrants. Due to the nature of Darfur's long track history of displacement and migration, climate change, environmental degradation, desertification, conflict, and resource scarcity has made its faced known in its history and politics in Darfur.

The research findings also outlined that policy-making actors were key in defining climate change and environmental migration. Through research, data gathering, and advocacy work, they have helped to advance our knowledge of how conflict, environmental degradation, climate change and forced migration are intertwined in the Darfur case. In defining these issues, policy-making actors were instrumental in formulating and implementing strategies to address these challenges, including climate adaptation measures, environmental protection efforts, and conflict prevention strategies.



For instance, the government of Sudan in collaboration with authorities in Darfur implemented adaptation strategies, such as water resource management, land restoration programmes, and early warning systems, in response to climate change and environmental migration through the National Adaptation Plan (2016). The government has also engaged in regional and global initiatives to address climate change. As they push for global collaboration and financing to lessen the effects of climate change, they have also offered assistance and protection to the population of Darfur impacted by environmental migration with support from UNFCCC, UNICEF, IOM, UNEP, UNDP, FAO, UNHCR, etc. However, difficulties still exist due to the complex nature of the problems at hand and political instability and resource limitations in the region. Based on my resource findings, Sudan and the Darfur authorities are still struggling with failed governing bodies that have not lived up to the expectations to address the complex interplay in the Darfur region including the rights of environmental migrants. For social movements, they have played a crucial role in raising awareness and advocating for climate justice. They have highlighted the linkages between climate change, environmental migration, environmental degradation, desertification, and human displacement, urging governments and international organisations to act.

Climate activists and social movements in their work of activism face constraints such as limited resources, political resistance, and the complex nature of the issue. Greater collaboration and coordination among stakeholders are needed to develop comprehensive and sustainable solutions to these issues. Affected Darfur communities, especially internally displaced persons (IDPs) and refugees, have rights and needs, and these calls for responsive actions by policy-making actors to their needs and rights with international framework tools that can accommodate the well-being and protection of environmental migrants. They have a crucial role in reducing the negative consequences of environmental problems, climate change, environmental migration, and conflict, thereby enhancing the resilience and well-being of vulnerable communities.

Furthermore, there is need for more empirical evaluation case studies research to date to bridge the existing wide gaps in data management of information available to policy-making actors regarding climate change and environmental migration across all levels (local, regional, national, and international). These gaps still exist in content, nature,

methodology, approach, terminology, and frameworks for appropriate migration management strategies and climatic adaptation. The case of Darfur requires further study through an interdisciplinary approach for empirical analysis to capture the impacts of livelihoods in Darfur for an effective policy framework in addressing climate change and its impact on environmental migration by policy-making actors.

International organisations and environmental experts need to engage more with world leaders on proactive policy innovations to mitigate greenhouse gas emissions through decoupling to combat climate change and its impact. Since the Sudanese government does not have a consistent migration policy and database of Darfuri migrants, these organisations can support the government and the authorities in Darfur by training personnel as experts to track and keep records of statistical data on migration by addressing the complex nature of migration management and adapting to changes in climatic temperature. The IOM asserted that due to lack of an internationally agreed terminology for “environmental migration or “environmental migrant”, complicates research and data collection, and has implications for national, regional, and international legal frameworks. This strong statement is also supported by Oli Brown (2007) in his article “Climate change and forced migration: Observations, projections and implications”, Brown contends that because there is no organisation that gathers statistics or offers fundamental services, they frequently slip through the cracks in asylum law, environmental migrants are essentially invisible in the international system because due to no proper definition of them under international law (Brown 2007). As a result, this makes it even more difficult because there is currently no specific framework at the international level that specifically addresses the protection and aid requirements of international migrants affected by natural disasters and environmental degradation, even though international migration law deals with the human rights of all migrants. As IOM puts it, to ensure effective protection and assistance, national capacities are required to create an appropriate legislative basis and ensure the implementation of such laws. They further argue that existing legislation and policies need to be reviewed to account for cases of individuals crossing borders due to environmental factors, such as granting Temporary Protection Status. In the case of state level, they may also need to consider revisiting legal and policy arrangements to protect and assist internally displaced persons

who had to move due to natural disasters and environmental degradation. According to IOM, policy coherence on environmental migration is critical, as governments must have the capacities and mechanisms to draw on all relevant areas of expertise and competency in designing their policies (IOM 2011). This calls for existing policy tools to consider environmental migration, with the willingness to tackle the issue by the international community with protection status.

