

Gender and Climate Change: migration as an act of agency among women from the northern regions of Ghana.

By
Mavis Durowaa Mainu

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Approved: Dr. Cathy Conrad
Supervisor

Approved: Dr. Tatjana Takseva
Second reader

Approved: Dr. Min-Jung Kwak
External reader

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Abstract

The northern regions of Ghana are one of the most vulnerable regions to climate impacts due to its agriculture dependent economy, high rates of poverty, many development challenges and how the regions are located geographically. Climate change is happening in the northern regions of Ghana and is manifested mainly through drought, irregular rainfall and rising temperature that is affecting agricultural productivity. But climate impacts are not distributed equally, women and girls are disproportionately affected as a result of the unequal possession of resources in the hands of men. Climate impacts exacerbate poverty and limit economic opportunities for women and girls. Coupled with social and political challenges such as forced marriages, early betrothal and low levels of opportunities for household and public leadership; women and girls from the north are deciding by themselves to move to the south, in search for new economic opportunities, liberties, freedom and independence.

August 12, 2022

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Abbreviations

EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization
FPE	Feminist Political Ecology
GDP	Gross Domestic Product
GSS	Ghana Statistical Service
IPCC	Intergovernmental Panel on Climate Change
LGBTQ	lesbian gay bisexual transgender queer
MESTI	Ministry of Science, Environment, Technology and Innovation
NAP	National Adaptation Plan
NCCP	National Climate Change Policy
UER	Upper East Region
UNFCCC	United Nations Framework Convention on Climate Change
UWR	Upper West Region
WHO	World Health Organisation

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Chapter 1: Introduction and problem statement

Climate change is threatening livelihoods of people all over the world. The world is currently experiencing an unprecedented record number of disasters including bush fires, floods, heavy rainfall, and drought, etc. The impact of these disruptions is intensified by gender inequality and geography, which shapes the level of vulnerability (the propensity to be adversely affected) one is exposed to, and resilience (the ability to cope with disturbances, learn, anticipate, and transform) one can possess. Feminists argue that vulnerability is created through "...patterns of practices, processes and power relations that render some groups or persons more disadvantaged than others" (Jerneck, 2018, p. 7).

Women, particularly those from the global south, have been identified as particularly vulnerable due to several factors. These include the likelihood for women to live in poverty more than men; less access to resources such as land and capital; their dependence on farming or agriculture which is greatly disrupted with changing climate; less access to basic human rights and finally their predisposition to violence and discrimination. Climate change disruption is also causing the movement of people from one location to another as a way of adapting to the changes.

This global picture is not different from what has been found in the northern regions of Ghana. There is a trend of massive movement of people from the northern regions of Ghana to the south of Ghana. Between 2000 and 2010, the northern regions recorded the highest out-migration in Ghana, with 947,102 people (23% of the population) migrating out of the region (GSS, 2013). Census data from 1960 till date has consistently documented a very high out-migration from the northern regions and a very substantial flow of in-migration to the Greater Accra region. The 2010 Census recorded an in-migration rate of 40.72% for the

Greater Accra region (Lattof et al., 2018 cited from GSS 2013c). The Greater Accra and the Ashanti regions serve as the main destination regions for northern migrants (Lattof et al., 2018; Ackah & Medvedev, 2012). This movement has been established to have taken place for several reasons, including environmental and post-colonial impacts (Nyantakyi-Frimpong & Benzner -Kerr 2017; Wilson & Mittelmark, 2013; Cassiman, 2010) which are elaborated on later in this chapter. The northern regions of Ghana being referred to here are the five northern regions; namely the Upper East, the Upper West, the Savannah, the North East and the Northern regions. They cover total area of approximately 97,000 km² (Ahenkan & Boon, 2011).



Figure 1: Administrative Map of Ghana

Source: GSS, 2021. Ghana population 2021 and housing census.

The Northern region has the highest population growth rate in Ghana, 3.7%. Between 2010 and 2022, Ghana’s population grew by 37.1% and all the northern regions combined

accounted for 14.3% (GSS, 2021). A high population rate places enormous pressure on limited infrastructure and already scarce resources, particularly land, which is one of the main resources of these regions. The northern regions also lack proper infrastructure and amenities such as roads, water, health facilities, power and utility systems. In a region where children are seen as resources and additionally faces very high outmigration, childbearing bears a very significant and important purpose. Large family sizes are culturally accepted, and a norm. Children serve as labour supply for farm work and other forms of family work or business (Shaibu et al., 2020); children have economic importance or benefits to families in the northern regions of Ghana.

The northern economy is largely informal and heavily reliant on kinship ties and informal relationships, that mainly favour men. Household leadership for example is the natural right of men.

The history of both development and migration in the north holds a colonial relevance, and cannot be discussed without reference to British colonization. The current gap in regional development inequality between the north and the south of Ghana is a continuation and an impact of British colonial practice. The British colonizers described and perceived people from northern Ghana as uncivilized and unprogressive, and as people who were only useful to serve as labour to the south and for national security (Botchway, 2001). Agricultural production in the north was targeted for servicing industries in the south of Ghana and abroad. Both human and material resources were extracted from the region for the development of other regions. The British introduced modern methods of farming that led to large commercialization that took land from the local farmers and placed it in the hands of large corporates and enterprises (ibid). Northern men control land allocation since they are mostly the main decision makers and holders of land in the region. They commercialized lands belonging to women as the first and immediate option. Health facilities like hospitals were

only accessible to the colonizers and were located in the south (ibid), leaving the north deprived and lacking of many basic infrastructures. The colonial political economy perpetuated these massive inequities between the north and the south, that continues to exist to this day. Today, the north of Ghana are the poorest regions, and considered as the most deprived regions amongst all other regions of Ghana (Adzawla & Kane, 2019; GSS, 2010 cited in Ahenkan & Boon, 2011; Kwankye, 2012; Abdulai et al., 2018; Tsikata & Yaro, 2014, World Bank, 2020), with limited access to economic opportunities and basic infrastructure. As such, the south is an attractive destination to many from the north. Dill & Zambrana (2009, p. 112) define poverty as “the result of the unequal distribution of society’s goods and resources and the concentration of wealth in the hands of a few”. When analysis is performed on poverty through this definitive lens, the northern regions of Ghana are situated as poor due to the unbalanced concentration of wealth, and government resources in the south of Ghana. Between 2012 -2016, whereas poverty declined in the south, it increased in the north (World Bank, 2020). Furthermore, women in the north are disproportionately poor due to the concentration of wealth and resources disproportionately in the hands of men.

North to south migration began as a masculine concept or agenda (Tufeiru, 2014), when the British colonial government recruited only men from the northern regions of Ghana into the Royal West African Frontier Force (the military force at the time). Men from the north also served as labour reserves in the mines, cocoa plantations and civil work in the south of Ghana (Adaawen, et al. 2014; Awedoba & Hahn, 2014). Certain cultural practices and social norms marginalized the migration of women during this time. Masculinity is associated with physical strength in relation to femininity, which is associated with physical weakness. Men therefore became an automatic source of labour for work and for military service, whilst women were left to perform domestic or reproductive work. The European colonial master

divided work according to the European concept of division of labour. The European culture in the eighteenth century saw women as lesser than men (Connell, 2005), and it was this culture that the British transported as a practice to Ghana. Within the Ghanaian context, migration is a gendered act. Historically, men were the main migrants with women often accompanying them (Tufuor & Sato, 2017). Agency or even the decision to move lay with men. However, this is changing in recent times with many single and young women migrating independently in search of a better source of livelihood and income (Tufuor & Sato, 2017; Cassiman, 2010). North to south migration often results from family and community ties that influence the decision on the southern destination (Lattof, 2018). Most migrants have connection to families, friends or acquaintances in the south. The two main destinations in the south for northern migrants are Kumasi in the Ashanti region and Accra in the Greater Accra region.

Recently studies have also found a correlation between environmental changes and labour migration in the northern regions of Ghana. Beyond post-colonial impacts, movements from the north to the south are also driven by environmental changes such as drought, irregular rainfall and other climate-related impacts that affect agricultural productivity. These environmental impacts are experienced uniquely by different genders, and women are identified as particularly more impacted than men. Agriculture is the main economic activity of the northern regions of Ghana (Adaawen et al., 2014; Nyantakyi-Frimpong & Benzner - Kerr 2017; Tufuor & Sato, 2017). The regions' heavy dependence on agriculture is due to its exclusion from government industrialization plans, dating back to the days of the colonial government (Awedoba & Hahn, 2014). The exclusion from industrialization and many development plans, coupled with environmental changes that are greatly affecting agricultural productivity, has left the region very vulnerable. The northern regions are named in the

National Adaptation Plan framework as the most vulnerable to the impacts of climate change (ibid).

Beyond the post-colonial and environmental impacts, there are also other social, political and cultural factors that are driving north to south migration, particularly among women. These include land grabbing, large scale land commercialization, forced marriages, and early female marriage (Adaawen et al., 2014). These drivers have gendered dimensions. For example Tsitkata & Yaro (2014) found in their study that large scale land commercialization in northern Ghana has been unfavorable to women. Access and ownership of land is traditional, and deals are negotiated with traditional chiefs, who are mainly men and representatives of foreign governments and investors. Many statutory and customary land laws favor men to the detriment of women- for example, women's access to land is mainly possible only through marriage (Tsitkata & Yaro, 2014). Research in Ghana has shown that sociocultural factors marginalize women in many ways and are among the main reasons why many young women migrate from the north to the south (Awumbila & Ardayfio-Schandorf, 2008; Wilson & Mittelmark, 2013). The southern part of Ghana provides these women more independence and free them from cultural practices such as forced marriages and early betrothals. The south also provides more economic opportunities. Majority of women and girls are engaged in head portering business when they arrive in the south.

There are many factors that differentiate the north of Ghana from the south. This also includes male and female relationships, in the form of patriarchal practices, structures and culture. The south of Ghana being referred here are Kumasi in the Ashanti region and Accra in the Greater Accra region.

The northern regions of Ghana are dominantly Muslim, whereas the south is dominantly Christian (Pellow, 2001). The Islamic religion has many restrictions on what a woman can or

cannot do, as compared to the Christian religion. For example, female leadership in the mosque is not acceptable; but this also goes beyond religious spaces to other public and private spaces, including the home. Men are permitted to marry more than one wife within Islamic practices. Christianity on the other hand allows for female leadership and monogamous marriages, both from the male and female sex. In both religion men are seen as the traditional head of the home or family, but Christianity offers more freedoms and liberties for women; leadership opportunities within and outside the church, freedom of economic and decision-making participation in both private and public spaces. Religion is therefore a key factor when analyzing male and female relationship and liberties between the north and south of Ghana. Women enjoy comparatively more independence in the south than in the north. Additionally, education is a source of female empowerment (Hanmer & Klugman, 2016). The more educated a woman is, the more they are able to challenge, oppose and reject patriarchal structures and restrictions over them. As of 2020, there were four times (4,465,108) as many females (3 years and older) who have either been to school before or are currently in school in the Greater Accra and Ashanti regions than in all the 5 northern regions of Ghana (GSS, 2021). At the same time, as of 2020, there were 1,181,112 females, (3 years and older) who have never been to school in all the 5 northern regions, and 722,760 females in the Greater Accra and Ashanti regions, (3 years and older) who have never been to school. That is, there are fewer females who have never been to school in the south of Ghana compared to the north. As such, many girl-child education and women empowerment projects and interventions in Ghana are targeted towards the north.

Finally, inheritance in the north follows a patrilineal system, this means that descent and lineage is traced from the male. Inheritance, titles and family name are therefore acquired through the male. In the Ashanti region on the other hand, the lineage is through a matrilineal system; that means the lineage and descent tracing is through the female. Although the family

name does not come through the female, rights of inheritance are transferred through the female; consequently, women can inherit properties. When marriages dissolve, women do not lose access to land or their children (Takyi & Gyimah, 2007) as would be the case in a patrilineal society. The Greater Accra region is much more nuanced. Traditionally, the region also follows a patrilineal system. However, being the capital city, it has been exposed to a lot of modern transformations and migration- such that Accra is made up of a variety of people from the different parts of Ghana. It is not a strictly a traditional society; the culture is very diverse. There are much more liberties and freedoms for women and girls in Accra than there would be for a traditional patrilineal society due to the above reasons.

Within a patrilineal society, women are much more dependent on their husbands, as that guarantees access to many resources including land. However, in matrilineal societies women, receive much support from their lineage and can gain access to many resources such as land through their lineage (ibid).

All the regions have patriarchal structures. For example, although the matrilineal systems trace inheritance from the female side, it is the males from the female lineage that normally inherit- thus, inheritance is for the sister's son. However, due to modernization, and higher education among females in the Ashanti and Greater Accra regions compared to the north- there are many liberties, more autonomy and independence for females in the south in comparison to the north.

Although in the past migration was only occurring among men and specifically illiterate men, today migration is not only among illiterate men- but also men of different backgrounds and professions (Awedoba & Hahn, 2014) as well as women. High unemployment rates, and lack of opportunities in the north and environmental changes that affect agricultural production are forcibly influencing a move from the north to the south. Women's ability to migrate today is as a result of changes in cultural dynamics and other economic factors (Tufeiru, 2014) that

provide women agency to make such decisions. The northern culture is masculine, structured in relation to the gendered notions. That means women are expected to marry, give birth, take care of the home and serve their husbands and their families. These power relations create spaces of dominance and subordination, where men occupy the dominant space and women the subordinate space.

Whilst there are several studies on internal north to south migration in Ghana, there are limited studies or analysis on the gendered aspect of the migration and the intersections between social, political, economic and environmental factors that drive the decision to migrate. Some studies such as Lama et al. (2021) and Suhiyini et al. (2019) have identified migration as an adaptation strategy to climate change, and have usually identified women as more vulnerable to impacts of climate change- therefore, driving the decision to migrate. These studies however fail to analyse the intersection of the many factors that place women in these vulnerable situations. In the northern regions of Ghana, land ownership, for example, is largely the domain of men, as they are primarily the traditional owners of land. Tufuor & Sato (2017), confirm this gap in the current literature and argue that while there is more understanding about the movement from the north to the south by women in Ghana, the interconnections between gender and other categories such as age, marital status and socio-economic status, in mechanisms of their decision to migrate as well as where the decision to migrate lies is less well studied. Women's location within household chain of command and conventional gender norms are reinforced by gender interactions and relations, which has consequences for unequal access to resources (Tufuor & Sato, 2017). Feminists argue that, gender should not be viewed as an independent social category but rather one that interacts with and is shaped by other forms of social categories such as class, age, ethnicity, etc (Nyantakyi-Frimpong & Benzner -Kerr, 2017). It is not a fixed concept, but evolving and shaped by several other factors, relations and interactions. Women's experiences are shaped

in a broader socio- cultural context. Gender relations and norms are shaped by inequalities of power and access to resources. It is therefore important to perform the analysis within the context in which women live their everyday lives.

This research will focus on these interactions to provide a better understanding of how gender relations and traditional gender norms place women in vulnerable positions, including their vulnerability to climate impacts and the consequent effect on migration. In addition, this study will explore the livelihood situation of northern migrant women in their destination region, the south of Ghana. Health hazards and vulnerability to physical and psychological abuse such as rape, unwanted pregnancies, robbery, human trafficking and forced sex work, are prevalent problems facing most migrant females living and working in southern Ghana (Tufeyru, 2014).

1.1 How and why is this topic situated in women and gender studies?

Why is it relevant to analyse gender in the context of north to south migration and climate change in northern Ghana? This topic holds relevance for women and gender studies because once again it shows how patriarchy shapes vulnerabilities among women. A gendered analysis of the impact of climate change in the north of Ghana and the nexus with migration will show how vulnerabilities are shaped and which groups are disadvantaged. An intersectional analysis will reveal the cause of such vulnerability and not just a reason or the effect. This knowledge is important to create policies and solutions that respond appropriately to these challenges and are gender responsive. Inequality is defined by Dill and Zambrana (2009, p.108) as the "...institutionalized patterns of unequal control over and distribution of a society's valued goods and resources such as land, property, money, employment, education, healthcare, and housing". In the northern regions of Ghana, resources such as land, property, money, employment, education, healthcare and housing are controlled by men. With limited

access to resources, changes to the climate that affects land and agricultural production impact women in northern Ghana the most; a decision factor for migration. A gendered analysis will place emphasis on the intersection and complexities of these factors rather than the singularity of it. A feminist analysis provides an important framework for generating new knowledge and understandings of inequalities and oppressions due to its unique way of offering different and dynamic methods of assessing power relations, marginalization and oppression, beyond traditional methods and ways of conducting research (Dill & Zambrana, 2009), and it does not draw simple correlations between factors. This study employs an intersectional analytical framework with the aim of producing transformational knowledge on climate change, gender and the migration nexus in the northern regions of Ghana. Dill and Zambrana (2009) calls the knowledge generated through such a process as transformative. The knowledge is not only transformative, but can be used to transform society and individual lives. This is the purpose and importance of feminist analysis.

I am positioned in this research as a transnational feminist; born and partly educated in Ghana; currently working and located in Europe; and pursuing higher education in North America, having previously studied in Europe. Working and studying in these locations has informed and transformed my understanding of global issues, which provides me with a unique perspective. There are many tensions between the local knowledge and Western knowledge. What I refer to as local is my knowledge from Ghana. I consider Ghana home and therefore identify the knowledge acquired there as local. African transnational feminists have written extensively on the differences between feminism of the Global North and Global South, and the tensions that exist between the two. Whereas feminism in Africa mainly concerns itself with access to basic needs such as drinking water, firewood and employment opportunities (Basu, 2000) for women, Western feminism concerns itself with social transformation which demands uprooting and replacing the prevailing social structure

(Nnamaeka, 2015). In the northern region of Ghana, the lack of basic needs like water means that women and girls have to travel several kilometers in search of water for home and domestic use. The kind of feminism that will resonate with women and receive their support will be one that can provide them such material solutions. This is a feminist concern that I can relate with. At the same time, I also relate with Western feminism that calls for decolonization, the collapse of patriarchy and all forms of oppression (social, political and economic). Transnational feminism situates local realities within a global context, and avoids the generalization of all forms of women activism. It is the form of feminism that situates activism within specific political economy and culture (Basu, 2000).

1.2 Purpose of the research

The aim of the study is not to draw simplistic correlation between changes in climate and migration, but rather to look into the intersection of social, political, environmental and economic factors that compound to drive the decision to migrate and position women as a vulnerable group. It will further elaborate on how women's positionality and standpoint theory as applied to gender help explain the intersections. The questions I will ask are: who take the decision for women to migrate? Where does agency lie in the decision-making process? Do women themselves decide to migrate? Is the “supposed” vulnerability of women to climate change a result of the gender inequality, biases and the normalization of the preexisting power relations?

This study adds an intersectional analysis to the already available literature on the study of the interconnections between climate change, gender and migration. Although there are studies on north to south migration in Ghana, the drivers of this movement, the connection to climate change, and a gendered analysis is mostly missing. When available it lacks an intersectional lens. Previous studies also have not focused on analysing the local institutions that moderate

the decision to migrate especially when it comes to women. This study will be adding this perspective and analysis to the scholarship of gender and migration. Through this analysis policy recommendations will be made to inform Ghana's National Adaptation Plan- which is currently in development.

In this study, migration will refer to internal migration within Ghana, specifically north to south migration.

The research will rely on available scholarship to answer the following questions;

1. What can a feminist analysis of agency inform on climate change and migration among women in the northern regions of Ghana?
2. How do institutions of norms, rules and values shape gender and moderate migration decisions among women in the northern regions of Ghana?
3. What does a feminist analysis of gender reveal about patterns of practices and power relations that create vulnerability among women in the northern region of Ghana to climate change?
4. How do gendered relations and practices shape migration as an adaptation strategy among women in the northern regions of Ghana?
5. How does Ghana's National Adaptation Plan define and politically address gender and power relations in its adaptation strategies.

1.3 Structure of the study

The research will be organized into five chapters. The first chapter introduces the topic and sets out the reason and importance of the study. It puts forward the research questions the

thesis aims to answer and lays out the relationship between the thesis project and Women and Gender studies. Chapter two will provide a review of relevant academic literatures on north to south migration, gender and climate change interconnections. Chapter three introduces the theoretical framework and methodology for the thesis. It will offer a nuanced, local assessment of concepts like patriarchy, and, methodologically, ground the conceptualization of intersectionality in the local, Ghanaian context. Chapter four will provide the analytical component of the thesis, bringing together data and performing a critical analysis to generate findings to answer the research questions. Thematic analysis will be conducted on the three main themes of the thesis; climate change, migration and gender. Finally, chapter five will present a summary of the thesis, and put forward recommendations for policy makers to inform government policies and decisions. Recommendations will be tailored specifically at the National Adaptation Plan.

Chapter 2: Literature review

This chapter conducts a review of available peer reviewed literature on the topic.

2.1 Climate change and its impacts

The impacts of climate change are well documented and scientifically proven, with these observable impacts projected to worsen over the coming years (Adzawla et al, 2019). Science has confirmed that climate change is a human induced problem which is threatening human survival and security. Some climate impacts have already reached a tipping point where damages are irreversible (IPCC, 2021; IPCC, 2022). Impacts will intensify if rapid actions are not taken to reduce greenhouse gas emissions (IPCC, 2022). Limiting warming to 1.5°C provides the surest way to human survival and a liveable planet (IPCC, 2021; IPCC, 2022). Extreme weather events are still projected to occur at 1.5 °C warming but at a lesser frequency in comparison to warming beyond 1.5°C (IPCC, 2021). A 6°C rise in temperature is projected to occur by 2100 in Africa (Amouzou et al., 2019).

There is a direct link between climate change and development. However, achieving the United Nation´s 2030 Sustainable Development Goals will be hindered by climate change and it´s impacts (Filho et al., 2018, IPCC, 2022). Severe weather and climate extreme events are more extensive in communities in Africa, Asia, Central and South America, Small Islands and the Arctic (IPCC, 2022). The impacts of climate change on the African continent are severe, and adversely impacting food security and natural resources such as water, land etc (Adzawla et al., 2019). Africa is one of the most vulnerable regions to climate change and it will be highly impacted by climate change across many regions, due to its very large agriculture economy (Filho et al., 2018; Adenle et al., 2017; Vercillo, 2022). Over 40% of the African population is estimated to be working in the agricultural sector (Filho et al., 2018). Limited

infrastructure, poor governance and planning, and limited resources constrain resilience building and heightens vulnerability to climate risks. A focus on adaptation is important to limit climate change impacts on the continent, but adaptation faces many limitations due to technical, social, economic and political restraints (Adenle et al., 2017; Vercillo, 2022). Lack of historical data poses a technical challenge for developing weather projections, leading to large uncertainties about rainfall patterns and duration. Without an accurate forecast, it is impossible to plan and prepare for weather changes and events. Climate change, manifested through flood and drought threatens food security and sustainable livelihood and sustainable development in Africa (Amouzou et al., 2019; IPCC, 2022).

The concept of climate apartheid has been developing in recent literature to show the inequities and imbalance of climate impact on richer nations versus poorer nations and the inadequate support (financial, technical, technology, knowledge and information) from richer nations to poorer nations. (Rice et al., 2021). Although poorer nations contribute really little to climate change, they stand to be the most impacted. In the United Nations Framework for Climate Change (UNFCCC) negotiations process, poorer nations have demanded financial, technical and technological support from the richer nations for losses and damages and for adaptation measures.

Ghana has warmed by 1°C between 1960 to 2000, and temperature is projected to further increase by 0.6°C, 2.0°C, and 3.9°C by the year 2020, 2050 and 2080, respectively (MESTI, 2013). Impact of climate change in Ghana is manifested by increasing drought, sea-level rise, rainfall variability, flooding and extreme and unpredictable weather events (ibid). Climate data analysis and modelling shows a sea-level rise of 2.1 mm per year over the last 40 years in Ghana, with potential increases of 5.8 cm, 16.5 cm and 34.5 cm by 2020, 2050 and 2080, respectively (ibid). Diseases such as malaria, diarrhoea and meningitis are on the rise due to air pollution and changes to the aquatic ecosystem (ibid). Rainfall has also decreased overall

over the years (ibid). Ghana's climate is getting drier with increasing temperature (Adzawla et al, 2019). Ghana's gross domestic product (GDP) is projected to decline between 0.6% to 1.5% by 2050 due to climate change (Arndt et al., 2015).

Farmers in Ghana are aware of climate variability (Adzawla et al., 2019); they define climate change as changes in weather, for example irregular rainfall, flood and drought (Mersha & Van Laerhoven 2016; Van Aelst & Holvoet, 2016; Kumasi et al., 2019; Awunyo- Vitor, 2017), but most attribute the cause of climate change to religion, as an act of God (Dickinson et al., 2017). Cultural reasons explain this as Ghana is a very religious country. Weather unpredictability and changes have serious consequences for rural farmers (Van Aelst & Holvoet, 2016). Rural farmers depend largely on nature for crop and animal farming, and rainfall serves as the main irrigation method (Filho et al., 2018; Van Aelst & Holvoet, 2016). Crop production is therefore severely impacted when the rains do not fall. Additionally, they have limited social and institutional networks, limited to no technology know-how, and economic incapacity to adapt to climate impacts (Filho et al., 2018).

According to the World Bank (2018), agriculture is critical for Ghana's economic development. It contributed 18.9% to Ghana's GDP in 2016 and 36% to employment in 2015 (ibid). Out of all the sectors of the economy, agriculture provides the best economic pathway to eradicate poverty in Ghana, but it is also the most climate vulnerable sector. Arndt et al. (2015) add to the importance of agriculture to the Ghanaian economy in their study, which finds that close to a third of Ghana's exports come from the agricultural sector. In 2011, the agricultural sector experienced the least growth (0.8%), leading to a decline in its share of GDP (World Bank, 2018). Between 2010 and 2016, the sector's contribution to GDP had fallen by almost 10% (World Bank, 2018). Rural and poor communities are the most vulnerable to climate shocks and risks (Adzawla et al, 2019; UNEP, 2011, cited in Filho et al.,

2018; Wrigley-Asante et al., 2017) as it impacts the income of farmers and leaves them worse off economically. Ghana's energy sector is also impacted by climate change. Drought causes water shortages and affects hydropower electricity generation and supply. This is problematic as hydropower is the main source of electricity generation in Ghana (Arndt et al., 2015).

In Ghana, the northern regions are most susceptible to climate risks and impacts (Acheampong et al., 2014; Arndt et al., 2015; MESTI, 2013, Van der Geest, 2011). The northern economy is highly dependent on agriculture (World Bank, 2020) and most farmers are subsistent farmers with limited income and technological prowess. They employ mainly traditional agricultural practices (Antwi-Agyei et al., 2012). Unstable rainfall patterns have been observed over the years, and rainfall is projected to decrease on average by 2.8 % by 2020, 10.9 %, by 2050 and 18.6 % by 2080 in northern Ghana (Acheampong et al., 2014; Ahenkan & Boon, 2011). Unstable rainfall threatens the future of agriculture and livelihood maintenance due to the region's heavy reliance on rain for agricultural production. The dominant crops known for cultivation in these regions such as millet, sorghum and maize require frequent irrigation (Antwi-Agyei et al., 2012) and are very sensitive to climate variability. There is frequent drought and flooding, with very high temperatures and extreme heat which is expected to increase over the years (Acheampong et al., 2014; World Bank, 2020; Assan et al., 2018). High temperatures and intense heat cause outbreaks of diseases and crop failures (World Bank, 2018). Climate data analysis shows a rapid increase in temperature in the northern regions with estimates showing increases of 1.7°C to 2.04°C by 2030, with average temperatures rising as high as 41°C (MESTI, 2013). The region faces high rates of land degradation (World Bank, 2020; Antwi-Agyei et al., 2012) and decreased soil fertility, which also affect crop production leading to loss of income. Crop productivity in the northern region of Ghana has reduced over the years due to climate variability (Acheampong et al., 2014). To mitigate these impacts and properly plan, climate projections will be needed, but

long-term projection of rainfall is highly uncertain due to the lack of uniformity between climate models (Dickson et al., 2017). Climate data show that the last 3 to 5 years have been drier than the past 10 to 35 years, proving that climate impacts are intensifying, and becoming harsher. Arndt et al., (2015) found in their study that climate change has a negative impact on national welfare on poor households particularly in the northern regions.

Vulnerability is “...characterized by high-levels of poverty, smaller rainfed farms, high rural population density, high unemployment, low literacy levels, and low household incomes” (Acheampong et al., 2014, p.39). Poverty rate on average is 70% among the five northern regions of Ghana (Acheampong et al., 2014). Migration has been employed as a coping mechanism in response to climatic impacts on agriculture in the regions (Acheampong et al., 2014). Dickinson et al., (2017) showed that frequent occurrence of floods and drought had devastating effects on agricultural production, infrastructure, livelihood and human life in the Northern region. Other studies have also pointed to evidence of changes in rainfall pattern and the number of rainy days in northern Ghana (Laux et al., 2008 as cited in Dickinson et al., 2017).

Despite these negative impacts, Ghana’s National Climate Change Policy (NCCP) identified that climate change provides the opportunity for new investments in infrastructure, innovation and technology, renewable energy (MESTI, 2013), and climate resilient crops. Ghana is rich in water and sun resource, and with the right policy actions and investment, can situate itself as a renewable energy hub- creating many new job and employment opportunities.

2.2 Gendered impacts of climate change

There is limited academic literature on the gendered dimension of climate change (Bob & Babugura, 2014; MacGregor, 2010), and as a result, policies are not gender responsive.