Finally, Darfur serves as a stark reminder of the urgent need to address climate change and its impacts on vulnerable populations. Governments, international organizations, and civil society must work together to develop comprehensive strategies that protect, and support communities affected by climate change-induced migration while addressing the root causes of environmental degradation and desertification.

## APPENDICES

### PRIORITY ADAPTATION MEASURES FOR DARFUR STATES BY NAPA 2016 (REPUBLIC OF SUDAN).

<p>- <b>Goal :</b>To achieve food security to human beings and livestock in the face of a changing climate</p>	
<p><b>(A) Development and Improvement of the Agricultural Production, farmers and pastoralists livelihoods</b></p> <ol style="list-style-type: none"> <li>1. Water harvesting.</li> <li>2. Technology transfer and extension.</li> <li>3. Diversification of incomes.</li> <li>4. Management of the rangelands and grazing in a sustainable manner.</li> <li>5. Rehabilitation of the natural rangelands and management of animal routes.</li> <li>6. Environmental and forest conservation.</li> <li>7. Soil conservation measures and best practices.</li> <li>8. Wildlife conservation.</li> <li>9. Alternative renewable energies to reduce dependency on biomass.</li> <li>10. Improving animal productivity and animal breeds.</li> <li>11. Upgrading and improving veterinary services.</li> </ol>	
<p><b>(B) Water Sector</b> Programme: Integrated Management of the Water Resources</p> <ol style="list-style-type: none"> <li>1. Management and development of the water resources to meet the current and future needs.</li> <li>2. Achieving water security.</li> <li>3. Water harvesting (dams, hafirs, terraces, etc.).</li> </ol>	<p><b>(C) Health Sector</b> - Programme: Reducing Climate Induced Diseases and Mortalities</p> <ol style="list-style-type: none"> <li>1. Combating vectors and insects that borne diseases.</li> <li>2. Improving primary health care services,</li> <li>3. Providing services for a healthy environment.</li> <li>4. Improving the general health services and build awareness.</li> </ol>
<p><b>(D) Capacity Building</b> Programme: Increasing Production and Productivity through the technical cadres and the CBOs</p> <ol style="list-style-type: none"> <li>1. Building the capacities of all the relevant stakeholders in adaptation to climate change.</li> <li>2. Raising awareness about building resilience in the agricultural, water and health sectors.</li> </ol>	<p><b>(E) Scientific Research</b> - Development and dissemination of technologies for adaptation to the impacts of climate change in the agricultural, water and health sectors.</p>
<p><b>Policies and measures:</b></p> <ul style="list-style-type: none"> <li>• Establishment of databases.</li> <li>• Provision of political support at the state level.</li> <li>• Mainstreaming of the adaptation programmes in the strategic plans of the states.</li> <li>• Activation and enactment of legislations that ensure the conservation of natural resources.</li> <li>• Transparency, responsibility and accountability.</li> <li>• Establishment of the CBOs and ensuring their active participation in all the adaptation programmes.</li> <li>• Government commitment and provision of support to local component to encourage the external funding by donors.</li> <li>• Undertaking concerted efforts to achieve effective horizontal and vertical coordination between all the stakeholders (the Climate Change Unit and the line ministries, the states and the relevant state organizations, the local leaders, the CBOs, etc.</li> <li>• Commitment to training and capacity building and awareness raising among relevant actors at all levels.</li> </ul>	

## DEFINITION OF KEY TERMS

(Climate Change and Migration: Legal and policy challenges and responses to environmentally induced migration by Kraler et al. 2020)

<b>CLIMATE CHANGE</b>	"[T]he change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods." <sup>1</sup>
<b>CLIMATE (ENVIRONMENTAL) REFUGEE</b>	"The term 'climate/environmental refugee' is used to refer to a category of environmental migrants whose movement is clearly of a forced nature." <sup>2</sup> More specifically, the term "climate refugee" is used to refer to persons who are forced to leave because of impacts of climate change. Individuals and communities threatened by sea-level rise are a classic case. Generally, the terminology is disputed and the notion of forced displacement usually limited to disasters.
<b>DISASTER</b>	"A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources." <sup>3</sup>
<b>DISASTER-RELATED DISPLACEMENT</b>	Forced displacement related to a disaster, whether related to environmental or other causes.
<b>ENVIRONMENTAL CHANGE</b>	"Changes in the physical and biogeochemical (chemical, geological, and biological) environment, over a large scale, either caused naturally or influenced by human activities," thus including both changes attributable to climate change and changes that are not. <sup>4</sup>
<b>ENVIRONMENTAL DISPLACEMENT (SYNONYM: ENVIRONMENTALLY INDUCED DISPLACEMENT)</b>	Forced displacement caused by environmental factors, for example a flood or drought.
<b>ENVIRONMENTAL MIGRATION (SYNONYM: ENVIRONMENTALLY INDUCED MIGRATION)</b>	Migration driven in significant part by environmental factors, but not forced.

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<sup>1</sup> Foresight (2011), p.233.

<sup>2</sup> IOM (2019), p.32.

<sup>3</sup> Ionescu et al. (2016), p.124.

<sup>4</sup> Foresight (2011), p.233.

<b>ENVIRONMENTAL MIGRATION AND DISPLACEMENT</b>	The term “environmental migration and displacement” is an umbrella term to capture all movements where environmental factors have played a role.
<b>FORCED DISPLACEMENT (SYNONYM: DISPLACEMENT)</b>	The movement of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters. <sup>5</sup>
<b>INTERNATIONAL PROTECTION</b>	<p>“In the global context, actions by the international community on the basis of international law, aimed at protecting the fundamental rights of a specific category of persons outside their countries of origin who lack the national protection of their own countries.</p> <p>In the EU context, protection that encompasses refugee status and subsidiary protection status.”<sup>6</sup></p>
<b>MIGRATION</b>	“The movement of persons away from their place of usual residence, either across an international border or within a State.” <sup>7</sup> International standard definitions distinguish between short-term migration (between 3 and 12 months) and long-term migration (at least 12 months). Short term movements below 3 months of stay are generally not considered migration.
<b>MIGRATION DRIVERS</b>	Migration drivers refer to factors shaping migration decisions, including migration decisions in the context of forced displacement.
<b>MOBILITY</b>	(Geographical) ‘mobility’ is an overarching term to denote the relocation from one place to another. More specifically, this study refers to mobility when movements cannot be characterised as migration, notably in the case of short-term movements.
<b>SLOW ONSET EVENT</b>	Gradual environmental changes such as drought, sea-level rise or soil erosion whose impact builds up over time.
<b>SUDDEN (RAPID) ONSET EVENT</b>	Events such as extreme weather events like flooding or storms that strike suddenly and have an immediate impact.

**Source:** IOM (2011). CLIMATE CHANGE, ENVIRONMENTAL DEGRADATION AND MIGRATION. BACKGROUND PAPER.

***Climate change***

A change in the climate that persists for decades or longer arising from either natural causes or human activity (Source: Intergovernmental Panel on Climate Change).

***Climate Change Adaptation***

The adjustment to actual or expected climatic stimuli and their effects, which moderates harm or exploits beneficial opportunities (Adapted from UNISDR Terminology on Disaster Risk Reduction 2009).

***Disaster Risk Reduction***

All efforts that can contribute to reducing risk through analyzing and managing the causal factors of disasters; through reducing exposure to hazards; through lessening vulnerability of people and livelihoods; through managing land and the environment; and through improving preparedness for adverse events (Adapted from UNISDR Terminology on Disaster Risk Reduction 2009).

***Environmental degradation***

The reduction of the capacity of the environment to meet social and ecological objectives and needs (Source: UNISDR Terminology on Disaster Risk Reduction 2009).

***Environmental migrant***

Environmental migrants are persons or groups of persons who, predominantly for reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their homes or choose to do so, either temporarily or permanently, and who move either within their country or abroad (Source: IOM World Migration Report 2008).

***Internally Displaced Person***

Persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalised violence, violations of human rights or *natural or human-made disasters*, and who have not crossed an internationally recognised State border (Source: Guiding Principles on Internal Displacement, emphasis added).

***Natural disaster***

A serious disruption of the functioning of a community or society due to a natural process or phenomenon which involves widespread human, material, economic or environmental losses and impacts and which exceeds the ability of the affected community or society to cope using its own resources (Adapted from UNISDR Terminology on Disaster Risk Reduction 2009).

***Resilience***

The ability of a system, community or society to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner (Adapted from UNISDR Terminology on Disaster Risk Reduction 2009).

***Sustainable development***

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Source: Brundtland Commission 1987).

***Vulnerability***

The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard (Source: UNISDR Terminology on Disaster Risk Reduction 2009).

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