Research funding for scholarship on gender and climate change in Africa has however been increasing over the years (Vercillo, 2022). For climate policies to be gender responsive, a clear understanding of the differentiated impacts of climate change is needed. Available scholarship on gender dimensions of climate change also lacks intersectional analysis. Some studies have proven that the impacts of climate change are differentiated (Ajibade & Bezner, 2013; Singh & Singh, 2015, Bob & Babugura, 2014; McGregor, 2010; Yegbemey et al., 2016, Carr & Thompson, 2014) and disproportionate- with women and children identified as particularly vulnerable and with very limited adaptive capacity (Singh & Singh, 2015, Bob & Babugura, 2014; McGregor, 2010; Yegbemey et al., 2016; Antwi-Agyei et al., 2013), specifically women from the Global South (MacGregor, 2010). Women and children are 14 times more likely to die during disasters and are more vulnerable to diseases associated with extreme climate events. (WHO, 2003, as cited in Bob & Babugura, 2014; McGregor, 2010; Yegbemey et al, 2016).

Climate impacts are complex and cannot only be explained with physical science. Impacts interact with social factors such as gender, social relations, and how rights and responsibilities are defined in “production, reproduction and decision-making” (Jerneck, 2018, p7). The impacts of climate change are not uniform across different sexes, classes, and geographies. Depending on an individual’s location within these groups, their experience and predisposition to the vulnerability will differ. The vulnerability of an individual to climatic events is determined mainly by gender (Alston 2014). Evidence suggests that women are more affected by the impacts of climate change than men (MESTI,2013; Eastin, 2018, IPCC, 2022). Feminist studies have promoted the importance of understanding the differences and

the unequal distribution of vulnerability for different groups and genders (MacGregor, 2010). According to Bob & Babugura (2010). Vulnerability is caused by limited access to resources, lower income and susceptibility to poor health and security. Women, and especially rural women from the global south, are mostly identified in these categories. Vulnerability is heightened by cultural and social norms that create gendered roles linking women to reproductive work, with very limited political power and involvement in decision-making in general and specifically climate-related decision fora (MacGregor, 2010). Additionally, women have been identified as having limited technological capacity compared to men, therefore creating more challenges in their ability to adapt (Yegbemey et al., 2016). There is further evidence that caring and domestic responsibilities become harder due to climate change, because women have to travel farther for clean water and firewood to perform domestic duties such as cooking, washing and household cleaning (MacGregor, 2010; Singh & Singh, 2015; Ajibade & Bezner, 2013). In times of water shortages, women and girls travel long distances (Mersha, 2016) in search of water, thereby increasing the burden of domestic work and increasing their exposure to other related diseases. Women put their health and well-being at risk to ensure that their children and family can be fed in cases of shortage in household items such as food, water and energy (MacGregor, 2010; Singh & Singh, 2015). Climate change not only reveals how gender inequities produce and shapes vulnerabilities- but it also reinforces these inequalities which will lead to a further decline of women's economic and social rights (Adzawla, 2019). There is evidence to prove how climate change further worsens women's economic and social rights. Research found that climate variability led to a further widening of the gender welfare gap in northern Ghana (Adzawla & Kane 2019 cited in Adzawla, 2019). Climate risks lead to more severe hardships for women than for men. Research explains that women have much less adaptive capacities to cope with climate impacts and variabilities due to the high rates of poverty among women (Adzawla, 2019).

Women have less economic power than men. Unemployment rate among women is higher than men- and even when women are employed, they received lesser wages than men (ibid), for doing the same amount of work or sometimes for doing even more work. These economic disadvantages reduce resilience, making women more vulnerable.

Political representation both at the national and international level disproportionately favours men. The international climate diplomacy space is male dominated. Similarly, in Ghana, out of the two hundred and seventy-five (275) Parliamentarians, only forty-five (45) are women. The inadequate representation of female voices or opinions in the political decision-making process leads to policies, political decisions or outcomes that do not favour women (Adzawla, 2019).

Gendered norms that reflect in gendered division of labour and resource access, also nurtures women's vulnerability to climate risk and impacts (Vercillo, 2022). Feminist political ecologists show how differentiation of economic and social roles, prejudiced laws, and disparity in asset ownership restricts women's rights and economic opportunities. Such restrictions expose women to environmental risks and disasters (Eastin, 2018). Although women in Africa produce 50% to 80% of agricultural produce, land titles and ownership are mostly (80%) in the hands of men (FAO, 2016 cited in Eastin, 2018). This shows the gender disparity in labour and economic power. Whereas women are responsible for production, men wield the economic power and the means of production. Land ownership facilitates access to financial markets (Eastin, 2018). Individuals who have control of capital, access to information and education, are involved in decision-making and who control natural resources, have greater means of resilience building (Alston, 2014). Women, faced with the burden of unpaid care work, have limited access to social networks and freedom of mobility- which also restricts their access to capital and markets. Gendered division of labour in

northern Ghana, restricts women from accessing farm labour because a woman's role on the farm is to support with sowing and weeding and not as the main farmer (Assan et al., 2018).

Thus, women are expected to provide labour services to farms but not to acquire them.

Mersha (2016) also argues that in rural communities, certain cultural norms restrict women's engagement in certain farming practices. For example, in negotiations, women are not allowed to bargain for higher prices whereas men are. This means that women farmers will earn less for their yields and receive less money for land rent if they are land owners.

Crop type cultivation decisions affects one's predisposition to climate risks and impacts. Carr & Thompson (2014) found that women are more likely to cultivate crops that have great sensitivity to weather changes due to their lack of access to credit to purchase drought resistant seeds. Wrigley-Asante et al. (2017) also found in their study that whereas male farmers cultivated drought resistant crops, female farmers planted traditional crops and practiced mixed cropping.

The level of adaptive capacity a rural farmer can possess depends on their gender. Men own larger farms and mostly engage in commercial farming due to their ready access to capital and resources, whereas women own smaller plots and mainly engage in subsistence farming (Yegbemey et al., 2016). Access to land and capital enables crop diversification, the use of new and modern agricultural technologies that strengthen adaptive capacity and build resilience (Yegbemey et al., 2016; Bob & Babugura, 2014; Mersha, 2016; Van Aelst & Holvoet, 2016). Although migration is one of the adaptation strategies, women's mobility are restricted due to child care and domestic responsibilities (Mersha, 2016). In the northern region however, the statistics tell a different story; they show that more women are migrating in comparison to men. 43% of women from the north migrated to the south, in contrast to

37% of men (GSS, 2008, as cited in Wilson & Mittelmark, 2013). However, many times the decision to move, especially among married women also does not lie with women. The burden of domestic work and farm responsibilities create obstacles for women to engage in non-farm related activities that could improve their income thereby reducing their vulnerability (Van Aelst & Holvoet, 2016). Rural women may also lack the capital to invest in non-farm activities.

Some studies have elaborated on the need for new studies to not only focus on differences between men and women, but also examine differences within them, avoiding the categorisation of women and men as a homogeneous group (Bob & Babugura, 2014; Van Aelst & Holvoet, 2016). For example, Singh & Singh (2015), Van Aelst & Holvoet (2016), and Ajibade & Bezner (2013) found that married women possess more adaptive capacity in comparison to single and divorced women. This is because married women get support from their husbands, therefore easing some of the burdens and difficulties that come with climate impacts - whereas divorced or unmarried women have to deal with the difficulties on their own. These authors refer to marriage here as a heterosexual one, thus between a man and a woman and while possibly problematic, it is due to the cultural context of the study area. The research was conducted in rural Asian and African communities, where marriage is usually between a man and woman. Findings from Ajibade & Bezner (2013) also showed that the level of impact of climate related flooding in Lagos Nigeria, depended heavily on factors such as level of poverty or education among women - rather than just their gender as women. Women do not have a homogeneous experience. Additionally, women with access to more resources could have more adaptive capacity than a man who has access to fewer resources (Van Aelst & Holvoet, 2016).

Although evidence point to the harsh impact of climate change on women, others have pointed out womens´ agency in this process and cautioned against the tendency to victimise women, which has a disempowering effect. Women hold very important knowledge which is valuable for planning adaptation interventions and innovating new technologies (Assan et al., 2018, Alston, 2014). This knowledge is also important to develop adaptation strategies that work. Climate adaption practices differ between men and women (Carr & Thompson, 2014; Assan et al., 2018). Assan et al., (2018) found in their study that, the challenges to adaptation were gender specific, whereas female farmers have a preference for wells, boreholes and bushfire control, the male farmers had a preference for irrigation and drought-tolerant crop varieties. Wrigley-Asante et al. (2017) also found that whereas females adopted non-farm adaptation practices such as petty trading, men were more interested in on-farm adaptation practices such as water and soil fertility conservation practices. The normalization of power structures and power relations restricts access to this knowledge. Some scholars have argued that women´s traditional environmental knowledge stems from their natural connection to and care for the environment (Vercillo, 2022; Adzawla, 2019). Engaging both women and men in the adaptation planning process is important to make sure that adopted strategies work and respond appropriately to the needs. However, the adaptation planning process is mostly male dominated.

2.2.1 Why is gender important to assess?

Data on gender shows that climate change disproportionately affects small scale farmers, many of whom are women in sub-Saharan Africa (Jerneck, 2018). As mentioned before, climate impacts are not simply an interaction of the physical science. There is a complex nature of this interaction on social science particularly on social relations which produces vulnerabilities, based on how production and reproduction are shaped. This is not well studied

in policy and research. Climate policies must be responsive to intersecting inequalities across categories such as race, class, gender, age and space (ibid). Climate impacts are gendered and depend on space and subjectivities (ibid).

Literature on the gendered dimensions of climate change and migration has often treated gender as binary, and as a homogenous. It is important to assess the different layers and intersection of class, gender, resource access, geography and other factors that come together to shape an individual's vulnerability. Analysis has also greatly focused on roles rather than relations and how they are shaped and create inequities (Kaijser & Kronsell, 2014 cited in Lama et al., 2021). Individuals cannot be removed from the web of external forces their daily lives are emerged in (Parrenas, 2001).

Impacts of climate change and the decision to migrate vary amongst categories of women. Tufour & Sato (2017), conducted a study on young single women's decision to move from the north to the south of Ghana and found that cultural norms, poverty and lack of educational access are among factors that influence women's decisions to migrate rather than climate extreme events or disasters. For married women, the decision to migrate is influenced by the search for independence (Tufour & Sato, 2017) from cultural and social norms that subject women under the authority of their husband. However, migration among married women is not common.

Academic literature has shown that not only does climate change impact on women highlight the existing gender imbalances, but it also reinforces such imbalances. Without the appropriate policy actions, the gap will widen, further restricting women's, social, economic and political rights and freedoms. The damaging impacts of climate change on agriculture could erode gains made toward gender equality in Ghana (Assan et al., 2018)

Eastin (2018) used vulnerability as a conceptual framework for assessing gendered impacts of climate change, including on gender inequality. Vulnerable individuals according to him, are those ones who are mostly reliant on climate sensitive resources, lack access to and control of resources, and are increasingly underrepresented in political processes. Women fall mostly in this category and are therefore, more vulnerable than men to climate and environmental risks and shocks.

In Ghana, women make up 70% of subsistence farmers, 52% of the labour force and contribute 46% to the country's gross domestic product (MESTI, 2013). The impact of climate change on them is therefore important to assess, as this has a direct consequence on Ghana's economic development and gains. Although women are responsible for 85% of Ghana's food production, there are many constraints on their access to land, and capital (ibid). Any efforts at addressing climate change and impacts must first address and recognize gender inequities and the differences of these impacts across different genders. Ghana's National Climate Change Policy places emphasis on addressing gender issues in climate change. The Ministry of Gender, Children and Social Protection is a key stakeholder of the process of development of the policy and of its implementation.

Ghana does not have a National Adaptation Plan (NAP) for climate change yet, but a framework exists which details a roadmap for how Ghana's NAP will be framed. The NAP will follow a gender-responsive approach- which means that it intends to carefully tackle gendered norms, roles and responsibilities with the goal of fostering gender equality rather than merely being sensitive to gendered differences, norms and roles (Environmental Protection Agency, 2018). The NAP framework also acknowledges the differences in the impact of climate change between different genders which it frames as due to political, economic and social inequalities (Environmental Protection Agency, 2018). It identifies

women in the northern part of Ghana as particularly vulnerable to the impact of climate change, which is as a result of extreme poverty and cultural and traditional norms that limit women's economic and political participation (Environmental Protection Agency, 2018). The NAP's gender responsive approach aims to address such social and cultural norms that cause or contributes to women's vulnerability and lack of adaptive capacity to climate impacts. How the NAP will do this is yet to be known and it is yet to be developed, and implemented. The NAP is currently under development and in a consultative phase.

2.3 Climate change and migration

Migration decisions are complicated and cannot be attributed to a single factor, however climate induced migration is becoming increasingly high. Climate change is causing instability across the world but particularly in regions with limited resources. There is increasing research on the connection between climate change, migration and conflicts in many ways (Werz & Hoffman, 2016).

Rural- urban migration is increasing across Africa and governments have done little preparation to cope with the population growth rate in the cities (Filho et al., 2018). This will bring further strain on government resources and institutions. Strengthening governance and building resilience in rural communities will help slow down the movement in the long-term.

Academic literature has identified climate change as a one of the drivers of population movement (Lama et al., 2021). Extreme climate events, like floods, hurricanes, wildfires and droughts, have displaced many people globally (Adaawen, et al., 2014; Werz & Hoffman, 2016). Climate change's impact on food and water security drives the decision to migrate. About 250 million people are likely to experience food and water insecurity by 2100 (UN 2014 cited in Werz & Hoffman, 2016) due to climate change. Climate events over time

negatively impact rural livelihoods due to its impacts on farming which is the main economic activity of many rural communities in Ghana, specifically the north of Ghana. Although climate change may not be the single cause of migration, it acts as a contributory factor and is therefore important to investigate the link between these two phenomena.

The link between changes to the climate and migration can be either direct or indirect.

Whereas some scholarship has established a direct causal link between climate change and human mobility, others have warned why drawing such direct linkages could be problematic (Adaawen, et al. 2014; Boas et al., 2019 as cited in Lama et al., 2021).

In rural West Africa, most people are reliant on subsistence farming. As such, flooding and drought thus present huge challenges for farm productivity and livelihoods (Lama et al. 2021). According to Cassiman (2010), droughts and irregular rainfall patterns makes it harder to find jobs - influencing the decision of many in the north to move to the south of Ghana. Filho et al., (2018) adds that unless effective actions are implemented to address climate change and mitigate its impact on rural farmers, rural -urban migration will continue to persist and increase in numbers and in the long-term, international migration will also be on the rise. Low agricultural productivity, stemming from climate change reduces household income and places enormous pressure on the youth to migrate from the north to the south (MESTI, 2013). Migrant women end up working as head porters on the street (ibid), and are often exposed to many forms of violence such as rape and sexual abuse. These studies draw a direct link between migration and climate change. Other academic literature has also found that climate change is a contributing factor to human mobility mediated by many other social, cultural and political factors (Boas et al., 2019). Scholarship that put forward this argument explains that drawing a direct link between climate change and migration, without an analysis of the other social, political and economic context that intersect to create vulnerabilities and that drive the

decision to migrate, could be problematic. It is not enough to understand who migrates, but also, why and the root cause of the factors that drive migration. Feminist intersectional analysis will help refocus attention to structural issues that explains the why and how, rather than who has the ability to move (Lama et al., 2021).

According to MESTI (2013), migration follows a pattern in Ghana; there is a rise in migration between March and September, the period before harvest, known as the hungry season. A study on migration in Ghana showed environmental reasons as the main cause of north to south migration, particularly in poorer regions and communities (Van der Geest, 2011, MESTI, 2013). But north to south migration is also a result of the interaction between climate change and other developmental challenges (MESTI, 2013). Although environmental reasons are named as a driver of migration, there are other drivers such as economic, social (MESTI, 2013; UNDP, 2012), political and demographic. Out of all these, the social and economic factors are named mostly as the reason for migration (MESTI, 2013). In Van der Geest's (2011) study on north to south migration, he found that many migrants moved from the north to the south due to poverty and lack of access to fertile land. Climate change will worsen economic hardships and increase the rate of north to south migration. Northern Ghana has the highest rate of out migration (MESTI, 2013; UNDP, 2012), as well as the highest population growth rate (GSS, 2021). High population growth rate causes further strain on scarce natural resources such as land and water, which contributes to the decision to migrate. Climate induced migration should be addressed within the context of other development challenges. Climate change should be mainstreamed in all developmental planning and strategies. The Ghana National Climate Change Policy (NCCP), places importance on climate change induced migration and has set up policy objectives and actions for intervention.

Adaptation presents a means for coping and adjusting to the impacts of climate change. In northern Ghana, one of the adaptation strategies employed is migration. Rural and poor

communities do not have many livelihoods diversification options to build resilience against climate change, with migration being among the very few coping strategies or mechanisms available (Acheampong et al., 2014). In the northern region poor households lack the financial means to engage in off-farm activities to cope with climate impact, therefore resorting to out-migration as a diversification strategy (Marchetta, 2013, Van der Geest, 2011). North to south migration is also often seen as a means of self and household enrichment. A large part of rural household income comes from remittances (ibid). Agricultural income is in decline, due to low agricultural productivity as high rates of migration also lead to a shortage of labour for farm activities (Acheampong et al., 2014).

The trend of north to south migration confirms the migration systems theory, which states that migration “emerge out of prior links established through colonialization and preexisting cultural and economic ties” (Castles & Miller, 1998 as cited in Parrenas, 2001, p. 229). North to south migration began from the colonial era when labour was recruited from the north to the south. The trend has continued till today with huge labour movements from the north to the south. The migration system theory also emphasizes how social and cultural ties between family members who migrate further stimulate migration. In north to south migration, destination cities are determined by an individual’s connection to family and or friends in southern city. People move to cities where they have families or friends.

This chapter has presented literature on climate impacts in the northern regions and its interconnection with north to south migration. The impacts are differentiated, with women and girls being the most vulnerable. The next chapter will discuss the theory and methodology for this research project.

Chapter 3: Theory and Methodology

3.1 Theory

This section introduces the most important theories relevant for this study. It starts first by foregrounding feminism within the African context and discussing some African feminist concepts, it follows with feminist political ecology as an important sub-field of the political ecology and finally intersectionality as the main theory for this research work.

3.1.1 African feminism

An important consideration of feminism is the context specificity in its application. Sometimes feminism carries a stigma and political meanings that negatively impact engagement and acceptance in certain contexts (Elmhirst, 2011), particularly in the Global South. Indeed, African feminists have over the years (from the 1980s) attempted to draw a distinction between African feminism and Western feminism- to make sure that feminism resonates with the African populace. African feminism emanated out of a feel of neglect of its needs by Western feminism, drawing attention to colonial and neocolonial institutions that African women have to deal with in addition to patriarchal structures (Awinpoka Akurugu, 2021). Feminism should be situated within the African culture, with a focus on African women's concerns and priorities. Poverty alleviation, deprivation, the importance of motherhood, family, culture, customs and the involvement of men in gender activism is central to African forms of feminism (Awinpoka Akurugu, 2021; Bawa, 2018). Amrita Basu (2000, p. 38) says "...while western women traditionally have based their human rights struggles on issues of equality, non-discrimination and civil and political rights, African, Asian and Latin American women have focused their struggles on economic, social and cultural rights". Theories and concepts have been propounded by African feminists that put

these issues at the fore-front. Chikwenye Ogunyemi propounded African womanism that considers the several levers of the African woman oppression including poverty, wars, patriarchy, western imperialism and colonial and neocolonial institutions (Ogunyemi, 1985). Molaria Ogunidipe-Leslie's Stiwanism (Social Transformation Including Women in Africa) emphasizes the need for partnership with African men against poverty, wars and western imperialism (Basu, 2000; Bawa, 2018). Political activism that includes African men is more likely to receive support (Awinpoka Akurugu, 2021; Bawa, 2018; Mekgwe, 2008). African women share similar struggles with African men on racism and western imperialism and therefore solidarity with African men is central (Awinpoka Akurugu, 2021).

Feminism in Ghana is perceived as a threat to the social, cultural and political order. A study conducted by Bawa (2018, p. 5) found many young women within the ages of 25 to 45 refusing the feminist label. Feminism is attached to radicalism and a "hate for men", making many women refuse to identify as feminist. Situating feminism outside of the African context and culture will thus not only receive hesitation from men but from women as well. Rejection of the feminist label does not equate a rejection of women rights activism in Ghana, "... women leading and working with grassroots organisations may not be as interested in the politics of naming in their work as much as getting the work done" (Bawa, 2018, p. 13).

Nnamaeka's "negofeminism" also reflects African women's experiences. Negofeminism stands for "feminism of negotiation" and "no ego feminism". This feminism does not underestimate the power of negotiation, it negotiates either with or around patriarchal structures depending on context and need. According to Nnamaeka (2015) African women culturally locate themselves within patriarchal structures rather than around gender, thus they identify as mothers, wives, and daughters rather than simply women. These social groups are

linked to men and therefore the need to negotiate with and around patriarchy for a successful political activism. African feminism negotiates and compromises; it does not support radical feminism that demands a complete uproot of societal structures- but instead, argues for an adjustment through negotiation and compromise. These differences sometimes create tensions between Western feminism and African feminism. As an African located in a western country and engaged with western scholarships, these tensions are persistent as I struggle between the demands of Western feminism and the realities of its implications at the local; my local is Ghana. Western feminism is sometimes fraught with imperialist connotations. Some examples of the difference and sometimes imperialists connotations of Western feminism are given below.

Polygamous practice by men is generally accepted in the northern region of Ghana and many other rural communities in the country but this is unacceptable within Western feminism. In addition, the Ghanaian government has been put under intense pressure by western governments and organisations (including western feminist organisations) to legalize Lesbian Gay Bisexual Transgender Queer (LGBTQ+) rights in Ghana. This has sometimes been used as a condition for grants and aids. I support LGBTQ rights, but also believe in self determination of the African peoples- and I abhor impositions and any or modern forms of imperialism.

Despite these differences and sometimes tensions between African and Western feminisms, both share an equal goal of enhancing and or attaining the political, economic, social and civil rights and independence of women and girls, and all those who identify as such.

These perspectives and differences in African feminism are important to highlight in the context of this research, particularly within the northern region context. Employing the western definition of feminism will lead to victimization of northern women as oppressed whereas their means of expressing agency could also be through the acceptance of practices such as polygamy which is seen as absurd in the western feminist eyes. Northern women lack many basic needs and economic opportunities; this accounts for one of the reasons for north to south migration. Feminism focused on economic empowerment and improvement of human welfare will resonate well with this group of women, rather than the western feminist preoccupation on sexual politics and politics of decolonization.

3.1.2 Feminist political ecology

Feminist scholars introduced feminist political ecology (FPE) as a sub-field of the broader political ecology field. FPE emphasize gendered and power relations within and outside the household, and at the local and international level in environmental analysis (Rocheleau, 2008). Feminists highlight the importance of recognising gender in environmental studies and have argued from many perspectives how this should be framed within the scholarship. While some feminists argue a biological connection between women and nature, which draws women's inherent interest in protecting nature and a knowledge about the ecosystem, others denounce this argument saying the knowledge women have about the environment and nature is a result of their close engagement and work with nature that creates this important and comprehensive environmental knowledge (Nightingale, 2006). Ecofeminists denounce the biological association of women with nature (Garrd, 2015), which they argue provides men the ground for exploiting both women and nature as they associate these two as irrational and

in need of control. Dismantling these will dismantle patriarchy and its control over both women and nature.

The use and allocation of environmental resources and its control operates within a political context. Thus, power and politics play a very important role in environmental resource use and control (Boamah, 2014; Nyantakyi-Frimpong & Bezner Kerr, 2017). Those who possess the power have much more control over environmental resources. Nightingale (2006) argues that not only do environmental issues play a big role in contributing to disparities between men and women, but also that gender is closely related to how environments are formed. Thus, gender is both a cause and an effect.

Feminist political ecology lays down the main issues related to gender and the environment. Rocheleau et al (1996, as cited in Nightingale, 2006) list the issues in three points. Firstly, access to technical and environmental knowledge and how this is organised by gender; men have privileged access to new trainings and scientific knowledge whereas women's knowledge of the environment is attained from their traditional roles and work within the household. Secondly, gendered differentiated rights, responsibilities and access to environmental resources, such as the traditional rights of men to land ownership whereas women have limited rights and access (ownership is through marriage in many rural households). Finally, gendered ecological politics and activism- thus highlighting women's role in the fight for environmental protection and the control of natural resources, where women are often leaders of environmental movements. Feminist political ecologists are preoccupied with highlighting these gendered differences in environmental issues, and the importance of situating gender in environmental analysis and providing tools needed to do this work.

In the northern regions ownership and inheritance rights of land are traditionally the prerogative of men. This control economically marginalizes northern women causing their move to other regions of Ghana in search for economic opportunities. Additionally, FPE highlights how women's limited access to technical and environmental knowledge, training, and environmental resources explains the power and politics of the environmental use and control and its domination by men.

Political and economic liberation of the northern women by negotiating with patriarchal structures as expounded by the negofeminism theory, for adjustment and compromise provide a promise for successful activism in northern Ghana.

3.1.3 Intersectionality

This study employs intersectionality as a theoretical framework to assess the institutions of norms, rules and values that shape gender, vulnerability of women and moderate migration decisions among women in the northern regions of Ghana. The gender differences in political ecology will be analyzed alongside intersectionality, showing the many layers and convergence of the many domains of power. Intersectionality, when used in this thesis, will refer to the interaction of the social, political, environmental and economic factors that combine to shape the experiences of women from northern Ghana in climate change and the consequent effect (if any) on migration.

Intersectionality is a popular theoretical term, widely used in feminists' discourse as both a theoretical and an analytical framework (Patil, 2013; Collins & Bilge, 2020). Intersectionality is used by scholars for different analysis to explain how many forms or categories of powers intersect to create oppressions and or marginalizations. Intersectionality has also been applied in the environmental science field by feminist scholars to provide analysis on the gendered or

differentiated impacts of climate change (Owusu et al., 2019; Collins & Bilge, 2020) and women's most vulnerable position based on the many social and power structures that intersect to place women in a location that creates their vulnerability (Singh & Singh, 2015).

Intersectionality cautions against the treatment of women as a homogenous group (Crenshaw, 1991; Collins & Bilge, 2020), and acknowledges the differences among women. It provides the theoretical framework to analyze such nuances and differences. In the Northern region of Ghana, different categories of women can be identified namely, but not limited to single, married, widowed and divorced.

Many scholars credit the coining of the term intersectionality to Kimberle Crenshaw, although others are critical of this attribution and argue that the core idea of intersectionality existed; what Crenshaw did was to put a name to a practice that already existed (Collins & Bilge, 2020; Nash, 2008). In Crenshaw's work on "Mapping the Margins: Intersectionality, Identity politics and Violence against Women of Color" in 1991, she explained how the experience of violence against women of color are a result of two intersecting dominations; racism and sexism and how this experience differs from what White women or Black men experience. Racism and sexism intersect to create several forms of violence against women of color including structural, political, and representational (Crenshaw, 1991). Crenshaw (1991) argues that women of color find themselves at the intersection between racism and sexism, thus they are impacted by both at the same time. They are saddled with poverty, motherhood or single parent responsibilities and do not have the adequate job skills that could lead to gainful employment (Crenshaw, 1991). These challenges are caused by class oppression, gender and racial discrimination (Crenshaw, 1991). The lack of intersectional lenses between racism and sexism in addressing the violence and oppression black women face means that

gaps continue to remain in strategies and policies that are created to address these social issues. Similarly in the gender, climate change and migration literature on the north to south migration in Ghana, a lot of emphasis has been placed on positioning women as the vulnerable group without a critical analysis of what shapes these vulnerabilities. The gender and social relations and interactions that makes women ill equipped to adapt to climate impacts have not been adequately analyzed. Wilson and Mittelmark (2013) argued internal migration within Ghana as forced to some extent. They explain that the north to south imbalance in development and resource allocation, including access to basic facilities, employment, education, and services, drive many away from the north to the south. Women in the north have even more limited access to the already limited resources, with land mainly and largely owned by men (Cassiman, 2010). In some regions, women are not allowed to grow certain crops which are more profitable. For example, Cassiman (2010) found that, in the Kasena-Nankana region, women were culturally not allowed to grow millet and guinea corn, the two main staple crops of the area.

On the intersection between racism and gender and its connection to internal migration in Ghana, the story goes as far back at the beginning of north-south migration which was a colonial invention that has come to stay. Its origin began as a masculine concept when men from the north were both voluntarily and involuntarily moved to the south as labourers to mines and farms for the colonial economy. This sexist practice limited women's mobility, and today although more women than men are migrating to the south from the north, this is still seen as culturally undesirable.

Collins & Bilge (2020) expand the definition of intersectionality and propose intersectionality as an analytical framework that can be employed to understand many social issues and provide creative solutions. Intersectionality is the synergy between theory,

knowledge, methodologies, ideas, thinking and action or practice- it is not one or the other (Collins & Bilge, 2020). Collins & Bilge (2020) outline some core ideas of intersectionality including social inequality, power relations, and social justice. These core ideas provide the perfect framing for gendered analyses of climate change and migration in the northern regions of Ghana. The idea of social inequality lies on the premise that social inequality falls differently on diverse groups based on their race, gender, nationality, ability, sexuality and class. Furthermore, intersectionality as an analytical framework helps to understand how these inequalities are structured and replicated (Collins & Bilge, 2020). Even amongst women from the northern regions, climate impact and the drivers for migration will differ among different categories of women. In the Kasena-Nankana region, unmarried or divorced women or women whose husbands have left, have no representation in the political arena of the house or lineage, for example (Cassina, 2010). These women are even more politically and economically marginalised.

Power is a relationship and it is created. Intersectionality helps to see how different categories of power intersect to create social problems. Many cultural and traditional norms and practices in the northern regions of Ghana continue to disempower women, and limit their engagement in economic and political spaces. Cassiman (2010) found in her study that when husbands are absent from home, the authority and power of the wife or women are reduced both at home and in public spaces. Women are not allowed to participate in certain decisions even if those decisions affect them. Men are given the authority and responsibility of representation on behalf of their wife and family when important decisions have to be made. Cultural norms create these power relations that brings about many social injustice issues such as marginalisation of women in the northern regions of Ghana.

According to Vatn (2005, p. 60, cited in Lanz et al., 2020, p. 526), institutions are a society's "conventions, norms, and formally sanctioned rules." Institutions are therefore a social construct whose deconstruction will involve a deconstruction of conventions, norms and formally sanctioned rules. Feminists make a firm call for deconstruction.

Inequalities derived from imbalance of power relations stemming from social, political and economic factors shape privilege and non-privilege positions for individuals by virtue of their membership to a particular group (Dill & Zambrana, 2009). Intersectional analysis challenges conventional knowledge and creates new knowledge through its unconventional methods of studying power relations and inequality. This will be valuable for studying gendered impacts of climate change in the north of Ghana.

3.2 Research methodology

3.2.1 Study area

The study covers the five northern regions of Ghana, namely the Upper East region, the Upper West region, the Savannah region, the North East region and the Northern region (Figure 1.1). They cover total area of approximately 97,000 km² (Acheampong et al., 2014) out of Ghana's total land area of 238,535 km² (GSS, 2012), and has a total population of 18.9 million (GSS, 2021). They are located in the agro-ecological zones of Guinea and Sudan Savannah. There are higher temperatures in these regions compared to the south because of how the regions are situated geographically. It has a single rainy season with an annual rainfall average from 900 to 1,100 mm (Acheampong et al., 2014). Farming season is only once per annum, between May to October (GSS, 2012; File & Derbile, 2020) and the harmattan season is from November to mid-February (Awunyo- Vitor, 2017).

These regions are most vulnerable to climate shocks and risks amongst all regions of Ghana, experiencing frequent floods, drought, bush fires and diseases (ibid). The main economic activity is rainfed agriculture. Only around 30% of the population live in urban areas, with the remaining concentrated in rural areas (Acheampong et al., 2014). The northern regions of Ghana are the poorest among the 16 regions of Ghana (Adzawla & Kane, 2019; GSS, 2010 cited in Ahenkan & Boon, 2011; Kwankye, 2012; Abdulai et al., 2018; Tsikata & Yaro, 2014). They are known for maize, rice, millet, sorghum, yam, cassava, cowpeas, beans and groundnut farming. The northern regions account for 41% of the agricultural land in Ghana (Asravor, 2019). This region is selected for this study due to their vulnerability to climate impacts and the high rate of out migration in the region. They provide a good context for assessing gender, vulnerability, climate impacts, out migration and their interconnections.

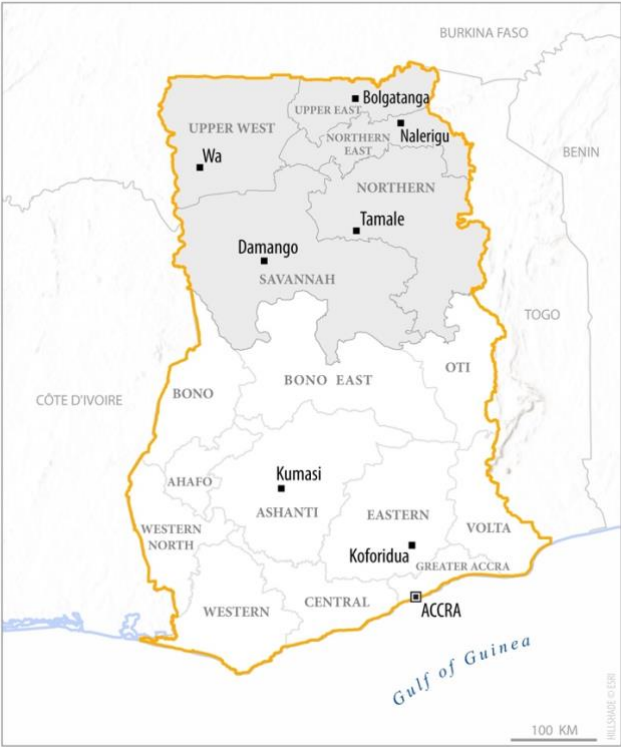


Figure 2: Map of Ghana. Study area in grey.

Source: Will Flanagan, SMU Department of Geography and Environmental Studies original map prepared for author.

Service Layer Credits: Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community.

3.2.2 Methods

This is a qualitative study using literature from 2010 to 2021 on the gender, migration and climate change in the northern regions of Ghana for the analytical part of this research work. The only exception is the inclusion of Carola Lentz's work on the history of northern region which was published in 2006. This exception is because Lentz's work provides the best history on northern Ghana that could be found amongst literature available on the topic. 2010 to 2021 provides a good timeframe for analyzing and studying movement from the north to the south of Ghana, trends and drivers of the movement. This timeframe helps to gather a mixture of older and recent literature on the topic for analysis, helping to capture a wide range of useful and applicable knowledge. Additionally, a lot of research has been done on this topic within this timeframe. The approaches adopted for the study include:

- a. Desktop search to retrieve strategy documents, government statistics, and information from organisational websites.
- b. Search on the Saint Mary University Power online Library which has over 100 databases to locate peer reviewed literature.
- c. Search the Climig database, an environmental migration database for literature.
- d. Use of snowball technique to identify literature.
- e. Traditional review of peer reviewed literature.

I searched for literature using key words such as, "north to south migration" in "Ghana", "gender" and "migration" in Ghana" and "gender" and "climate change" in "Ghana". These

were entered separately. Over 6000 literatures were found. To narrow down the numbers I focused on articles conducted only on the northern regions of Ghana. All the articles were downloaded to a laptop folder for a further scan of the abstracts to determine the relevance of the article to the study. 50 articles have been systematically reviewed for this project. Since this is a feminist research project, I was conscious of including female voices. I made an intentional effort to choose female authored scholarship where possible. This is part of my feminist activism.

The search was conducted between April 25, 2022 to April 28, 2022.

Much of the work done on this topic employed a quantitative approach with field work. This project looks at existing materials in new and interdisciplinary ways. The research stands to make a significant contribution to the gender, climate change and migration topic areas as well as to policy.

3.2.3 Limitations

The research and analysis rely on secondary data or already available scholarship. Findings and interpretations therefore are limited to the interpretation and boundaries of work already done by others. Additionally, the views, voices and opinions of the people from the community will be missing as the study does not engage the community directly. Local actors hold information and possess local knowledge, their experience and knowledge provide valuable contributions and insights. Engaging with local actors will also provide legitimacy and transparency in the production of knowledge and credibility on the outcome or findings of the study. Future research will benefit from engagement with the local community through interviews, surveys or focus group discussions to gather rich data, ensure transparency and enhance legitimacy for the study. Although substantive literature was found on the topic, they

did not have a specific focus on gendered analysis on climate vulnerability and migration.

This is a gap future research could fill; assessing women from the northern Ghana's perception of patriarchy and their forms of organization around or within it and how this shapes the various forms of vulnerability including to climate change.

Although a community opinion will be missing, my own experiences as a Ghanaian from the south of Ghana will be brought into the research.

3.2.4 Positionality

Stating the author's positionality is very important in feminist analysis. One's positionality influences how research is performed and ultimately impacts the outcome of the research (Vercillo et al., 2021). Feminists do not ascribe to a universal, neutral or objective claim to truth, they believe that production of knowledge is embedded within a social context (Harding, 2009).

I come to this project as a Ghanaian raised from the south of Ghana. I have received both Ghanaian and Western education. I had my Bachelor of political science from University of Ghana and completed my first Master's in Development Studies and Governance from the University of Duisburg Essen in Germany. I am currently pursuing a second Master's degree from Saint Mary's University in Women and Gender Studies in Nova Scotia, Canada. I have done research work on climate change and policy in Africa, specifically West Africa. I work on female empowerment projects and climate change topics. I am currently attached to a climate science and policy research institute and I am the co-founder of a non-governmental organisation based in Ghana that is grooming female entrepreneurs and supporting female education. I have a strong connection to Ghana and to Africa and an undeniable passion for gender equality topics. I bring these multiple practical and research experiences on gender and climate change to this project.

In this research project I have been careful to use literature from the Ghana and specifically female literature when available. I have found the views and positions of African feminism resonating well with me. I come from southern Ghana, therefore privileged than many girls and women who live in the north, but notwithstanding growing up with a single mother came with many financial difficulties. Therefore, being in the south did not automatically mean being well-off. However, as my mother was an educationist, she made sure to provide me with the best education. Therefore, the preoccupation of African feminist on the economic empowerment of women and girls and the push for access to girl child education resonates with me. The founding of Oak Foundation was also due to my own childhood experiences, I believe the best form of women empowerment or feminist activism in Ghana, both in the north and the south of Ghana is supporting women to achieve economic independence with education as one of the means to achieve this.

Due to the many development challenges women of the Global South face, as is evident through this work, the goal of African feminism is to improve the economic and living conditions of African women. Providing more economic opportunities for women is more important for African feminists rather than sexual politics which is the preoccupation of the western or hegemonic feminism. Hegemonic feminism disregards the differences in women's experiences and locations. It disregards the several intersections of race, class, location etc. that shape the experiences of women.

Women from the global north have much more opportunities for achieving economic independence. With this need met Western feminism is preoccupied with sexual politics; uprooting societal structures. Western feminism is also many times fraught with imperialism, hierarchy race and class discriminations.

I relate to the women and girls from the north; as someone who has also experienced poverty that is a result of the imbalance of resources in the hands on many men. My route to financial

freedom and independence has been through education, and therefore support when possible other women and girls to access education. Migrating to Europe has also offered me many opportunities I would otherwise not have had at home. An opportunity that also came through education. Living in Europe and attaining economic independence has also freed me from cultural restrictions back home which would have required me to be married with kids by this age.

My feminist commitment is to continually support the advancement of women's right using a transnational and context-specific approach. I will use my voice, opportunity and privileged spaces to speak up against all forms of oppression against women. This means that my silence to oppressions I see and experience will mean consent which I refuse.

As I work within climate change and education field, I will continue to look out for systemic, intended and unintended marginalization's against women within these sectors and take action to educate, correct, criticize and provide solutions.

Chapter 4: Analysis

4.1 Introduction

This chapter provides an analysis of institutions and practices of power in northern Ghana and how these, combined with climate impacts, are forcibly displacing people from the north to the south, particularly women. Another important dimension that will be explored here is the agency and choice and whether or not these migrants, particularly female migrants, participate in the decision to migrate. What are their roles, position and agency in the migration process? How has this transitioned over time from precolonial, colonial and post-colonial times.

I discuss Ghana's NAP, assessing how gender is or can be addressed in the planning document. Governments are mandated under the UNFCCC international climate diplomacy process to prepare National Adaptation Plans, which should document the government's plans for adaptation, including needs and support required to implement them. It should also assess the climate risks and vulnerabilities of the country. It is an important planning document that will ensure that adaptation needs are mainstreamed in government's overall development plan or agenda. Ghana is currently in the consultation phase to develop a NAP. At present, only a framework of how the NAP will be developed exists. I will address this and provide some recommendations on how gender can be sufficiently addressed in the NAP.

4.2 Institutions of norms, rules and values in the northern regions

Pre-colonial northern Ghana had no central political authority. There was diffused power organised by clans, households, personal spheres of power and influence (such as strongmen), the earth priests and shrine (Lentz, 2006). Yir is an indigenous language that meant "house", "family" or "patrilineal kinship". Patrilineage is a line of tracing descendants through the

male; decision making, inheritance, land, house ownership, leadership in customary rights (such as the distribution of food during festivals) and performance were all through the patrilineage system (ibid). There were male-centric political institutions and leadership. Women had no role and rights in the patrilineal kinship; their roles were linked to the male, that is “mother’s brother” or a “sister’s son”. These males had an important role in inheritance matters and ritual performance. Nnamaeka (2015) highlighted the connection of the African woman to the African man and culturally locating themselves in patriarchal structures rather than around gender, therefore the need to negotiate with the male institution within the local African context in order to avoid or minimize feminist resistance. Women belonged to their father’s lineage and also connected to that of their husbands through marriage.

Chieftaincy is a political institution introduced by the British colonial government to centralise power and create a uniform identity to establish control (Lentz, 2006). Chieftaincy appointments, although done by the locals, was under the colonial power order. Appointees were men, so that the British political organisation reinforced the patriarchal political system that existed. Chiefs were the intermediary between the people and the colonial authority (Abdul- Korah, 2011). The court system was another invention of the colonial authority. Colonisation was not only a “political project” but also a “cultural encounter” which invented new practices, norms and traditions and modified existing ones (Lentz, 2006). Certain traditions and political institutions in the north of Ghana today are colonial inventions. Although chieftaincy was a British innovation, it merely formalized and centralized already existing political institutions and power relations. Marriage was a tool for power and to show power. Through marriage, chiefs could create alliances that expanded their power; some chiefs had between 35 to 65 wives (ibid). Women were simply objects for power expansion.

Despite the assertion that patriarchy in northern Ghana was reinforced by colonisation, other accounts have documented how the colonial economy contributed in some ways to clamp down on patriarchy in northern Ghana. When the Christian missionaries arrived in the 20th century in Dagaaba in northern Ghana, they tried to assimilate the population into the British way of life. Practices that were seen as ungodly were discouraged. Practices such as polygamy, fetish worship, early and forced betrothals were discouraged (Abdul- Korah, 2011). The missionaries saw these practices as barbaric and uncivilised. According to Abdul- Korah (2011) the clampdown of these patriarchal institutions and customary practices came at the benefit of Dagaaba women. Women in Dagaaba had no agency to select their husbands, these decisions were made by the men of the family. Suppression of such practices meant that women could now have a say in who became their life partners.

The Native Court authority (responsible for settling disputes), before the establishment of the court system by the colonial government, was composed of traditional chiefs and elders. These were male leaders whose interest was to keep the status quo. Women stood no or very little chance of getting a fair trial at these fora. Abdul- Korah (2011) argues that the establishment of a colonial court system provided women in Dagaaba a better chance of a fairer hearing. Women who had lost cases at the Native Court could present their cases to the Gold Coast (Ghana was known as the Gold Coast during the colonial era) Supreme Court. A Dagaaba woman who lost a forced marriage case at the Native Court, won the case at Gold Coast Supreme Court. The Supreme court ruled in her favour, overruling the decision of the Native Court (ibid). Although the colonial institution was patriarchal too, women in the north had more rights. Overruling local leaders' decisions can be seen as positive in the context of women's right, but it also shows the extent of the colonial oppression; how local institutions

and authorities were forced to live under British orders, and how their autonomous rights were suppressed.

Leaders of the time including the Headmen (in charge of migrants), Strongmen (rich powerful and influential people), Earth priest (religious authority) and Chiefs were all men.

The progress achieved was only temporary. Northern Ghana today is still a very patriarchal society. Both household and public space decision making is the prerogative of men. Men have absolute control over many resources (Quaye et al., 2019).

Men are the traditional heads of the household, land successors, land owners, managers and allocators (Adzawla et al., 2019; Quaye et al., 2019; Dugasseh et al., 2021), and they are the main providers for their families. Women, on the other hand, are responsible for care duties such as cooking, child birth and rearing, taking care of the sick, etc. The head of the household controls the family land and farm and has the duty of providing staple food and accommodation (Pickbourn, 2016), being in charge of the household land and farm grants men natural right to farm resources (Vercillo, 2021). The duty of the wife is to support the husband's effort by supplementing food mainly with vegetables from their farm and everything else needed to fully feed the household.

The northern political system remains centralised, with chiefs wielding the ultimate power (Akolgo-Azupogo et al., 2021), and sub-chiefs who play supportive and distinct roles. Chiefs and family heads hold land in trust for the communities, the role of chiefs as custodians of the land is enshrined in Ghana's 1992 Constitution (Berry, 2013; Akolgo-Azupogo et al., 2021; Dugasseh et al., 2021). In Builsa, in the Upper East region (UER), inheritance follows a patrilineal rule, that is men are the traditional heirs, entitled by nature to inheritance (Wrigley-Asante & Agandin, 2015; Akolgo-Azupogo et al., 2021), this is so in the larger northern

regions. Once younger male members of the family reach the puberty stage, they are allocated lands for farming. They are in charge of controlling the income that comes from the sale of the produce from their farms, for making, spending and investment decisions.

Women in the northern regions wield very low political power due to customary laws, norms and rules. Household responsibilities, claim and access to resources are organized by gender, age and marital status (Pickbourn, 2016). In Builsa, in the UER women do not inherit properties, including land (Wrigley-Asante & Agandin, 2015), this is also the case in the entire UER (Yaro, 2010). Also, in the Northern region women are restricted from land inheritance (Yaro, 2013, Quaye et al., 2019). They could serve as custodians until there is an eligible male figure to take over. Women head of households are usually widowed, divorced or separated, but divorce, widowhood or separation weakens women's right to land (Dugasseh et al., 2021). In the Upper West region (UWR) and the UER women's access to land is only through marriage (Akolgo-Azupogo et al., 2021; Wrigley-Asante & Agandin, 2015; Nyantakyi-Frimpong & Bezner Kerr, 2017) and by negotiating other male institutions (Yaro, 2013; Vercillo, 2021). Women can be granted access to land to cultivate but they can never own it (Akolgo-Azupogo et al., 2021; Yaro, 2013; Pickbourn, 2016). Land cultivation is mostly to meet household feeding needs rather than market needs or cash (Wrigley-Asante & Agandin, 2015; Glazebrook, 2011). Women are allocated small plots of land for farming (Quaye et al., 2019) for many reasons including the ability to control them. A research participant in Dugasseh et al.'s (2021, p. 7) work said "when I give my wife a big land, she will not help me on my farm and will always complain of tiredness at night". Since women are not labelled as the main food providers or commercial farmers, accessibility to land is not seen as important (Vercillo, 2021). Land accessibility is easier when organised through

female groups or associations such as the Village Savings and Loan Association (Dugasseh et al., 2021).

House ownership is also restricted, it is difficult if not impossible for single women in the north to own a house. When possible, it must be co-owned with a man (e.g., a husband).

House-building projects are traditionally led and coordinated by men (Glazebrook, 2011).

Responsibilities differ between men and women; “...a man is expected to maintain and continue the name and house of his fathers, to marry a responsible and hardworking girl, to farm and provide food for his wife, children and his parents if they are still alive. A woman is expected to bear and cater for children, cook, wash, plaster walls, do flooring of the yard, and the rooms and roofs and a lot more. A good woman is also one that is faithful to her husband.” (Wrigley-Asante & Agandin, 2015, p. 189). Household care responsibilities fall on women and girls (Pickbourn, 2016; Awinpoka Akurugu, 2021). Pickbourn (2016) notes that the burden of these responsibilities is one of the drivers of female outmigration in the northern regions. Domestic responsibilities are one of the causes of school dropout among girls, additionally when economic resources are limited, boys’ education are prioritised over girls (Bermudez et al., 2020). The majority of the women in the UER have little or no education (Wrigley-Asante & Agandin, 2015), leading to a situation where there are more illiterate women (59.4%) than men (44.6%).

The chiefs, family heads and earth priests make up the traditional institutions in northern Ghana (Yaro, 2013). Today the Imam and Muslim cleric are part of the northern traditional institution (ibid) as the northern regions are predominantly Muslim.

How institutions are gendered can be understood by assessing the rules, norms, actors and their effects from a gender lens, that is how they are structured in relation to men and women

and what the differences are (Mersha & Van Laerhoven, 2016). Institutions set the rules and norms and define resource access. In the northern regions, rules of succession or inheritance has defined who has access to resources such as land, which is the man. Womens´ roles are distinct, and limited to reproductive and supplementary roles.

I do not intend to cast women in the northern regions as victims, nor take away their agency. Their acceptance of these institutions and norms (if that is the case) is also a way of exercising their agency. If they do not accept, they protest. This was seen in the example of the woman who took the family of her deceased husband to the court to stop a forced marriage (Abdul- Korah, 2011).

4.3 Patterns and practices of power and gender vulnerability in the northern regions

Land plays an important role in the interconnection between wealth and power. Those who control the land wield the power and have the wealth. Decisions on resource deployment are made by those who have the power and control the resource. FPE has argued that the use, control and allocation of environmental resources operate within a political context. Thus, power and politics play a very important role in environmental resource use and control (Boamah, 2014; Nyantakyi-Frimpong & Bezner Kerr, 2017). Those who possess the power have much more control over environmental resources. Nightingale (2006) argues that not only do environmental issues play a big role in contributing to disparities between men and women, but also that gender is closely related to how environments are formed. Thus, gender is both a cause and an effect. This is important to understand gender vulnerability and power relations in the northern regions. As established in the previous section, land as the main resource in northern Ghana is controlled, allocated and managed by men. Poverty arises from the unequal distribution of a society's commodities and resources and the concentration of

wealth in the hands of a few or a certain group. When the intersection of resource access, poverty and gender are assessed within the northern region context, it is evident that women in northern Ghana are disproportionately poor.

The northern regions of Ghana have the highest rate of poverty in the country and over the years poverty has deepened (World Bank, 2020; Awinpoka Akurugu, 2021). This is attributed to the changes in environmental conditions that has led to a longer dry season, low agricultural productivity, the high cost of agricultural input, limited access to extension services and limited access to credit (ibid). The position of women and their economic, social and political marginalization makes them poorer relative to men. It is safe to therefore suggest that women in the northern regions of Ghana are the poorest in Ghana. Tsiboe et al. (2017) found in their research work that women are three times more disempowered than men in northern Ghana. This was analysed based on their access and decision-making ability on credit and control over and use of income. Men in the north have much more access and control over resources.

Feminist political ecology scholars focus on assessing structural power dynamics at multiple layers that shapes the vulnerability of women (Vercillo, 2021). I assess these at the economic, social and political level, situating it within the northern Ghana context.

The economic marginalization of women in the northern regions of Ghana are manifested in several patterns and practices of power. Since women do not control land resources, they do not benefit from income made from land transactions, and their use rights are mostly ignored (Nyantakyi-Frimpong & Bezner Kerr, 2017; Mwinkom, 2021). The issue of land scarcity due to land commercialization, and the resultant effect on male out migration is heightening land

insecurity issues for women (ibid). Men use their power to reacquire or sometimes forcibly take away farmlands from women when they have lost their lands through the commercialization of land. Agricultural extension services disseminate agricultural knowledge, information, technology, skills, and support to rural farmers (Abbeam et al., 2018), but women mostly have limited access. A study conducted by Owusu et al., (2018) found that male rice farmers in the UER achieved considerably higher yields than female farmers. Male farmers applied more fertilisers compared to their female counterparts (ibid). This could be due to the fact that male farmers have a better knowledge of fertiliser application due to their easy access to extension services and technical training than female farmers. Female farmers may also not be able to afford to buy fertilizers due to their limited income. Female rice farmers have limited access to technology use and knowledge that affects their farm production. Owusu et al (2018) notes that access to extension services can limit constrain to access to capital. Female farmers' reduced access to extension service therefore has an impact on their economic health and resource accessibility overall. With the right knowledge in technology and its use, resource access and training, women farmers in the UER would have possessed the ability to perform as high as their male counterparts or exceed male performance in rice production (Owusu et al., 2018).

Credit access improves resilience and reduces vulnerability, however custom practices and women's limited social capital and network constrains their access to credit. Women in Builsa district of the UER have less access to credit, education, land and are not involved in decision making processes (Wrigley-Asante & Agandin, 2015), neither in the household nor public places. Female-headed households are more vulnerable than male-headed households in the Northern region (Suhiyini et al, 2019). Contrary to common findings in the literature, a study conducted by Owusu et al. (2011) showed evidence of higher levels of credit access among

women in the Northern region. 44% of male participants of non-farm activities and 12% of male non-participants of non-farm activities had access to formal credit, whereas females were 47% and 27%, respectively. This debunks the common narrative of the “female” always being the poor and vulnerable. The research was conducted with community leaders and members of farmer-based organisations and the findings therefore suggest that if women gain more access to community leadership and farm-based organisations, their access to capital could be enhanced.

One of feminist concerns is about women’s unpaid labour. In the UER women perform a lot of the unpaid labour and for labour that is paid the income is controlled by a husband, in the case of married women (Owusu et al., 2018). Women are also mostly engaged in petty trading, namely but not limited to selling firewood, charcoal, shea-nut and locally brewed drinks (Wrigley-Asante & Agandin, 2015) which does not accrue large sums of revenue. Women farmers are also predominantly engaged in vegetable farming (Vercillo, 2021; Nyantakyi-Frimpong & Bezner Kerr, 2017) which serves household feeding purposes. Receiving remunerations has a huge effect on one’s ability to take decisions on household spending, which is a form of household agency (Hanmer & Klugman, 2016). The division of labour is thus structured heavily along gender lines (Awinpoka Akurugu, 2021; Nyantakyi-Frimpong & Bezner Kerr, 2017). Paid work outside of the home empowers women more than paid or unpaid work within the home (Hanmer & Klugman, 2016).

These differentiated economic duties and responsibilities are also reflected in remittance activities. Whereas female migrants’ remit to support household needs, male remittance goes into farm investments and acquisition of personal equipment like bicycles (Pickbourn, 2016).

Women are disempowered by the lack of access to capital and the ability to make decisions on capital access and use, high familial duties, and the lack of access to social network and group memberships (Tsiboe et al., 2017). One's livelihood status is determined by their human capital; human capital is defined as knowledge and skills (Tanle, 2013). The better or higher human capital women possess, the better chance they have to improve their livelihood status. Limited access to education, knowledge, information and training from extension services contribute to female vulnerability. All these cultural restrictions, that are a result of the imbalance in power relations between the men and the women of the northern regions, places limitations on women's economic rights and independence.

Socially, the marginalization of women in the northern regions of Ghana are manifested in several patterns and practices of power. Social norms impede women's access to tractor services directly. A woman has to depend on their husbands (or sons, for those without husbands) to acquire tractor services on their behalf (Vercillo, 2021). Women who attempt to negotiate by themselves are serviced last after the men have been served. The consequence is that the service comes too late, when the planting season is over.

It is desirable for men to migrate permanently to the south of Ghana. This is fully accepted and seen as the norm. However, permanent male out migration from the north holds some consequences for the women left behind in the communities. The responsibility of feeding, caring and sheltering the family fully and completely fall on women once the men migrate (Wrigley-Asante & Agandin, 2015). This increased burden leads to economic, social, emotional, psychological and health challenges and distress. Male out migration can also bring some socioeconomic benefits (Wrigley-Asante & Agandin, 2015) with remittances received supporting household expenses and investment in agricultural production and other

non-farm businesses. The absence of men in the household also means limited access to land and capital for the women left behind.

When husbands migrate, customs and traditions restrict married women from engaging or talking frequently to other men and cannot be seen at public places lest they are accused of unfaithfulness (Wrigley-Asante & Agandin, 2015). Women whose husbands out-migrate therefore experience high levels of loneliness which could lead to depression and other forms of mental health issues. Some women are sexually harassed when their husbands migrated to the south (ibid). A virtuous woman, known as a “pogminga” in the Dagaaba culture is one that does not show anger, one that tolerates everything, surrenders to her husband’s authority and male figures of her marital home, does not talk back at men or utter a word in the presence and remain faithful to her husband and stay in the marriage regardless of how they are treated (Awinpoka Akurugu, 2021). In order to be seen as a “pogminga”, many women endure various forms of abuse in their marriage.

Women are politically marginalized due to domestic responsibilities that burdens women and restrict their rights and access resources, develop human capital and join social and political groups networks (Carr & Thompson, 2014). The consequence of this is reduced resilience to shocks including climate shocks and risks. These restrictions combine to increase women’s vulnerability to climate change and limits their rights to health, quality life and many freedoms.

The local practices and patterns of power in the northern regions limit women’s access to land, restrict women’s participation in the market, reduces women’s access to modern agricultural knowledge, technology and inputs, and decreases their economic independence.

These are all factors that shapes women's vulnerability to climate impact in the northern regions.

4.4 Agency and (climate induced) migration

Regions and populations with significant development limitations, such as high levels of poverty, governance constrains and limited access to basic resources and services, are highly vulnerable to climate impacts (IPCC, 2022). Communities dependent on land-based resources also stand to be vulnerable to climate risks. Poverty is high in communities that lack structural reform, these communities are vulnerable to extreme weather events, experiencing rising temperatures, and tend to have low levels of education and big household sizes (World Bank, 2020). Poverty and climate vulnerability have a cause-and-effect relationship; thus, poverty reduces resilience to climate change and climate change contributes to increasing poverty.

The northern regions are characterized by both climate vulnerability and poverty factors. There are frequent droughts, erratic and shorter rainfall, and land degradation in the northern regions of Ghana (Glazebrook, 2011). In the UWR there is an observed rising temperature (temperature has doubled compared to over 2 decades ago), the sunny days are longer, the harmattan season (which is the 'colder' season) has also experienced higher temperatures, and the intensity of the cold has reduced (File & Derbile, 2020). A research participant in File & Derbile's (2020) work recounted as follows "the severity of the cold (waaring) had significantly diminished so that nobody feels the severity of the cold that was experienced in the past during the season in present times. Who baths warm water these days? Even old men like me bath cold water because the warm season has extended and temperatures have increased almost throughout the year" (File & Derbile, 2020, p. 32). Intense heat and unpredictable rainfall patterns are affecting farming activities in the Northern region (Vercillo, 2021; Antwi- Agyei et l., 2017). Floods and drought are key climate stressors

impacting the livelihoods of farmers in the north (Antwi- Agyei et al., 2017). Around 80% of the farmers in the UER who participated in Awunyo - Vitor's (2017) study indicated their awareness of the changing climate. This they have observed as rising temperatures and declining rainfall. There are also changes in the direction of the wind, the wind which used to be from the east to the west accompanied by heavy rain, no longer follows the pattern of the direction and comes with little or no rain at all (File & Derbile, 2020). Water resources are becoming scarce, and natural disasters such as floods and droughts are becoming more rampant in the Nandom and Lawra districts (Shaibu et al., 2020). Traditional methods are no longer enough to adapt to the changing climate, causing many challenges for farming. Modern innovation and technology, combined with traditional knowledge and methods, will be needed to keep farm production stable or improve it (File & Derbile, 2020).

The gendered impact of climate change has also been documented. The higher vulnerability of females to climate risks has been proven by many researchers (Singh & Singh, 2015, Bob & Babugura, 2014; McGregor, 2010; Yegbemey et al., 2016; Antwi-Agyei et al., 2013). The vulnerability of women cannot be assessed without an analysis of the multiple levels of oppression women face, that intersect to create this vulnerability, in particular patriarchal institutions that limit women economic, social and political rights intensify and constrain women's ability to adapt to these climate impacts (Eastin, 2018).

Migration is one of the coping mechanisms adopted to climate impacts in the northern regions, although that alone does not account for the massive out migration happening in the northern regions. The most popular destination is the south of Ghana, mostly the Eastern, Ashanti and the Greater Accra regions. Migration flows have also transitioned over time from

being a seasonal act to a permanent one. Although men were the dominant actors, this has shifted with women now being active participants in migration (Abdul- Korah, 2011).

North to south migration has some historical and colonial relevance. In the 20th century, the colonial government launched a labour migration campaign to recruit young men from the north to work in mines and plantations in the south (Lentz, 2006; Abdul- Korah, 2011; Awedoba & Hahn, 2014). Chiefs were convinced by the colonial administration of the economic benefits of sending their men to the mines in the south. While some sent men willingly, the threat of punishment forced other chiefs to send men against their will (Lentz, 2006). This was a forced and involuntary migration in some cases. Around 3,800 migrants from the north were employed in southern mines in 1914 (ibid). Migration to the cocoa plantations is documented as even more abundant than labour migration to the mines (ibid). Return migrants portrayed a sophisticated lifestyle which was attractive to those left behind, which created more appetite and interest amongst many young men to migrate. It is also important to note that it is the export of labour from the north that made the south wealthy, and contributed to the development of the southern economy. This is very similar to the colonization history between the Global North and the Global South. It was the export of labour, minerals and resources from the Global South to the Global North during colonization that has contributed to their economic development and power. Migration, which began as a seasonal act, with many migrants returning back home, is now becoming a permanent act. The shift from dominant male out-migration to now dominant female migration is also noteworthy.

Migration literature positioned women as passive migrants and men as active migrants. The position of the northern woman in the history of migration is not static, it has changed over time. Historically women have been excluded and discouraged from migrating, it was more

acceptable for men to be mobile than women (Abdul- Korah, 2011). In the colonial economy, there were limited opportunities for women in the destination countries, and those who migrated had to do so with a husband. The woman's primary responsibility as an escort was to provide support to the husband and raise a family. They were not intended to take on a paid job. Unmarried women had even much more limited mobility; those who were successful did so by first visiting family in the south and using the opportunity once there to look for a husband to marry in order to remain in the south (Abdul- Korah, 2011). Women's ability to migrate was linked to men, with marriage being the vehicle to achieve that. In recent times, more females are migrating from the north to the south (Owusu & Yeboah, 2018; Lattof et al., 2018, MESTI, 2013). The demography is usually young and single women. Unmarried women are more likely to migrate than married women (Lattof et. al, 2018). Kwankye (2012) found in his study on north-south child migration in Accra and Kumasi that many child migrants were female between the ages of 15 to 19; 65% of the respondents were female out of that 57.6% were between the ages 15 -19 years. Many migrated to pursue an independent life and opportunities due to parents' inability to be able to provide to meet their needs; some parents also see migration as an investment (ibid). The feminization of migration has become an important theme in recent scholarship on migration. Although female migration is on the rise, this is seen as undesirable within the northern communities whereas male migration is seen as the norm and desirable (Pickbourn, 2016).

Females are migrating due to the lack of economic opportunities in the north (Saigal, 2016). Through migration women and girls are able to pursue new economic opportunities that they would otherwise not have in the north (Wrigley-Asante & Agandin, 2015). An analysis of Ghana's 2000 and 2010 censuses by Lattof et. al (2018) showed that economics is the biggest driver of internal migration in Ghana. Poverty in the north is the main contributor to human

mobility from the north to the south. However, migration has so far not contributed to reducing poverty levels in northern Ghana (Abdulai et al., 2018). The unequal economic development between the north and the south continues to constrain economic prospects in the north (Owusu & Yeboah, 2018). In the UWR returnees' success stories and improved standard of living entices others to explore the migrant journey (Baada et al., 2021). The same can be said for the entire northern region.

Aside from the economic motivations, certain northern traditions and norms has driven women and girls from the north to the south. Girls are betrothed to older men and forced to marry early to start a family. Girls who do not wish to do so are forced to leave the community (Lattof et al., 2018). Such norms cause involuntary migration among females from the northern regions. According to Bermudez et al. (2020, p. 152), "...in Ghana, lack of economic opportunities coupled with cultural and social factors, such as unequal and overburdened gender roles in household chores, parents' apathy toward girls' education, and anticipation of early marriage (especially betrothal to older men), are perceived to cumulatively account for the rise in girls' migration to southern Ghanaian cities to carry loads for money". The northern tradition implores females to possess household necessities in preparation for marriage, and to obtain these many girls migrate to the south to work in order to save money to acquire the necessities needed for their marriage. Parental death is also another cause of migration particular among children (Bermudez et al., 2020).

Declining environmental conditions in northern Ghana has also been documented as another driver for north to south migration (Abdul- Korah, 2011; MESTI, 2013). Van der Geest et al. (2010) found a strong correlation between environmental factors and migration from northern Ghana to the Ashanti, Eastern and Brong Ahafo regions. Districts with less vegetation cover

and irregular rainfall have higher levels of out migration whereas those with greener vegetation and more humidity have lower out migration rate. Better ecological conditions mean more opportunities for gaining secured income and better livelihoods. In Baada et al.'s (2021) research work, some interview participants reported that their decision to migrate from the Upper West Region to the Brong Ahafo region was due to declining environmental conditions in their region. Reduced rainfall, and decline in soil fertility heavily impacts food production, requiring twice the amount of effort to produce quantities that previously required single efforts. However, out migration could have a positive outcome on vegetation cover in the long term, as pressure on land and other resources reduces due to less population.

Environmental factors such as land degradation, and drought, combined with poor infrastructure such as road, market facilities, the lack of job opportunities and the lack of interest in agriculture are among the main reasons why young girls migrate from the north (Lattof et al., 2018, MESTI, 2013). The scarcity of resources are not the only or main drivers of north to south migration; underdevelopment that has led to high levels of poverty is also a driver of the northern population flows to the south in search of greener pastures (Van der Geest et al., 2010).

The economic and social drivers have been documented as the highest drivers of migration, but the interconnection between the social, political, economic and environmental factors fully account for the high out migration rate in northern Ghana, particularly amongst females.

Now that it is understood who is migrating and why, the next theme to explore is who the decision-makers of the migration are. Scholarship has documented many stakeholders of the decision process including family, and the migrants themselves.

Girls are challenging the status quo by making the decision to migrate themselves and finding the resources to make the move (Anarfi & Agyei, 2009 cited from Lattof et al., 2018; Abdul-Korah, 2011; Owusu & Yeboah, 2018). About two-thirds of the female migrants reported to have decided on their own to migrate whereas over 50% of male migrants had the decision taken by others (Kwankye, 2017). Although this shows more agency for women, there are certain negative cultural undertones that could explain this. Men are deemed resourceful in the northern communities and have inheritance and household leadership duties; this therefore could be the reason for the high interest in their mobility requiring a collective family or community decision. Amongst children the decision to migrate is made by their parents (Kwankye, 2017; Bermudez et al., 2020). The decision to migrate is not only limited to parents in some cases, but the whole family as a unit (Kuuire et al., 2015), discussing with the family provides the buy-in and the financial support needed to make the move.

Migration is already driving some changes in the northern tradition, with men's traditional role as breadwinners of the family being challenged. In the UWR male migrants who return home poor are unable to fend for their household, shifting those responsibilities to wives, who become the main bread winners (Abdul-Korah, 2011). It is important to note that this shift is causing more burden for women as the men do not take over all the traditional women's roles; women have to perform both the man's responsibilities and hers.

Ability to decide for one's self is an important measure of the level of agency.

When women are able to question and challenge patriarchal practices and structures and are able to pursue actions in their self-interest, agency can be said to exist (Hanmer & Klugman,

2016). In the female north to south migration literature, women in the north have high levels of agency. They take their own mobility decisions.

The question of agency and choice is an important one but could be a difficult question to answer. According to Hanmer and Klugman (2016) agency is mostly seen as a result of an action without a consideration of the context of the choice of the action, thus was the choice of action made without coercion? Agency also mean the existence of choice. Should the social, political and economic conditions in northern Ghana change, will females decide to stay home? I am inclined to answer yes. Although women have the agency to decide on their mobility and quest to pursue better economic opportunities elsewhere; this is a choice they are “forced” to make due to poor conditions back home which makes is difficult if not impossible to stay.

Agency here is being measured by the women of northern Ghana’s ability to make or partake in their mobility decisions. There are many other areas such as the ability to decide who to marry or at what age to marry that is restricted to these women, therefore limiting their agency in that context. Agency is multidimensional and context-specific, having agency in one sphere of life does not automatically mean that agency exist in other spheres (Hanmer & Klugman, 2016).

4.5 Migration as a (climate) adaptation strategy shaped by gender relations and practices

Migration is becoming a popular reaction to environmental and ecological stressors in rural Ghana, particularly the northern regions (MESTI, 2013). Migration to the south is a livelihood sustenance strategy (Shaibu et al., 2020; Assan et al., 2018), as it becomes more challenging to secure land for farming, many young people make the decision to migrate to the south. Farmers of the Nandom town of the UWR see seasonal labour migration as a contributor to livelihood security (Van der Geest, 2010). Migration contributes to food security in the north

by increasing purchasing power for farm materials and input and importing food from the south in times of food shortages (ibid). Through migration, access to new information, knowledge and innovation is gained, which is useful for development back home. Migration patterns differ between males and females, with females preferring seasonal migration, and males having a preference for permanent migration (Kumasi et al., 2017).

Migration is not the only climate adaptation strategy adopted in the north. Farmers engage in other non-farm activities which provide extra income (Kumasi et al., 2017) and improve resilience. There is a strong correlation between sustainable household income and food security and engagement in non-farm activities (Owusu et al., 2010). The most common non-farm activities are cotton ginnery, soap making, foodstuffs trade, and small-scale agro-processing of sheanuts and groundnuts. Agro-processing of sheanuts, rice, groundnuts and petty trading are common activities among females (Owusu et al., 2010; Suhinyini et al., 2019; Assan et al., 2018), whereas men are engaged in masonry and casual labour (Suhinyini et al., 2019). Non-farm activities are generally more common among females, as the men are mostly involved in on-farm activities. However, participation of men in non-farm activities generally resulted in higher household income than women (Owusu et al., 2010). This could be due to higher levels of education among men which gives them knowledge, training and skills to access more capital and employ more marketing or trading techniques to advance their business.

Education and access to climate information is a significant determining factor for what adaptation strategies are adopted (Mwinkom, 2021). Well educated persons are better able to comprehend and understand climate risks and coping technics which can be employed in their farming practices to improve resilience. Membership with associations improves access to

knowledge and information; burdened with domestic chores women have limited time to participate in social networks and groups. Education levels among men in the northern regions are higher than women. This is shown in Ghana's 2021 census, 1241,225 females have never been to school compared to 906,762 males; 852,039 males are in school now compared to 760,567 female and 553,228 males have been to school in the past compared to 420,545 females (GSS, 2021). In addition, men have better access to extension services, are part of social networks and have better access to credit. Women also have restricted access to labour needed for certain kinds of adaption practices such as soil moisture conservation due to cultural norms (Assan et al., 2018; Quaye et al., 2019). Men are traditionally considered as farmers, therefore their access to farm inputs and materials such as labour and extension services are prioritized whereas women are considered as "supporters", and are usually serviced last (ibid). Men also see women farmers as a challenge or threat to their traditional authority or position within the power structure, to eliminate this threat, men restrict women's access to many resources that if granted could make women economically better off than men (Assan et al., 2018). Access to credit influences farmers choice on adaptation strategies, the decision to use improved maize seed varieties and irrigation depend on access to capital in the UER (Awunyo-Vitor, 2017; Quaye et al., 2019; Abdul Rahaman, 2021). The adoption of early maturing seed varieties, use of drought tolerant seeds, row planting and mixed farming are popular amongst men (Adzawla et al., 2019). Membership of Village Savings and Loans Associations are one of the strategies adopted by women in the UER to gain access to credit and capital (Oppong- Kyeremeh et al., 2020).

Restricted by cultural norms, therefore decreasing resilience to cope with declining environmental conditions, many women migrate to the south. The migration to the south also presents many challenges to these women. Migrants from northern Ghana living in Obuasi,

the south of Ghana have relatively little incomes due to the nature of job they are usually engaged in with is petty trading and head portering, compared to the locals, although their standard of living have improved overall as compared to the life before migration (Tanle, 2013). Young migrants face bullying and harassment, poor accommodation structures, poorly remunerated services and high taxes (Lattof et al., 2018; Asare Tutu, 2012). Female migrants face many of these humiliations and abuse, including sexual exploitation, theft and verbal abuse (Asare Tutu, 2012). The poor housing facilities and sanitation impacts their health, causing diseases such as diarrhea, malaria, cholera (Owusu & Yeboah, 2018) and sometimes even death. Faced with economic difficulties, many migrant women are not able to afford health care services. Owusu & Yeboah, (2018) found that many female migrants in the south delivered their first child at home because they cannot afford the hospital bills associated with child birth (Owusu & Yeboah, 2018). Child and mother are also not able to receive medical care after birth due to their low-income status.

The nature of migrant work is also gendered, with female migrants predominantly working as head porters locally termed as *kayayei* or engage in petty trading whereas male migrants predominantly work in the transport sector as commercial drivers locally termed as “*trotro drivers*”, as drivers’ assistants locally termed as “*mates*” or as civil servants (Tanle, 2013; Kwankye, 2012).

Despite these challenges, female out migration is shaping and shifting traditional gendered roles in northern Ghana. It does not only provide women agency in mobility but also women and girls are increasingly taking over roles and duties that were traditionally assigned to men (Abdul- Korah, 2011) such as being the main provider for the household needs. Agency is an important factor of the pursuit of gender equality, as it provides women the opportunity for

economic empowerment as well as engagement in decision making (Hanmer & Klugman, 2016). Female migrant remit money home that takes care of household needs.

Hanmer and Klugman (2016) state that agency is both an absolute and a relative concept; absolute in ways in which women are able to participate in spaces outside of the home and relative is what they are able to do compared to men. Taking over traditionally male dominant roles is an exercise of agency.

Female migration holds economic benefits crucial for the development of the northern economy. Remittances from migrants help meet household needs as well as business needs. The Ghana government needs to do more to support migrants by creating opportunities for work and safe accommodation facilities. Female migrants should be shielded from all forms of abuse, sexual and verbal.

4.6 Ghana's National Adaptation Plan

In 2010, at the UNFCCC's Conference of the Parties 16 (COP16) in Cancun, Parties agreed to a NAP process to enhance ambition on adaptation. Through the NAP process countries are encouraged to identify their medium to long-term adaptation needs and put in place measures to implement them. The process must be country-driven, gender -sensitive, participatory and transparent (UNFCCC, 2010). The goal is to help countries have a plan for reducing their vulnerability and improving resilience to climate risks and impacts. Another important element of the process is the requirement of support to developing countries by developed countries to ensure a successful implementation. The NAP should align with countries' development vision and existing policies, strategies and plans.

A stakeholder consultation and planning process to develop a NAP for Ghana is ongoing.

There is currently only a NAP framework that details how the NAP will be framed. The NAP

framework names women from northern Ghana as particularly vulnerable to climate change impacts and it attributes this to high levels of poverty and cultural norms and practices. The NAP is intended to address social norms and inequalities that shape women's vulnerabilities. How these will be addressed is not mentioned. However, we can learn some lessons from how gender was addressed in Ghana's NCCP to understand potentially how this could be framed in the NAP as well. Policy actions outlined in the NCCP to address gender include mainstreaming gender in policies and process, gender information and education, capacity building, equitable financing, gender representation in decision and resilience building through adaptation projects. These policy actions, although great, do not address the structural issues of gender vulnerability. The structural issues center around social norms and cultural restrictions which creates economic and political challenges for women. Examples include inheritance and land ownership restrictions, unpaid labour, forced early marriages, etc. It is important to note that these are not restrictions experienced by all women in Ghana, they are specific to the northern regions. However, even within the northern region, these experiences differ depending on one's social category such as class, level of education, religion, etc.

The NAP and climate change policies should therefore provide regional specific policy actions to address the specific regional challenges. The northern regions and its women specifically will benefit from such context specific targeting as they have been identified as the least resilient to climate risks and impacts. According to Kumasi et al., (2017, p. 758) "...until women in the northern regions are given the right to own land and the right to inheritance their role in agricultural production and climate change adaptation will remain undermined".

Laws such as the Intestate/ Succession law that grants the spouse and children of a deceased person, who has no living Will the right of inheritance to family properties should be considered for the northern regions to give women a right to inheritance. Before the Intestate/ Succession Law was passed in 1985 many widows and their children were left in abject poverty after the death of a husband or father. Customary practices gave so much inheritance power to male members of the family, who would normally inherit all properties of a deceased family member leaving his immediate family, thus wife and kids with nothing. The passing of this Law curbed this injustice granting women some more inheritance rights. The NAP should create a mandate for the passing of such laws that would significantly improve women's political, social and economic rights.

Women should be educated about their rights and resources available to address injustices. Opportunities for economic empowerment should be provided to women as well. Access to capital and skills for developing agricultural and non-agricultural businesses will boost women's economic power (Saigal, 2016). This has benefit for developing the northern economy overall.

The policies and actions to address these challenges should be a bottom-up approach, driven by the women, they should be engaged and fully participate to ensure that their views and opinions are represented and that the measures proposed could be efficient in tackling the challenges they face.

4.7 Interconnections of the literature

To conclude this chapter, I bring together the themes to discuss their intersections and the connection to the overall topic of this thesis, which is gender and climate change.

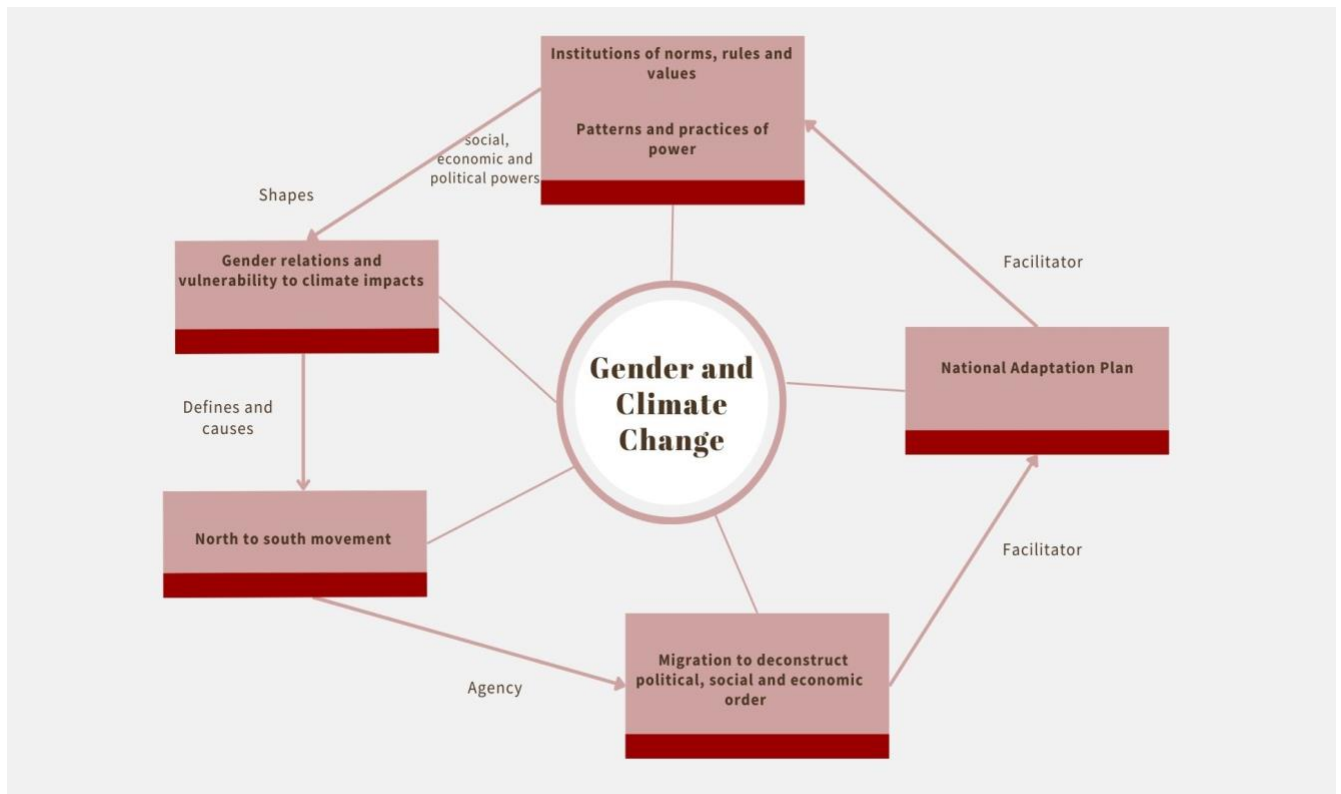


Figure 3: Analytical diagram

Source: Authors' conceptualisation

The institutions of norms, rules and values define resources access and shape social rights. Once defined, these are manifested through the patterns and practices of power. These determine the haves and the have nots and it is within here that economic, social and political powers lie. The patrilineage system of inheritance in northern Ghana means that decision making, inheritance, land, house ownership, leadership in customary rights goes through the male, thus men are biological heirs (Lentz, 2006; Wrigley-Asante & Agandin, 2015; Akolgo-Azupogo et al., 2021). Women's roles in the household are limited to reproductive and caring responsibilities. Men control many of the resources of the north therefore granting them more social, economic and political powers. These defined gendered relations and roles shapes vulnerabilities including those associated with climate risks and impacts. Thus, those with

more power have more economic and social access and rights and are better able to adapt to climate change impacts. The most vulnerable groups are disproportionately impacted by climate risks and extreme weather events due to their limited adaptive capacity and resilience.

Limited economic opportunities (exacerbated by climate change), restricted social rights due to traditional norms, and ecological degradation are among the causes of north to south migration among unmarried and young females from the north. They move to pursue new and better opportunities and to meet or escape social and cultural demands at home. Whereas some migrate to make money to acquire items required for marriage, others migrate to escape forced marriages (Lattof et al., 2018; Bermudez et al., 2020, p. 152).

Females from the north of Ghana are exercising their agency through migration. Migration in the past used to be male dominated, but more females are migrating from the north to the south in present times. Female mobility was restricted but this trend is changing (Abdul-Korah, 2011). Females from the north are exercising their agency by migrating independently and making that decision by themselves (Anarfi & Agyei, 2009 cited from Lattof et al., 2018; Abdul-Korah, 2011; Owusu & Yeboah, 2018; Kwankye, 2012). This movement is in some ways altering and deconstructing the political, social and economic structures of the north, as females take more active roles in rather than supportive roles in meeting household needs, and the traditionally labelled role of the male as the main breadwinner of the family is being challenged (Abdul-Korah, 2011). Remittances sent home serve as household income for feeding and other needs as well as investment into new income generating opportunities. While migration offers a new income opportunity, many female migrants are faced with harsh conditions such as sexual and verbal abuse in their destination cities or regions.

Through the NAP the government can put in place appropriate and efficient policy actions that addresses gender and can enhance women in northern Ghana's political, economic and social rights. These actions must address first and foremost the institutions of norms, rules, values and power practices. This will provide the most effective solutions that addresses women's vulnerability to the impacts of climate risks, emergencies and extreme events in northern Ghana.

Chapter 5: Conclusions and recommendations

This study discussed the intersection between gender and climate change, using north to south migration as the case study. The northern regions used in this thesis referred to the five northern regions of Ghana namely the Savannah region, the Northern region, the Upper East region, the Upper West region, and the North East region. It discussed women's agency in the migration process and how that is changing over time. The analyses were in five parts; (i) Institutions of norms and values; (ii) Patterns, practices of power and gender vulnerability; (iii) Agency and climate induced migration; (iv) Migration as a climate adaptation strategy shaped by gender relations and practices; and (v) Ghana National Adaptation Plan.

Agency as used in this research, has been used to describe women and girls from the northern regions of Ghana's engagement and or involvement in their own migration decisions. North to south migration in Ghana is not static - the trend has transitioned from what was a male dominant act, to a space where a lot of females are migrating and doing so independently. Among girls, the decision to migrate usually lies with parents and other adult members of the family (Kwankye, 2012; Bermudez et al., 2020; Kuuire et al., 2015). Female migration has become dominant due to the increasing limited economic opportunities for women and girls in the northern regions of Ghana, in addition to cultural and traditional norms and practices such as forced marriages, and early betrothals (Abdul- Korah, 2011; MESTI, 2013; Van der Geest et al., 2010; Lattof et al., 2018). These gendered relations and practices are influencing women and girls' decision to migrate from the north to the south to adapt to new forms of living, new freedoms and new economic opportunities. Climate change plays a role in the increasingly limited economic opportunities in the north- but it is not the main or only determinant of north to south migration.

The northern regions of Ghana are the most vulnerable regions to climate risks and impact in Ghana, due to the geographic location of the regions, the agro-ecological zones of Guinea and Sudan Savannah, and the high levels of poverty in the regions (MESTI, 2013). The regions are already experiencing climate impacts, in the forms of erratic and unpredictable rainfall patterns, increasing temperatures and drought (Vercillo, 2021; Antwi- Agyei et l., 2017; File & Derbile, 2020). As these regions are economically dependent on agriculture, these ecological changes have an immense impact on economic fortunes, livelihood and income of the population. Crop and food production is on the decline, and so are income sources and opportunities.

However, the impacts of climate change are not equal on all gender groups; women and girls in the northern regions of Ghana are disproportionately negatively affected (Singh & Singh, 2015, Bob & Babugura, 2014; McGregor, 2010; Yegbemey et al., 2016; Antwi-Agyei et al., 2013). This is due to the institutions of norms, rule and values and the patterns and practices of power that define resource ownership and access in the northern regions of Ghana; men are the natural and primary owners of land. As agriculture is the main economic activity in the north, land ownership plays a huge role in defining power, resource control and capital. Those with the land wield the power, capital and control. Those in power and with capital are better able to adapt to climate impacts and improve their resilience to climate risks and extreme events. Women in northern Ghana lack control of the resources needed to adapt to climate change, and are thus less resilient to climate impacts and risks (Kumasi et al., 2017). Due to the differentiated roles and responsibilities of women, the impact of climate change will also differ (Kumasi et al., 2017). A feminist analysis shows that female vulnerability to climate impacts in the northern region is a shaped by the intersection of the economic, political and social factors that compound to create, shape and further deepen these vulnerabilities.

Due to the differences in resource, education acquisition and access amongst self-identifying males and females in the northern regions of Ghana, research has found differences in the kind of adaptation strategies employed by these two different groups. Access to credit influences farmers choice of adaptation strategies, the decision to use improved maize seed varieties and irrigation depend on access to capital in the UER (Awunyo-Vitor, 2017; Quaye et al., 2019; Abdul Rahaman, 2021). The adoption of early maturing seed varieties, use of drought tolerant seeds, row planting and mixed farming are popular amongst men (Adzawla et al., 2019).

The NAP can address these challenges and mitigate the disproportionate impacts of climate change on women and girls in the northern regions of Ghana in several ways. The strongest argument put forward in this thesis is the need for the adoption of new legislation that equalizes land ownership and access between different gender groups. Such legislation can contribute to balancing power relations by empowering females economically, socially and politically. Other recommendations for Ghana's NAP are outlined below:

- i. Organised social groups can improve access to land rights for women.
Membership of a village savings and loans association (VSLA) facilitates access to land, through joint and group land use agreements (Dugasseh et al., 2021). The NAP can support and promote the creation of female focused VSLA's in the northern regions of Ghana.
- ii. Higher education is known to improve knowledge of and access to information on adaptation strategies, and resilience building techniques. Education, including technical and vocational education will also boost access to capital and knowledge

on new market techniques and opportunities. The NAP should promote female education and access.

- iii. Social safety nets targeted at women can mitigate climate impacts on women (Bermudez et al., 2020). This can provide social protection that improves women overall wellbeing and economic capacities. The NAP should offer social protection programmes for women in the northern regions of Ghana.
- iv. Women should be key stakeholders of the NAP development process. Beyond the NAP female participation in all levels of climate change and development decision making processes should be promoted.

This study does not cast females as victims nor a group without agency, but at the same time highlights some of the institutional norms, rules and customs that continue to limit women's development and shape their disproportionate vulnerability. Women are active participants of climate adaptation activities and are exercising their agency through migration to change traditional norms and pursue economic fortunes and power. Women also possess unique knowledge, information and perspective useful to drafting and implementing climate change strategies that can be efficient and effective in addressing climate challenges.

Without paying attention to and addressing the structural factors, hidden in rules, and norms of social and political institutions, that socially, economically and political disempower females, thereby shaping their vulnerability to climate impacts, solutions are unlikely to generate meaningful response or make meaningful impacts and systematic changes.

Feminists and gender studies shed light on these issues, using feminist analytical frameworks such as intersectionality, with the aim of using knowledge to transform society.

This research contributes to the emerging scholarship that shows how women's vulnerability to climate change has been shaped, by applying the feminist intersectional framework.

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